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GEORGE H. SIMMONS, M.D., LL.D.

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## FAULTY FOOD IN RELATION TO GASTRO-INTESTINAL DIS- ORDER \*

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OXFORD, ENGLAND

I have to thank you for the great honor you have done me in inviting me to deliver this lecture. For one whose work has for the most part been carried out in remote corners of the earth, it is at once a pleasing privilege and an educational experience to find oneself in this great center of scientific advancement. For it would be difficult to conceive of conditions more dissimilar than the isolation under which my investigations were for the most part carried out and the stimulating activities of the research institutions of this great city. Those of us whose work lies east of Suez must often pay the penalties which isolation entails, and not the least of these is dissociation from intercourse with our fellow workers in the West. It was, therefore, with a vivid consciousness of my own shortcomings—both inherent and environmental—that I accepted your president's invitation to deliver this lecture.

I count myself favored also, in that the lectureship is associated with the name of Mr. Mellon, who, by endowing it, has done much to encourage investigators still to continue the tillage of the financially unprofitable fields of medical research.

### SCOPE OF THE LECTURE

I propose in this lecture to propound the thesis that much of the gastro-intestinal disorder of civilized peoples at the present day is due to faulty food. In doing so I shall present evidence of the incidence of such disorder among civilized communities and of its comparative absence among certain races living under more natural conditions; and contrast, in general terms, the food habits of the former with those of the latter. I shall refer to the special relation of perfect food to the functional perfection of the gastro-intestinal tract; and from these sources advance presumptive evidence of the effects of faulty food in impairing the functional perfection of the digestive system. Experimental evidence of these effects will then be given, and attention directed to the applicability of the experimental results to the genesis of certain acute and chronic gastro-intestinal disorders. Finally, I shall argue that faulty

foods capable of causing similar effects in man to those produced experimentally in animals are widely made use of at the present day. Having thus introduced the subject to your notice I shall leave you to examine for yourselves in the wards, the clinic and the home the truth of the doctrine I have propounded.

### PREVALENCE OF GASTRO-INTESTINAL DISORDERS AMONG CIVILIZED PEOPLES

It was recently stated by a public health administrator in England that 25 per cent. of all patients seeking relief at our clinics did so for gastro-intestinal disorders. So far as my memory serves me, the statement was made in order to emphasize the necessity for a study of the etiologic factors concerned in the production of this great mass of sickness. It has, too, been pointed out within the last few months that the alarming increase of cancer among town-dwellers in Great Britain is due, in the main, to the increasing prevalence of gastro-intestinal cancer. These are facts of such public concern that they demand the close attention of all students of public health; for if by any means we can prevent gastro-intestinal disorders we shall relieve civilized communities of one quarter of their sufferings.

In the fascinating pursuit of pathogenic organisms as causes of disease, we are apt to overlook the claims on our consideration of sufferers from noninfectious maladies—the claims, for instance, of the dyspeptic or of the sufferer from colonic disease. Possibly this is due to the fact that the dyspeptic rarely dies of dyspepsia nor the subject of colonic disease from colitis. Their discomforts, not being catching, are no more to their neighbors than a source of irritation; consequently their claims on the consideration of the hygienist are overshadowed by the multitude's demand for the elimination of the microbe. The multitude does not know, and we ourselves often forget, that the activities of the microbe as a pathogenic agent are very often dependent on those very conditions of life which give rise to the discomforts and sufferings of the victims of such maladies as indigestion and mucomembranous colitis. It is these conditions of life and of imperfect nutrition which frequently prepare the soil of the body for the rank growth of bacterial agents.

Fortunately, within the last few years the attention of investigators of disease has been directed into new channels of inquiry, channels which take cognizance of the influence of negative factors in the production of disease as well as of positive factors. As is usual in any new development, advance has been made along narrow lines; but the stream of knowledge has gradually broadened, so that we are beginning to appreciate the wider significance of the negative factors in the

\* Sixth Mellon Lecture, read before the Society of Biological Research, University of Pittsburgh, Nov. 18, 1921.



production of disease in general. Chief among them is food deficient in some ingredient essential to the body's well-being, such, for instance, as vitamins, suitable protein, iodine, phosphorus or calcium. It sometimes happens that one such essential is present in the food in insufficient quantity. Then metabolic harmony ceases or becomes discordant and "deficiency disease" results.

It is necessary to emphasize that "deficiency disease" is a question not merely of deficiency of vitamins, but of deficiency of any essential requisite of a perfect food. Nor is this all, for in practice deficiency of one essential often means excess of another; such, for instance, as relative deficiency of vitamin B in the presence of an excess of starch, or relative deficiency of iodine in the presence of an excess of fats; the excesses may themselves give rise to relative deficiencies of other essentials, and especially of those present in the food in relatively small quantities. Lack of balance of the food is a fault second only in importance to actual want of some essential ingredient. The food faults encountered in practice are thus often compounded of deficiencies in association with excesses.

The importance of adequate food-balance is illustrated by even the purest of "deficiency diseases," such as scurvy, concerning which Pitz and Lewis have shown that adequate provision of other food essentials will delay in guinea-pigs the onset of scurvy, induced by lack of vitamin C, and prolong their life. The same is true of other deficiency diseases, such as polyneuritis columbarum induced by lack of vitamin B. My own researches have impressed the importance of perfect food balance on me with increasing force within the last few months, since I have been able to show that an excess of fats or of unsaturated oleic acid in the food may cause a relative deficiency of iodine and enlargement of the thyroid gland (goiter). It is necessary also, in this connection, to recognize a further fact, namely, that one cannot in practice dissociate from the effects of deficient and ill-balanced foods those of bacterial or protozoal agencies whose ravages have been made possible by the faulty food. My remarks today, therefore, are to be considered from these broader aspects, namely, of food deficiencies in association with food excesses, and with the fortuitous intervention of microbic or other pathogenic organisms.

#### FREEDOM OF UNCIVILIZED RACES FROM GASTRO-INTESTINAL DISTURBANCES

In considering gastro-intestinal disease in the mass, the realization is forced on one that since it is so common it must have a very common cause. It is helpful, in endeavoring to ascertain the cause of a malady widely prevalent in one community or race, to contrast the conditions of life of such a community with those of another that is free, or comparatively free, from the malady in question. My own experiences have afforded me this opportunity in the case of gastro-intestinal dis-

orders. For some nine years of my professional life my duties lay in a remote part of the Himalayas where there are located several isolated races far removed from the refinements of civilization. Certain of these races are of magnificent physique, preserving until late in life the characters of youth; they are unusually fertile and long lived, and endowed with nervous systems of notable stability. Their longevity and fertility were, in the case of one of them, matters of such concern to the ruling chief that he took me to task for what he considered to be my ridiculous eagerness to prolong the lives of the ancients of his people, among whom were many of my patients. The operation for senile cataract appeared to him a waste of my economic opportunities, and he tentatively suggested instead the introduction of some form of lethal chamber designed to remove from his realms those who by reason of their age and infirmity were no longer of use to the community. Among another of these races, the custom which required an eldest son on pain of death to carry in a conical basket his aged and decrepit parents to the top of a high rock from which to hurl them to destruction has died out only within recent years under the protective influence of British rule; and the proverb "Everyman's basket for his son" still survives the custom.

During the period of my association with these peoples I never saw a case of asthenic dyspepsia, of gastric or duodenal ulcer, of appendicitis, of mucous colitis, or of cancer, although my operating list averaged 400 major operations a year. While I cannot aver that all these maladies were quite unknown, I have the strongest reason for the assertion that they were remarkably infrequent. The occasions on which my attention was directed to the abdominal viscera of these people were of the rarest. I can,

as I write, recall most of them: occasions when my assistance was called for in the relief of strangulated hernias, or to expel the ubiquitous parasite *Ascaris lumbricoides*. Among these people the "abdomen oversensitive" to nerve impressions, to fatigue, anxiety or cold was unknown. Their consciousness of the existence of this part of their anatomy was, as a rule, related solely to the sensation of hunger. Indeed, their buoyant abdominal health has, since my return to the West, provided a remarkable contrast with the dyspeptic and colonic lamentations of our highly civilized communities. Searching for an explanation of this difference in incidence of gastro-intestinal disease in the two peoples, I find it, in the main, in four circumstances: (1) Infants are reared as Nature intended them to be reared—at the breast. If this source of nourishment fails, they die; and at least they are spared the future gastro-intestinal miseries which so often have their origin in the first bottle. (2) The people live on the unsophisticated foods of Nature: milk, eggs, grains, fruit and vegetables. I don't suppose that one in every

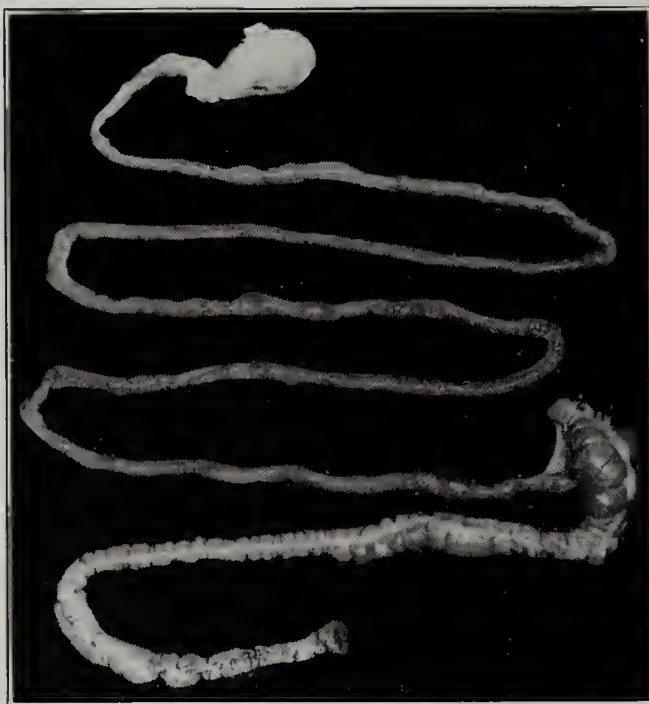


Fig. 1. — Gastro-intestinal tract of control monkey killed on one hundred and fourth day of experiment, fifteen hours after last meal. Stomach and midcolon empty, cecum loaded, lower bowel containing small amount of fecal matter. Bowel evacuated before death.



thousand of them has ever seen a tinned salmon, a chocolate or a patent infant food, nor that as much sugar is imported into their country in a year as is used in a moderately sized hotel of this city in a single day. (3) Their religion prohibits alcohol, and although they do not always lead in this respect a strictly religious life, nevertheless they are eminently a teetotal race. (4) Their manner of life requires the vigorous exercise of their bodies.

#### FAULTY FOOD

Each one of these differences in the habits of my Himalayan friends, as compared with those of Western peoples, would form, in itself, a fitting subject for discourse; but I shall content myself with a brief consideration of the first two under the general heading of "faulty food." It is not that the races to which I have referred live under hygienic conditions superior, as to housing and conservancy, to those of the masses in the West. On the contrary, in both these respects their conditions of life are most primitive. Nor is it that in their agricultural struggles with Nature they have acquired any peculiar immunity to the effects of faulty food; they are, indeed, as susceptible as others to these effects, as the following occurrence illustrates: It fell out that the cultivable lands of one of these races were no longer sufficiently extensive for the increasing population. To meet this it was decided to colonize another tract which had never previously been cultivated. A dozen families were settled there, and they made shift to grow upon its granite and infertile soil such grains as they could. My attention was directed to their efforts, and more especially to the results of them, when ten out of twelve adult young men developed paralysis of the lower limbs due to lathyrism—a rare malady resulting from the disproportionate use in the food of the vetch *Lathyrus sativus*. These settlers, finding it impossible to grow a sufficiency of wheat, had cultivated the hardy vetch and used it in too high admixture with their scanty stores of wheat. The result was the development of paralysis of the lower limbs among the male population, while the female members of the settlement were unaffected. I mention this dramatic occurrence to show you that perfect physique and stability of the nervous system did not protect them from the effects of faulty food, and incidentally to emphasize the sex variations to be found in maladies resulting from food faults. For although in the case of lathyrism the difference in incidence of the disease in the two sexes is more marked than in any other nutritional malady known to me, yet it is in some nutritional diseases a very striking feature.

We see, then, that as exemplified by certain Himalayan races and, as I find from recent reports in the medical press, by such races as those of upper Egypt and northern Nigeria, enforced restriction to the unsophisticated foodstuffs of Nature is compatible with fertility, long life, continued vigor, perfect physique and a remarkable freedom from digestive and gastrointestinal disorders, and from cancer. I must confess that with these examples before me I find myself in accord with Hindhede, who affirms—and on unequivocal evidence—that the two chief causes of disease and death are food and drink.

#### CONTRAST BETWEEN FOOD HABITS OF PRIMITIVE PEOPLES AND THOSE OF CIVILIZED COMMUNITIES

Let us now for a moment contrast the habits of these primitive people in respect to food with those of our more highly civilized communities. The former are content with natural foods: milk, eggs, grains, fruits and leafy vegetables—or, if their state of mind be not precisely one of contentment, they can at least not better their lot nor worsen it. These natural foods—"the protective foods," as McCollum has named them—provide in proper quality and proportion the proximate principles and vitamins necessary for nutritional harmony, and the proper vegetable residues for the healthy evacuation of the bowels. But the case is different with civilized man. No longer is he content with the unsophisticated foods made in Nature's laboratory, with "herbs bearing seed" and with "every tree in which is the fruit of a tree yielding seed." To him these are "still for meat," but preserved, purified, polished, pickled and canned. Some he extracts and distills with the object of procuring concentrates agreeable to his taste. His animal food he heats, dries, freezes, thaws and stores. One way or another by desiccation, by chemicals, by heating, by freezing and thawing, by oxidation and decomposition, by milling and polishing, he applies the principles of his civilization—the elimination of the natural and the substitution of the artificial—to the food he eats and the fluids he drinks. With such skill does he do so that he often converts his food into a "dead" fuel mass, devoid of those vitamins which are to it as the magneto's spark to the fuel mixture of a petrol-driven engine. Unmindful, too, or more often ignorant, of the composition of the fuel-mixture with which he charges his human machine, he joins deficiencies of some essentials with excesses of others, heedless that the smooth running of his bodily functions bears intimate relation to the ordered balance of these essentials.

I am not at the moment concerned with the circumstances of his civilization—expediency, penury, prejudice, ignorance or habit—which have compelled man into this dangerous course. It is sufficient for my purpose that these circumstances exist, and that, in consequence of the food habits they have fostered, normal bodily function cannot be sustained and gastro-intestinal function is one of the first to suffer. Let me emphasize this point: "Gastro-intestinal function is one

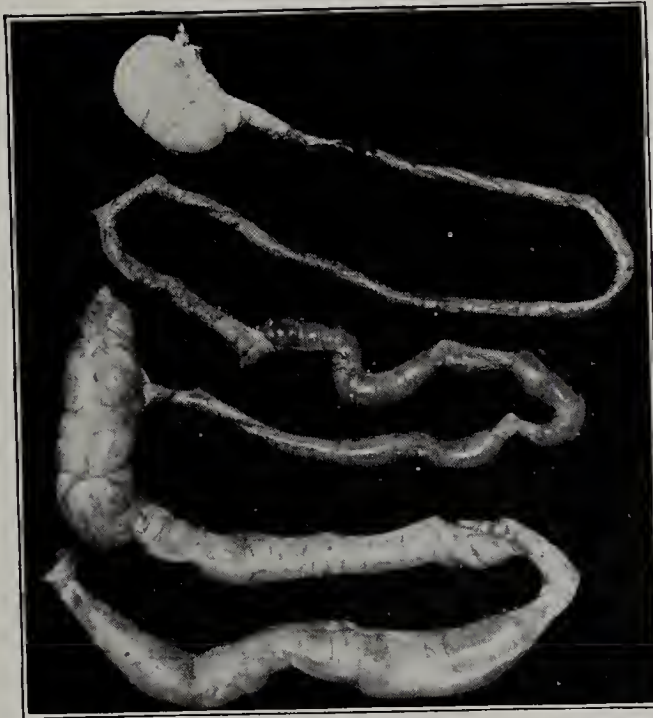


Fig. 2.—Gastro-intestinal tract of monkey fed exclusively for sixty-seven days on autoclaved food and onion. The animal died on the same day as her young, which was similarly fed. Note dilatation of empty stomach, cecum and large bowel; large ileac intussusception; and inert appearance of dilated colon. Intense colitis was present throughout the whole length of the viscus.



of the first to suffer." This truth is made manifest by the clinical evidences of disease that are first to appear in wild monkeys fed on deficient and ill-balanced food: loss of appetite, depraved appetite, vomiting, diarrhea, dysentery, anemia, unhealthy skin, asthenia, and loss of body-weight. If the faulty food be persisted in, other symptoms manifest themselves later, due, in the main to malnutrition of the central nervous system; but it is the gastro-intestinal tract, the functions of digestion, absorption and assimilation that are among the first to fail in consequence of faulty food. These are the signs that our ship is running upon the rocks and, as good pilots, we must be aware of them. I often think that we are apt to assume more readily the office of salvors of wrecks than of pilots whose function it is to prevent them.

But not only is functional failure of the digestive system an early evidence of faulty food, but the gastro-intestinal tract is often the first to exhibit clinical evidence of infection by pathogenic organisms in consequence of it. Let me illustrate this last point by an experience in my own laboratory: Thirty-six wild monkeys were captured in the jungles of Madras and transported with the least possible delay to my laboratory in the hills at Coonor. They were in perfect health and full of vigor—wild things usually are. I had in these animals perfectly normal tissues to work on: a unique opportunity to observe the first clinical and pathologic effects on normal tissues of the agent—faulty food—with which I was working. Each of these animals was placed in a separate cage, and all were confined in the same animal room. One attendant looked after them all. Twelve of them were fed on natural food, the remaining twenty-four on food deficient in some cases in vitamins as well as ill balanced; others were fed on natural food in which the living essences had been destroyed by sterilization. Those that were naturally fed remained free from intestinal disease; those that were fed on deficient and ill-balanced food and on sterilized food developed, within a short time in the majority of cases, diarrhea or actual dysentery. Here, then, is an unequivocal instance not only of the effect of faulty food in inducing a specific disease such as dysentery but of the protection against it that is afforded by a natural and well-balanced food.

#### RELATION OF PERFECT FOOD TO FUNCTIONAL PERFECTION OF GASTRO-INTESTINAL TRACT

Now let us consider for a moment the purposes which perfect food subserves. Every one recognizes that food is taken into the body to repair tissue waste, to supply energy, and to provide the proper medium for the chemical reactions of the body. But do we always visualize these functions of food in relation to the organs of digestion themselves, and to the work to be done by the gastro-intestinal tract? If we did, I

think we should have no difficulty in realizing the special effects on these organs of an insufficient supply of proteins which rebuild the digestive tissues and make good their waste, or of those constituents of the food which supply energy for the production of the digestive secretions and the movements of food along the digestive tract, or of salts which provide the proper medium for the chemical processes of digestion, or of vitamins which activate the cells of the digestive system to healthy function. The effects of deficiency of these essentials must of necessity be manifested in failures of digestive, absorptive, assimilative and motor functions of this important region of the body. It is not necessary to make laboratory experiments to prove that if a woman lives on white bread, margarin, condensed milk and tea with a minimum of imported meat and boiled potatoes she is prone to suffer from such digestive disorders as dyspepsia and colonic disease. For such a diet does not contain a sufficiency of proteins to rebuild the tissues involved in digestion, assimilation and evacuation of the bowel contents; it

does not contain a sufficiency of vitamin to activate the cells of the digestive system to healthy function; it is ill balanced, and by its excessive richness in starch it favors the development in the digestive tract of fermentative organisms, and makes relatively more deficient the vitamins necessary to healthy cellular action; nor does it contain a sufficiency of vegetable residue, of cellulose, waxes and vegetable salts, to insure natural action of the bowels.

#### EFFECTS OF FAULTY FOOD

Nor do we, I think, always consider the dependence of one constituent of the food upon another for its share in the maintenance of nutritional harmony. We know that if

such essentials as protein and inorganic salts be not provided in adequate quality and quantity, growth must flag and repair of body waste must fail or cease; but do we realize that the utilization of suitable protein and of suitable salts is dependent on the presence in the food of a sufficiency of vitamins, or that the efficiency of vitamins is dependent in considerable measure on the adequate supply of these proximate principles? If the tissue waste of the gastro-intestinal tract be not made good—whether in consequence of insufficient supply of suitable protein or of its insufficient utilization—then must the production of digestive juices fail, the mechanism of absorption and assimilation flag, the neuromuscular control of the gastro-intestinal tract become inefficient and the tissues of the tract become the prey of pathogenic organisms. It is thus that such a nutritional disease as pellagra arises, and thus that the manifold varieties of gastro-intestinal disorder due to failure of digestive function may come into being.

It is unwise to consider any of the essential ingredients of food, whether proteins, carbohydrates, fats,

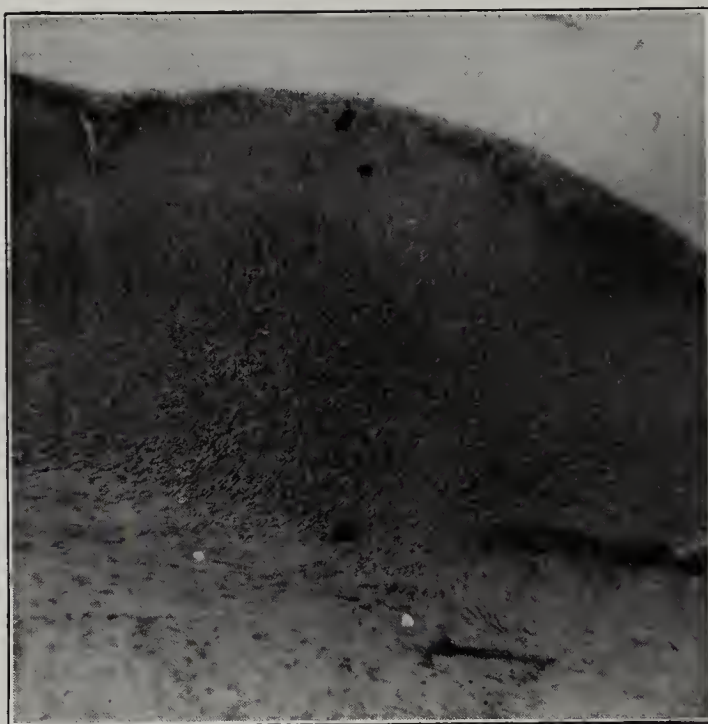


Fig. 3.—Section of longitudinal band of muscle from colon of a healthy monkey.



salts, water or vitamins, as independent of the assistance derivable from their associates in the maintenance of digestive and nutritional harmony. No doubt, some of these have special relations to others, as for instance that of iodine to fats, that of vitamin B to carbohydrates, that of vitamin A to lipoids, calcium and phosphorus holding substances, and that of vitamin C to inorganic salts. But whatever be their special relations one to another they are all links in the chain of essential substances requisite for the harmonious regulation of life's processes: if one link be broken, the harmony ceases or becomes discord. Of late the science of nutrition has tended to assume a too "vitaminic" outlook, and it is well to realize that, important as these substances are, man cannot live on vitamins alone, nor can he live on proximate principles alone: each is complementary to the other, and deprivation of the one leads to starvation as surely as does deprivation of the other. Our knowledge of vitamins is still in the making, but it serves a useful purpose to have some mental conception of their function. I have likened it to the magneto's spark which ignites the fuel-mixture of a petrol-driven engine, liberating its energy: the spark is of no use without the fuel nor the fuel without the spark; nay, more, the efficacy of the spark is dependent in great measure on the composition of the fuel-mixture.

#### EVIDENCE OF THESE EFFECTS

But if I am to succeed in demonstrating the truth of my claim that faulty food is responsible for much of the gastro-intestinal ill health so common at the present day, I must provide other than presumptive evidence of its effects on the digestive system and convince you also that foods having faults capable of causing these effects are nowadays extensively used by civilized communities. I propose, therefore, to fulfil the first condition by ocular demonstration and to rely upon my argument for the fulfilment of the second.

For some years past I have been engaged in a study of the effects of deficient and ill-balanced food on the various organs and tissues of the body, as observable in animals fed on such foods under experimental conditions. Having reached certain conclusions with respect to the digestive organs and gastro-intestinal tract in such animals as pigeons, rats and guinea-pigs, I repeated my experiments in wild monkeys captured in the jungles of Madras so that I might observe the effects of faulty foods on animals closely related to man. The foods I used were natural foods that had been rendered faulty by various means; they were of several classes:

1. Foods deficient in all three classes of vitamins, in suitable protein in fats and excessively rich in starch.
2. Foods deficient in vitamins B and C and excessively rich in starch and fats.
3. Foods deficient in vitamin C only, in vitamin B only, and in vitamins A and B, but well balanced in other respects.

These classes of food presented for my purpose an adequate range of deficiencies alone, and of deficiencies in combination with excesses; they include many of the food faults observable in the dietary of many civilized people at the present day. Before demonstrating the effects of these faulty foods on the digestive organs and gastro-intestinal tract, I must point out very shortly the simultaneous effects to which they give rise on the endocrine regulators of metabolism, the thyroid gland, the suprarenal gland, and the pituitary body; for it is to be remembered that the maintenance of healthy gastro-intestinal function is dependent in considerable measure on healthy endocrine action. It would carry me too far afield to develop adequately the latter theme: I content myself, therefore, with directing your attention to it, and with laying emphasis on the fact that it is necessary to consider in relation to the changes produced in the digestive system by faulty food those that are simultaneously produced by the same agency in the endocrine system. As an instance of this intimate correlation of digestive and endocrine

function and disorder, I may refer to the simultaneous production by faulty food of colitis, of depreciation of liver function, and of suprarenal derangement. The first is the most obvious clinical feature of the nutritional disturbance induced by the faulty food; the occurrence of the second may serve to account for the toxic symptoms from which the sufferers from mucous colitis suffer, and for the opinion held by some that mucous colitis is due to hepatic insufficiency; while the third provides some insight into the effects of fatigue, anxiety and cold in precipitating attacks of mucous colitis in the malnourished subjects of colonic disease. The malady is, indeed, as much a disorder of the suprarenal glands as of the colon.

The data afforded by specimens indicate that the profound changes resulting in the gastro-intestinal tract in consequence of the various deficient foods employed are similar in kind in the three species of animals I used—pigeons, guinea-pigs and monkeys; it may be expected, therefore, that they will be similar in kind, if not in degree, in human beings whose dietaries have faults similar in kind if not in degree to those used in the experiments. I think there is good reason to believe that the prolonged use of a moderately faulty food will lead to them as certainly as the less prolonged use of a more faulty food. Without attempting to analyze them too closely or to attribute to each fault a specific effect we may, I think, draw from them certain broad conclusions:

1. The health of the gastro-intestinal tract is dependent on an adequate provision of vitamins. The absence of growth vitamins is capable of producing pathologic changes in the tract which frequently assume the clinical form of colitis. This observation is

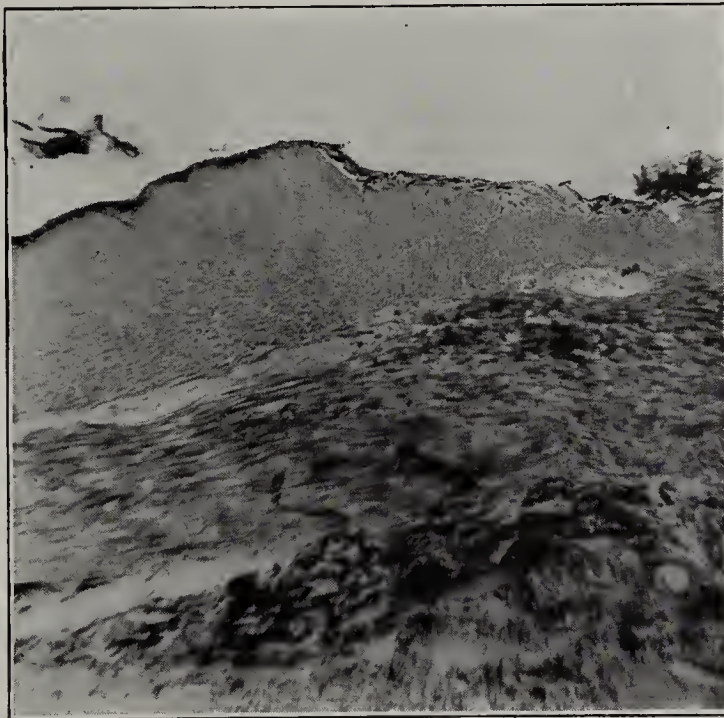


Fig. 4.—Section of longitudinal band of muscle from greatly dilated colon of monkey fed exclusively on autoclaved rice. Compare with Figure 3. Note great thinning of longitudinal muscle band, which is spread out at its margins over surface of circular muscle layer. Note also prominent chain of swollen ganglia, including four large oval ganglia lying between muscle layers.



of the highest importance in view of the frequency with which this malady is encountered at the present day. Deficiency of vitamin C is especially concerned in the production of congestive and hemorrhagic lesions in the tract, and evidences of these may be found in animals which have not exhibited during life any of the clinical manifestations of scurvy in noteworthy degree. A state of ill health of the gastro-intestinal tract may thus be a prescurbutic manifestation of disease due to insufficiency of this vitamin, especially when associated with an excess of starch or fat or both in the food.

2. The disorder of the gastro-intestinal tract consequent on vitamin deficiency is enhanced when the food is ill balanced.

3. The pathologic processes resulting in this situation from deficient and ill-balanced foods are:

(a) Congestive, necrotic and inflammatory changes in the mucous membrane, sometimes involving the entire tract, sometimes limited areas of it.

(b) Degenerative changes in the neuromuscular mechanism of the tract, tending to dilatation of the stomach, ballooning of areas of small and large bowel, and probably also to intussusception.

(c) Degenerative changes in the secretory elements of the tract—of the gastric glands, the pyloric glands, the glands of Brunner, the glands of Lieberkühn, and the mucous glands of the colon. These changes are such as must cause grave derangement of digestive and assimilative processes.

(d) Toxic absorption from the diseased bowel, as evidenced by changes in the mesenteric glands.

(e) Impairment of the protective resources of the gastro-intestinal mucosa against infecting agents, due to hemorrhagic infiltration, to atrophy of the lymphoid cells, and to imperfect production of gastro-intestinal juices. This impairment not only results in infections of the mucous membrane itself, but also permits of the passage into the blood stream of micro-organisms from the bowel.

(f) It is to be emphasized that the pathologic changes found in the gastro-intestinal tract are more marked in some individuals than in others; and that, while all of them may occur in one and the same subject, it is usual to find considerable variation in the incidence of particular lesions in different individuals.

#### APPLICABILITY OF EXPERIMENTAL RESULTS TO GENESIS OF GASTRO-INTESTINAL DISORDERS

With these evidences of the effects of faulty food before us, we have, I think, good reason to proceed with our investigation of the relation of faulty food to the common gastro-intestinal disorders of the present day.

It is usually accepted as a proof of the causation of a malady that if an investigator by one agency or another can produce in animals, under controlled experimental condition, the malady in question, then this agency is the cause of the disease, or intimately associated with its causation. Consider, then, that by

means of faulty food, (1) diarrhea, (2) dysentery, (3) dyspepsia and gastric dilatation, (4) gastric and duodenal ulcer, (5) intussusception, (6) colitis and (7) failure of colonic function can be produced experimentally. I do not argue that they are invariably so produced or that faulty food is the only cause of them. I do not deny the influence of microbic or other pathogenic agents in contributing to their production; indeed, I have ever insisted upon it. But I do maintain that faulty food is often at the bottom of their causation, and that the use of natural or well-balanced food from birth onward will greatly militate against their occurrence.

I cannot remember that by means other than faulty food such a disorder as colitis can be so readily produced, if at all; for the experimental production of amebic dysentery by the oral administration of *Endameba histolytica* cysts is not at all convincing. On the other hand, I have seen amebic dysentery arise in deficiently fed wild monkeys, while others that were well fed escaped the disease although subjected to the

same risks of infection. In this instance, malnutrition had enabled the specific organism to implant itself in the tissues of the bowel. If further evidence of the influence of faulty food in the production of these gastro-intestinal disorders be needed, it will be found in abundance in the medical history of the late war, during which these disorders were so often the consequence of faulty food. In this regard, our enemies have served unwittingly one useful purpose: they forced us to concentrate attention on the immediate and remote effects of food faults on the human body. But our ever present enemies in peace—poverty, prejudice, ignorance, habit—are no less responsible in this regard; they, too, beneath the

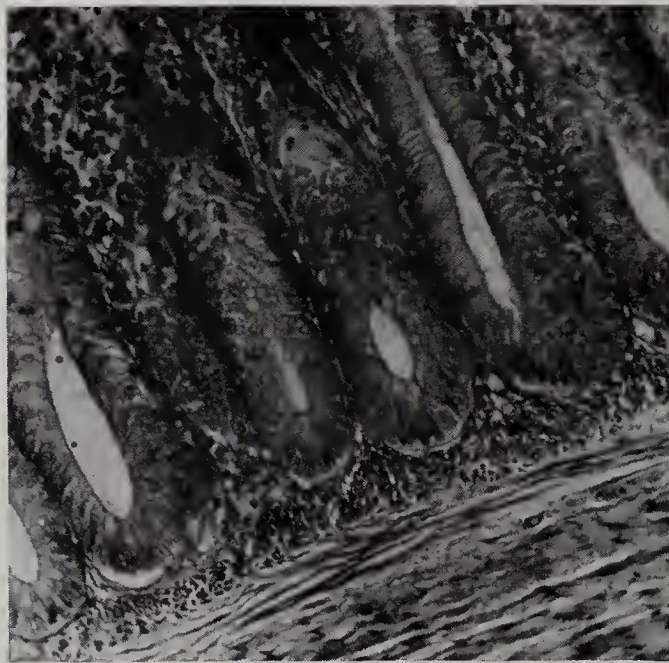


Fig. 5.—Section of upper part of intestine from healthy pigeon.

vaunted culture of our civilization, inflict upon numbers of our people an intolerable load of misery, which it is our duty to relieve.

I would, therefore, urge on your attention a consideration of the effects of faulty food in relation to such acute disorders as infantile diarrhea, jail dysentery and asylum dysentery, asking you, while remembering the bacteriologic aspects of these maladies, to look on them also from the point of view of faulty food. The bacteriologic path has led us far in our knowledge of preventable disease, but it will lead us farther still if we traverse at the same time the paths of malnutrition that so often run parallel with it. In relation to such chronic disorders as "mucous disease" in children, chronic gastro-intestinal dyspepsia, pellagra sine pellagra, colonic disease in adults, celiac disease, gastric and duodenal ulcer, and chronic intestinal stasis, the food factor in their production deserves the fullest consideration; for if the facts I have laid before you do not provide the whole explanation of their genesis, they are, I am convinced, intimately related to it. Time does not permit me to develop this theme further. Full reference has been made to it in my recently published book, "Studies in Deficiency Disease," where many



points which of necessity I have omitted from this lecture are set out.

#### EXTENSIVE USE OF FAULTY FOOD

Turning now to my last duty, that of presenting evidence that faulty food is largely used by many civilized people at the present day, I would ask you to consider first in this connection the increasing tendency in modern times to rear infants artificially—on boiled, pasteurized and dried milks, and on proprietary foods which are all of them vastly inferior to healthy mother's milk in substances essential to the well-being of the child—inferior not only in vitamins, but also in enzymes, thyroid derivatives and other essentials. When, as is sometimes the case, mother's milk is itself harmful to the child, is not this largely the result of her own disordered metabolism that in many cases results from improper feeding before, during and after pregnancy? For mother's milk may, like the milk of animals, be deficient in certain respects if her food be deficient. The milk of stall fed cows is not so rich either in vitamin A or in vitamin C as that of cows fed in green pastures.

Again, is not cow's milk—an important dietary constituent of young and old alike—gradually becoming a luxury reserved for the few? Vegetable margarins are replacing butter even among the richer classes. Fresh fruit, certainly in Great Britain, is a comparative rarity, even on the tables of the rich. Green vegetables are scanty, and such as there are are often cooked to the point of almost complete extraction of their vitamins and salts. White bread has largely replaced whole-meal bread, and it is notorious that bread forms a high proportion of the dietaries of persons of limited means. It is notable that, despite the food restrictions imposed upon the people of Belgium during the late war, the infant mortality and infantile diarrhea decreased greatly—a circumstance which was due to the organized propaganda encouraging mothers to nurse their infants, and to the establishment of national canteens which provided prospective mothers from the fifth month of pregnancy onward with eggs, meat, milk and vegetables. Again, fresh eggs are so expensive as to debar the masses from their use. Meat is at best but poor in vitamins, and its value in these essentials is not enhanced by freezing and thawing. Sugar is consumed in quantities unheard of a century ago, and sugar is devoid of vitamins which the cane juice originally contained. The use of stale foods involving the introduction of factors incidental to oxidation and putrefaction is the rule; that of fresh foods, the exception.

Can it, then, truly be said that the variety of natural foodstuffs consumed by Europeans protects them from any deficiency of vitamins? My own clinical experience justifies no such belief; rather does it point in the contrary direction. Nor does it appear to be the experience of the compilers of the Thirty-Eighth Report of the British Medical Research Council, who write:

"From a consideration of dietaries consumed by the poorer classes in the towns of Great Britain, one is led to suggest that no inconsiderable proportion of the population is existing on a food-supply more or less deficient in fat-soluble factor"—deficient, that is to say, in a vitamin one of whose cardinal functions is to maintain the natural resistance of the subject against infections. That similar considerations apply in this country also appears from the experience of Osborne, who asserts that a large part of the food eaten by civilized people has been deprived of vitamin B by "improvements" in manufacture, and of Hess, who emphasized that latent and subacute forms of scurvy due to insufficient intake of vitamin C are common disorders of infancy.

But the frequency with which deficient and ill-balanced foods are used is most apparent when the dietetic habits of persons in subnormal health are considered. It will surprise those who study them to find how many there are, of capricious appetite, who habitually make use of foods sometimes deficient in calories—for it is

not the food presented to the subject that counts, but the food eaten and assimilated—and often dangerously deficient in one or more vitamins, in protein of good biologic value, and disproportionately rich in starch or sugar or fats, or in all three. Infants fed on many of the proprietary foods in common use come within the category of the deficiently fed, unless deficiencies are made good. The food of young children is commonly low in vitamin content, and in suitable salts and protein, while it is frequently disproportionately rich in starch and sugar—a circumstance which enhances the danger of vitamin deficiency. It may, indeed, be accepted as an axiom that the vitamin value of a child's food is reduced in proportion to its excessive richness in carbohydrates.

But the ranks of the deficiently fed include not only infants and young children; they include also those whose food is composed mainly of white bread, margarin, tea, sugar and jam, with a minimum of meat, milk, eggs and fresh vegetables. Even among those whose diet is more perfectly balanced, the commoner articles of food, as they are prepared for the table, are so low in vitamin value that, unless they are enriched with a sufficiency of natural foods in the raw state, they are prone to cause ill health, and especially gastrointestinal ill health. Such is my experience in India, where this European patient "cannot digest vegetables or fruit," and never touches them, "as they carry infection," or that one "suffers so from indigestion" that he or she lives chiefly on custards and milk puddings; where milk is, of necessity, boiled and reboiled until, as a carrier of vitamins, it is almost useless; where meat is made tender by the simple device of boiling it first and roasting it afterward; where every third or fourth European child has mucous disease, the direct outcome of bad feeding. So it is that the forms of food which such as these so commonly adopt are those

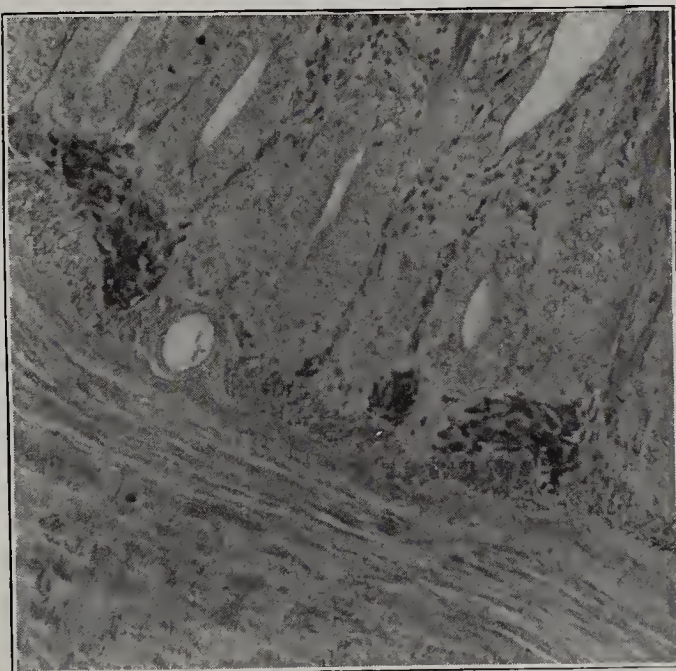


Fig. 6.—Section of upper part of intestine from pigeon dying in consequence of an autoclaved rice dietary. Compare with Figure 5. Note loss of staining characters; loss of lymphoid cells; congestion at bases of glands of Lieberkühn.



most calculated to promote the very disorder from which they seek relief.

Access to abundance of food does not necessarily protect from the effects of food deficiency, since a number of factors—prejudice, penury, ignorance, habit—often prevent the proper use and choice of health-giving foods. Who in the ranks of practicing physicians is not familiar, among the well-to-do classes, with the spoiled child of pale, pasty complexion and unhealthy appetite, of sluggish bowel, and often with mucous stools or enuresis, who, deprived of the wholesome ingredients of a well-balanced natural food, craves for sweetmeats, chocolates, pastries and other dainties as devoid of natural health-giving properties as their excessive use is common? Constantly one encounters the anxious mother of the “highly strung,” “nervous” child “of delicate digestion,” whose ignorance of essential principles of feeding is only excelled by her desire to do what is best for her offspring; who, guided by the child’s preferences, supplies the means to convert it into a static, constipated, unhealthy-

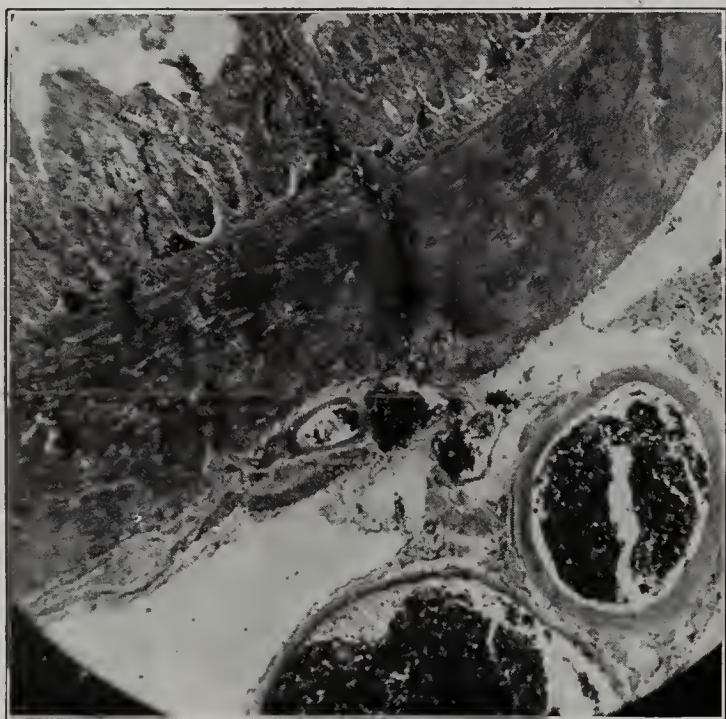


Fig. 7.—Section of upper part of intestine from pigeon dying in consequence of an autoclaved rice dietary;  $\times 65$ . Note hemorrhages between muscularis mucosae and base of crypts; atrophic glandular elements; eroded villus with blood track therefrom to distended subperitoneal vessel, constituting a direct passage for intestinal organisms to blood stream.

skinned adolescent, equipped with digestive and endocrine systems wholly unfitted to sustain the continued exercise of healthy function. Or, again, who is not familiar with the overworked anemic girl, static and with visceroptosis, acne or seborrhea, and oftentimes with vague psychoses, who ekes out a paltry wage for teaching, sewing or selling, satisfying the cravings of her tissues principally with white bread, margarin and tea? Or with the languid lady, devoid of healthful occupation, who, living in the midst of plenty, deprives herself, for some imaginary reason, of substances essential to her well-being? Or with the harassed mother of children, oppressed with the constant struggle to make ends meet, stinting herself that others may not want, exhausted by childbearing and suckling, worry, and too little of the right food? What wonder that such a woman is dyspeptic, and that “every bite” she eats “turns on her stomach.” Some there are, living in luxury, whom ignorance or fancy debars from choosing their food aright; others for whom poverty

combines with ignorance to place an impassable barrier in the way of discriminating choice. It is for us so to instruct ourselves that we may instruct such as these, and use our newer knowledge to the end that customs and prejudices may be broken and a more adequate dietary secured for those under our care. We may, in our desire to promote the health, vigor and fertility of our people, learn much from the practical farmer or stock-breeder whose experience has taught him that all these evidences of normal functional activity of the animal organism are dependent in the main on one great factor—perfect food supply.<sup>1</sup>

#### CONCLUSION

I trust that I have said enough to serve as an introduction to the study of this important subject, than which there is none more worthy of the consideration of those whose life is spent, or to be spent, in guarding the national health. It seems to me that in regard to it we have three obvious duties: the first, to instruct the masses as to what to eat and why they eat it; the second, to apply the results of our science to the production of natural foods in abundance and to their widespread and cheap distribution, rather than to the erection of institutions for the treatment of maladies due to their want; the third, and most important, ardently to pursue our investigations and the acquirement of knowledge. In no department of human endeavor are the words from the *agrapha* of Christ more pertinent than in their application to the study of the relations of food to health and disease:

Let not him who seeketh, cease from seeking until he hath found:

And when he hath found he shall wonder.

### GIGANTISM WITH HEMORRHAGIC OSTEOMYELITIS OF A METACARPAL BONE\*

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AND

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That general overgrowth, termed gigantism, is, in the main, brought about by a hyperactive secretory function of the anterior lobe of the pituitary body appears to be well established, such hyperfunction being due to hypertrophic or pathologic increase in the secretory structure of the anterior portion of the gland. Pathologic and anatomic evidence appears to lend general support to this point of view. One should recognize, however, that the disease, in its general deviation from normal processes, is perhaps the result of pluriglandular disturbances, with still other factors participating that are not yet understood, rather than the result of a pathologic condition of the hypophysis alone.

The address recently published by Cushing<sup>1</sup> on “Disorders of the Pituitary Gland” should have a sobering influence on those whose enthusiasm prompts

1. McCarrison, Robert: *Studies in Deficiency Disease*, Oxford Medical Publications, 1921.

\* From the Medical Department of Gouverneur Hospital.

1. Cushing, Harvey: *Disorders of the Pituitary Gland*, J. A. M. A. 76: 1721 (June 18) 1921.



them to assume that so many of the ills that flesh is heir to are due in whole, or in part, to a disturbance or a pathologic function of the endocrinal glandular complex, to the disregard of other factors that may be present.

In his studies on gigantism and acromegaly, Cushing<sup>2</sup> says:

The disease in short is the expression of a functional instability of the pars anterior, doubtless brought about by some underlying biochemical disturbance which leads to the elaboration of a perverted or exaggerated secretion containing a hormone that accelerates skeletal growth (of the long bones if epiphyseal union is incomplete) of the acral parts if epiphyseal ossification has taken place.

We report herewith an endocrinal case of so-called preadolescent hyperpituitarism, presenting all the stigmas of gigantism. Of great additional interest is the fact that the patient presents a localized lesion involving one of the metacarpal bones. The process in this bone gives all the clinical and roentgenographic criteria of a hemorrhagic osteomyelitis and may be regarded as evidence of reaction to a destructive or injurious process that has taken place in spongy bone. This reaction gives all the known criteria we possess of an attempt at repair, the lesion itself being the outcome of such incomplete or unsuccessful reparative effort.

In no reported case of gigantism are we able to find that a similar observation has been made. The question as to whether the localized bone lesion is a distinct process, having no connection with the patient's general skeletal changes, or whether it is a local expression of the general disturbance, and not merely coincidental thereto, for the present, must remain unanswered.

Hamann<sup>3</sup> has made some observations regarding bone changes occurring in hypopituitary disease. He reports a case of "cytoplasmic osteitis" affecting the tibiae of both legs, which yielded to pituitary medication. He concludes that "osteitis osteoplastica," leontiasis ossea, and Paget's disease are due to a hypopituitary condition. He further assumes that hypopituitary cases all show a regressive condition in bony growth which may lead to cystic bone formation.

According to Horrax,<sup>4</sup> the course of the disease termed gigantism, which is apparently brought about in large degree by hyperfunction of the anterior lobe of the pituitary body, tends eventually to a hypofunction of the gland, such change expressing itself in weakness, hypotrichosis, impotence, adiposity and low body temperature. In our patient, epiphyseal union has not taken place; he is still increasing in stature. Hypotrichosis and adiposity are also absent. If there is any relation between the patient's general condition and the localized bone lesion exhibited in the hand, it seems fair to assume, in such event, the possibility that a new and early sign of perverted pituitary change has occurred in a case presenting the stigmas of hyperfunction of

the anterior portion of the gland. While no argument really connecting the localized lesion observed in our case with hypofunction, hyperfunction or dysfunction of the pituitary body is advanced or may be advanced, it seems suggestive in view of the findings of other writers.

Gigantism is, of course, a condition of perverted function. We use the term perverted function advisedly, since we believe that the condition known as hypo-hyperpituitarism or dyspituitarism does not explain all the aberrant conditions observed in a disturbed pituitary complex.

Just as in other structures of the body, distinct secre-



Fig. 1.—Patient, showing widened space between malars and spread nostrils; absence of hair on chest and abdomen; large genitalia; disproportion between size of hands and feet; prominence of ears.

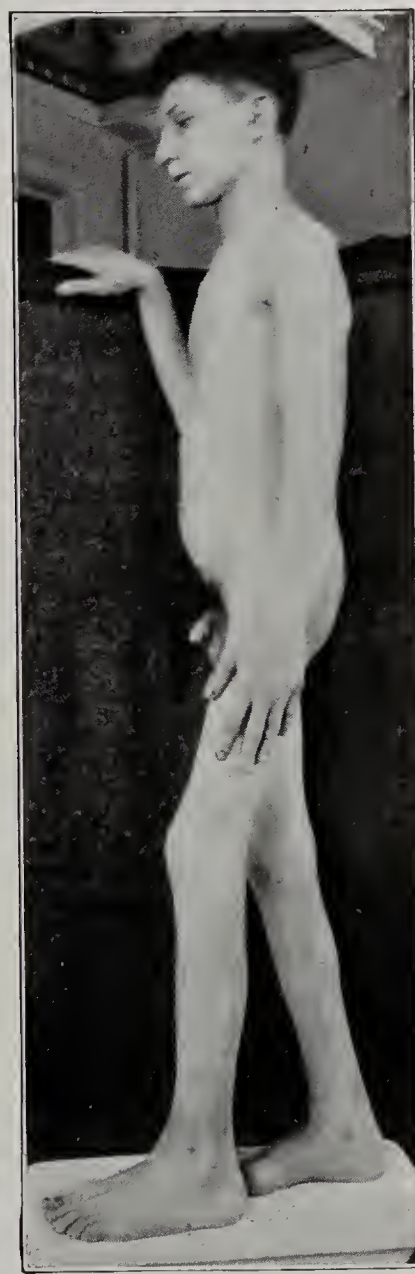


Fig. 2.—Round back and backward displacement of os calcis.

tory chemical reactionary change may be taking place without any apparent anatomic alteration in the glandular elements. We feel sure then that these so-called chemical reactions may disclose themselves in a variety of syndromes which cannot be classified under the general terms of hypo-hyperpituitarism or even dyspituitarism, although in the present state of our knowledge, we are unable to give demonstrable anatomic proof.

#### REPORT OF CASE

*History.*—J. B., a boy, aged 16, born in Austria, the third of three children, and a silversmith, was admitted to Gouverneur Hospital, Jan. 28, 1921. His father was 60 years of age and more than 6 feet (182.8 cm.) tall. His

2. Cushing, Harvey: *The Pituitary Body and Its Disorders*, Philadelphia, J. B. Lippincott Company, 1912.

3. Hamann, Otto: *Zur Aetiologie der Osteitis cytoplasmica*, Med. Klin. 16: 63-64, 1920.

4. Horrax, G.: *Oxford Medicine*, London, Oxford University Press, 3, 1921.



features were extremely coarse, and his lower jaw was rather prominent. He stated that the middle teeth of the upper and lower jaws were separated. He was fairly strong and active, working every day as a furrier. The Wassermann reaction was negative. The mother was short and stout. She said that she was in good health. No enlargement of the thyroid gland was felt. The Wassermann reaction was negative. One sister, aged 26, 5 feet, 2 inches (158 cm.) tall, and an alleged cardiac patient, was married. The older brother, aged 24, was 6 feet, 2 inches (188 cm.) tall. His upper and lower teeth were crowded. He shaved only once during the week. His sexual organs were apparently normal. He stated that he had never had sexual coitus, but he believed that he was normal sexually. He had no thought of marriage, although he made good wages as a silversmith.

He came to America from Austria at the age of 8. Previous to his arrival, he had had double pneumonia and scarlatina. He stated that when he was about 12 years old he could not play with the other boys because he would tire easily and would become dyspneic and dizzy.

On his arrival, at the age of 8, he immediately started school and continued till he was 15. He was always the tallest boy in the class, and later became so overgrown that he was the target for the gibes of his classmates. Although he was an apt pupil, he became oversensitive about his size and left school when he reached Class 7 B.

During the last few years, the patient had been in comparatively good health. January 20, however, the day before his admission to the hospital, he became acutely ill with a cough, pain in the chest and epigastrium, dyspnea and fever. He was sent to the hospital with a diagnosis of pneumonia. This diagnosis was confirmed, but the condition was complicated by pluerisy and pericarditis with effusion. As his stay in the hospital was stormy throughout and was associated with numerous sequelae, we will dwell only on the endocrine phase, as seen from his pictures.

*Examination.*—There was no beard on the face and no hair on the chest or axillae. There was an effeminate distribution of hair on the pubes. The fingers were long and broad. He was more than 6 feet (183 cm.) tall and was still growing.



Fig. 3.—Enclosed sella turcica, enlarged skull and separated teeth.

Roentgenograms of the bones showed an old fracture at about the middle of the right fibula. A roentgenogram of the sella turcica showed nothing abnormal; that of the fifth metacarpal bone showed hemorrhagic osteomyelitis; that of the long bones showed a nonepiphyseal union. The extremities measured 92 cm. from the anterior superior spine to the internal malleolus. The tibia was 40 cm., the foot 28 cm. long. He wore a size 11 shoe. There was a posterior projection of the os calcis. He had a high soprano voice. The middle incisors were widely separated. Examination of the

eyes, reported by Dr. Kearny, was negative, with no disturbances of the visual field.

Occasionally, there was a slight glycosuria. The blood sugar estimation on the fasting stomach was 0.148 per cent.

#### COMMENT

From these findings, it is fair to assume that this patient was suffering from a distinct change in the bony



Fig. 4.—Hemorrhagic osteomyelitic lesion of fifth metacarpal bone and nonepiphyseal union of all bone.

structure of his body. These changes generally indicate a condition of gigantism. Although absolute proof of the direct association of hemorrhagic osteomyelitis and a disturbance of the anterior lobe of the pituitary body is lacking, there is in this case at least a greater degree of probability of such an association than a mere coincidence.

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## RADIUM TECHNIC IN TREATING CANCER OF THE ESOPHAGUS

### PRELIMINARY REPORT

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Except for the aid of the fluoroscope, we are working in the dark when treating cancer of the esophagus. The fluoroscope will help us, if a stricture exists, by showing its location; but it can tell us nothing as to the thickness of the walls of the canal, and very little as to the extent of the lesion up and down. When the bismuth is swallowed, it will, of course, show as a dark bulging above the stenosis. The thin dark line below this point may continue to the cardiac end of the esophagus. But we cannot say that the entire area below the bulging is diseased, because of this seeming narrowing. From the few necropsies we have had in this class of cases, I am safe in assuming that the diseased area is from 1 to 2 inches in extent. It is quite probable that future postmortems will show cases that extend farther than 2 inches. The necropsies so far conducted will sometimes show one portion of the canal fairly thick, in which section, maximum dosage can be employed without fear of penetration, while contiguous to this thickened area, we may find the wall



to be very thin: so thin that the dose applied to the thick portion with impunity would produce dire results.

Therefore, it can readily be seen that the task set for radium in malignancy of the esophagus is, indeed, difficult. If we but knew the thickness of the walls, and the area of involvement, as in the case of carcinoma of the lip and cervix uteri, it would be an easy matter to decide on the dosage and length of exposure.

If our fear of penetrating the esophageal wall predominates, we are inclined to use a small dose of radium, which, while it will eliminate the penetrating factor, may do more harm than good in the end-results, because of the fact that while this small dose may favorably affect the diseased tissue directly contiguous to the radium applicator, the rays, because of the filtration in passing through tissue, may be so weak when they reach the outlying portion of the growth that they will act, not as a lethal agent, but as a distinct stimulant. Therefore, it can be seen that to produce the desired killing effect on the cancer cells, the dose of radium used must be one sufficiently large to insure a killing action, not only on cancer cells immediately surrounding the radium carrier, but also in the more distant portions of the growth.

Mills and Kimbrough<sup>1</sup> speak clearly of the difficulties encountered in properly applying radium to the canal of the esophagus. But even though we have as our aids only the fluoroscope, the dilators and the esophagoscope, and radium as the anticancer agent, we are accomplishing good results in a fair percentage of cases, so that now we need not consider carcinoma of the esophagus as necessarily fatal. It goes without saying that in cases that have metastasized, ultimate cure is not to be looked for. But by proper dilatation, and the judicious application of radium, these patients need not submit to a gastrectomy, as the canal can be kept open for the passage of food.

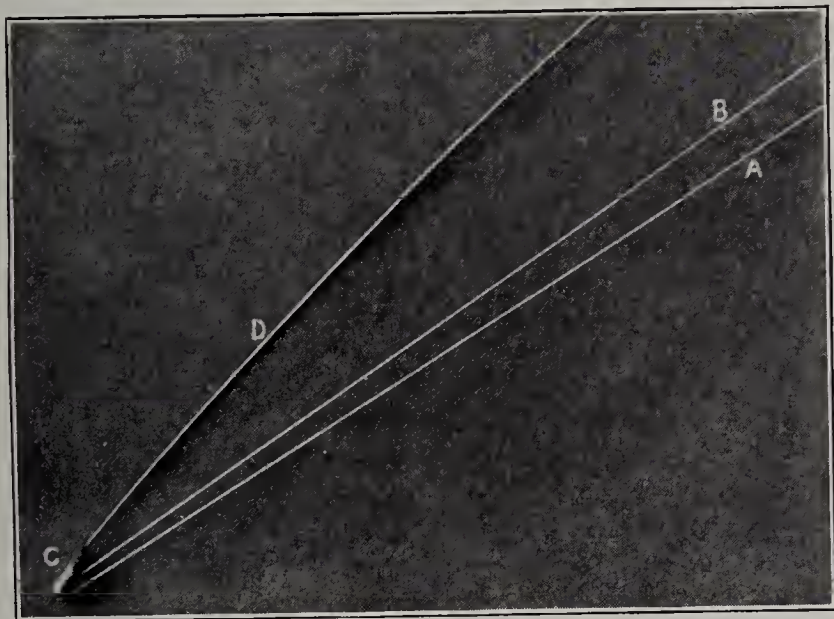


Fig. 1.—End of the piano wire (D) which is about 3 feet (900 mm.) long. At the end is the cone shaped tip (C), with a hole extending from the end of the shoulder. The silk thread has been swallowed; A is that portion coming out of the mouth. It has been threaded through the hole in C, and the end of the thread is held taut, while the piano wire is slid down and gently worked through the stricture. The wire should be passed the entire length of the esophagus and into the stomach.

Mills and Kimbrough<sup>1</sup> mention five requisites for the proper emplacement of radium in the esophagus:

(1) A knowledge of the location and physical peculiarities of the tumor and the resulting stricture, especially as to

location, extent and direction of stenosis; (2) a means of effective and nontraumatizing canalization of the cancerous stricture; (3) a mechanical means of maintaining the radium in direct contact with the tumor; (4) a ready means of frequent observation as to the position of the radium during the period of treatment, and (5) a careful selection as to dose, filtration and frequency of treatment, guided by such experience as we have and the individual peculiarities of the case.

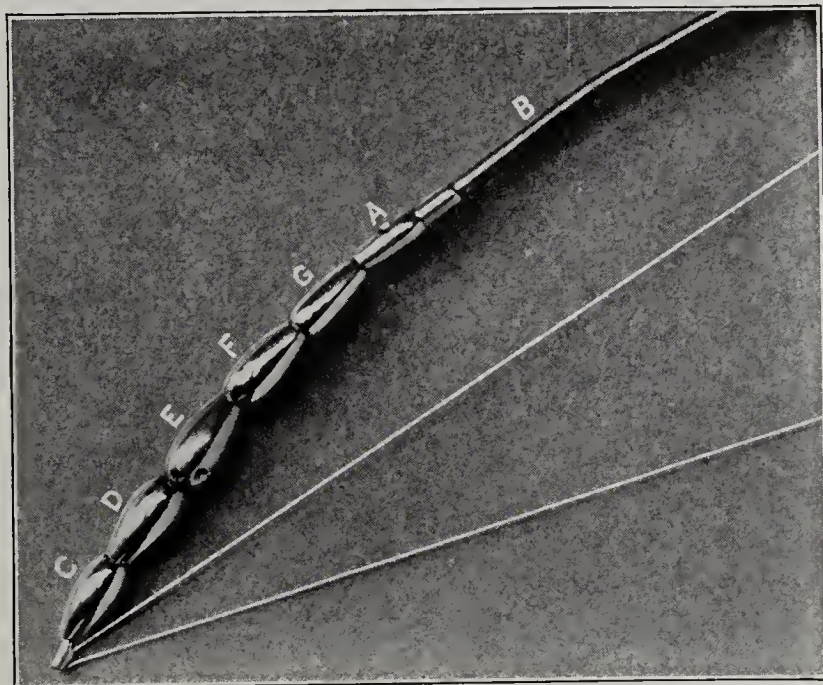


Fig. 2.—Several olivary bodies that have been passed over the piano wire: A is the smallest body and was passed down first, being propelled by the spiral wire pusher (B), which was then pulled up and off from the piano wire, and C and D sent down over the piano wire, point down, being gently pushed through the stricture by the spiral wire (B). B is then pulled up and off, and E, F and G sent down, bases first. After these have all passed the stricture, the piano wire is gently pulled up and the entire chain of olivary bodies is removed.

These five requisites will be considered according to my findings in a series of eighteen cases.

1. There are three methods commonly employed to determine the location of malignancy of the esophagus: (a) by the fluoroscope after the ingestion of bismuth or barium; (b) by sounding with olivary bodies, and (c) by esophagoscopy. In some cases, it is necessary to use all three methods. Except for the purpose of securing a section for microscopic examination, I do not favor the esophagoscope, as it is trying to the patient and there is danger of causing trauma. It is my custom to request a roentgenogram after bismuth, that the commencement of the stricture may be definitely located. This picture is used for reference during the subsequent treatment of the case. The patient is placed behind the fluoroscope, and an olivary body on the end of a spiral wire is introduced in the canal. When the olivary body comes in contact with the stricture, the position of the spiral wire at the point where it passes the incisors is marked with a piece of adhesive, and the wire is removed and measured from this point to the tip of the olivary body. This method gives a definite distance to work on, when the radium carrier is sent down. It must be remembered, however, that the diseased area probably extends some centimeters below the actual stricture, and allowance must be made for this in placing the radium. Unfortunately, except for the exact position of the stricture, we are in the dark as to the extent of the diseased area. Therefore, in our desire to include all diseased tissue in our irradiations, we no doubt attack healthy tissue in some of our treatments. But even if we do, I am inclined to think that this is justifiable because of the fact that, if the healthy area is irradiated, it will repair itself after the

1. Mills, R. W., and Kimbrough, J. S.: Radium Treatment of Cancer of the Esophagus Under Roentgen-Ray Control, J. A. M. A. 74: 1570-1576 (June 5) 1920.



period of engorgement and inflammation has passed, leaving no untoward sequelae.

2. If the stenosis is not extreme and will admit of a fair sized olivary body, very little dilatation of the stricture is required in preparation for the introduction of the radium carrier. This open canal, however, does not exist in the majority of patients seeking treatment, as the patient usually waits until swallowing is painful in the extreme, and the fluoroscope will show only a small trickle of bismuth through the stricture. In these

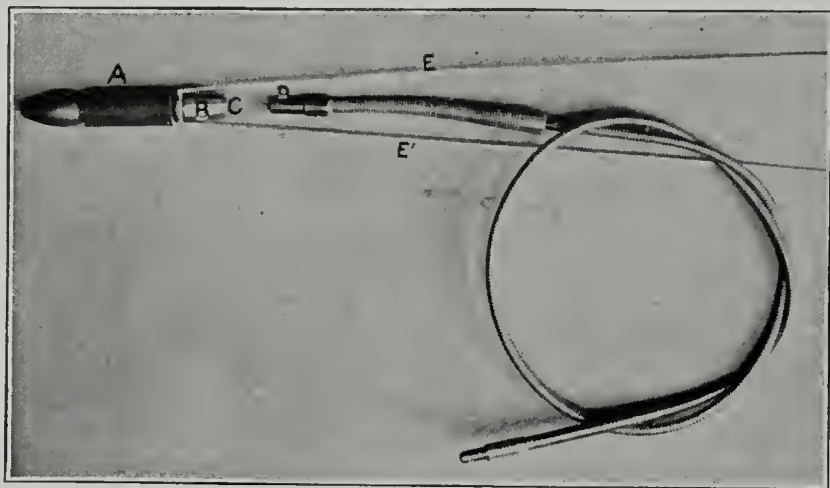


Fig. 3.—A, radium carrier. The radium is in the barrel of this tube; B is a screw cap with a depression in the top (C) to accept loosely the tip of the spiral wire (D); E and E' are double strings of heavy linen thread.

cases of extreme stenosis, I have had more success with a device popularized by Sippy, which will enter a stricture through which water will trickle. The device is made of piano wire about 3 feet long. On the end of this wire is soldered a small cone one-fourth inch long and one-eighth inch in diameter. From the tip end of this cone to the shoulder is a hole for the passage of a silk thread. A spiral wire tube fits over the piano wire, but cannot pass over the end because of the cone. On one end of this spiral wire tube is a screw that will fit into a series of olivary bodies. The device is used thus:

The patient swallows a silk thread (silk twist, letter D). This is accomplished by incorporating about a foot of the thread in a 5 grain capsule or a piece of soft candy. Twenty-four hours is usually sufficient time for the thread to pass through the stricture into the stomach and become anchored in the intestine. The mouth end of the thread is then threaded through the hole in the cone at the end of the piano wire, and drawn taut. The piano wire is then passed gently down the string and worked through the stricture. As a rule, this is easily accomplished. At this stage, the smallest olivary body is screwed onto the spiral wire tube and passed over the piano wire, down through the stricture. When this is done, the next larger olivary body is threaded over the piano wire, until three or four have been threaded on the wire, each one a size larger than the one preceding. The small ends of the olivary bodies are pointed down. At this time, three or four olivary bodies, beginning with one about the size of the last one threaded on the wire, are slid down the wire with their bases pointed down. The second series diminish in size, thereby making the greatest circumference in the middle of the complete set of olivary bodies. When these have all been passed through the stricture, the piano wire is removed, together with the olivary bodies. This dilator is very satisfactory as there is no danger of trauma, if it is manipulated prop-

erly. Even after the dilatation, patients will say they feel much better; but, of course, this is only temporary.

3. The maintaining of the radium in contact with the tumor is accomplished in various ways by different operators. I prefer the apparatus shown in the illustration. By its use, the patient is not troubled with the applicator and is barely conscious of its presence in the canal. After the applicator has been in position the required number of hours, it is easily removed by means of the attached strings. When the lesion is at the lower end of the esophagus, care must be taken that the carrier does not work down into the stomach. If this occurs, it can, of course, be removed, but only with considerable force, and injury of the walls may result. The objection to wires as the means of retaining the radium carrier in position is that much discomfort is caused the patient, and the patient cannot retain the radium as long as is desired. By using the radium carrier I have described, it is necessary only to verify the position of the carrier once with the fluoroscope.

4. After the radium carrier is in position, a roentgenogram is taken which will show clearly the position of the carrier. Six hours after the carrier has been placed, the patient should be placed behind the fluoroscope and given a small amount of fluid bismuth. Observations are then taken to determine if the carrier is still in the right position.

5. This requisite deals with dosage, screening, etc. My dose in treating cancer of the esophagus is based on empiricism. Without doubt, our dose would be different in many cases if the diseased esophagus was laid flat before us, for we would then know the thickness of the diseased area. We are compelled to select a dose that we have found will do certain things to tissue that has been under our sight. Therefore, I have

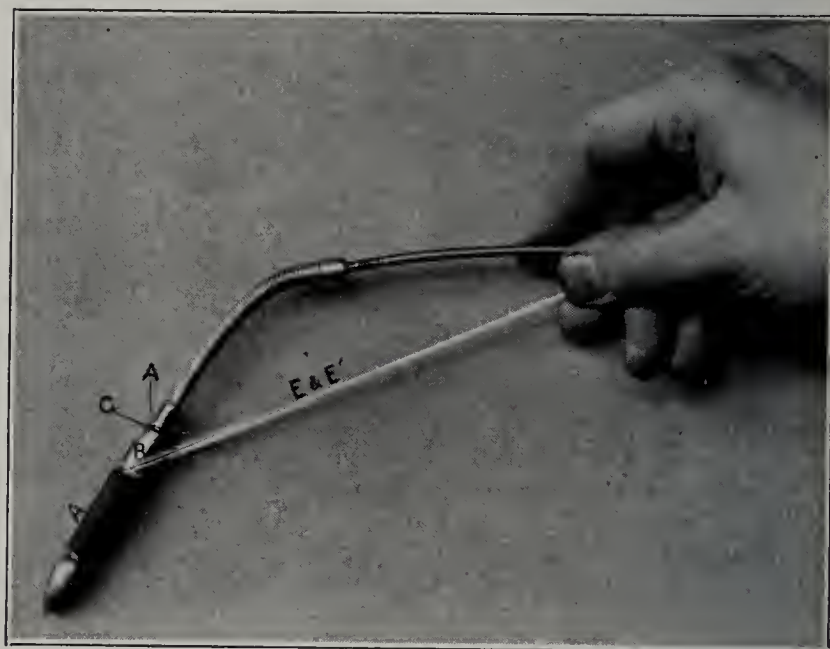


Fig. 4.—D inserted in hole C and held in position by traction on strings E and E'. In this position it is held while being passed over the base of the tongue and the commencement of the esophagus. When the fluoroscope shows that the carrier is in the stricture, the spiral wire (D) is pulled out, leaving the carrier in the stricture, and held in that position for any number of hours by the strings which are fastened to the cheek.

selected 50 mg. as the dose, and the time of exposure to each position from eight to ten hours. If we wish to irradiate 3 inches of the canal, we should start at the lower position, and at the end of eight hours we should pull the string up 1 inch, and at the end of another eight hours, we should pull it up another inch and so on. I always hope that I have gone deep enough into the surrounding diseased tissue, but not too deep.



The radium carrier should be made of brass, gold plated, with a wall thickness of 1 mm. Rubber tubing of 1 mm. wall thickness should cover the barrel of the carrier. The object of using the rubber is to absorb the irritating secondary beta rays that are produced when the gamma rays emerge from the metal.

While the results of radium treatment of cancer of the esophagus are not all that could be wished for, yet they are of such a nature that we are hopeful for better things as time goes on.

In a series of fifteen cases, I can point to but four as seeming cures. I can say, however, that all patients were benefited by the first series of treatments. The dysphagia, which exists in almost all cases, is relieved



Fig. 5.—Radium carrier in the stricture. This cannot slip down, because of the heavy linen cord that is attached to the cheek.

very soon after the first treatments. This freedom from pain will continue for some time; but in the majority of cases it will return, and the second treatments will not have the same salubrious effect that the first did.

Still, a sufficient number to demand our intervention with radium are relieved by subsequent treatments. Of the series mentioned before, excluding the four that I believe are cured, five patients went one year without recurrence. One of the five had no recurrence for a year and a half. These five patients are still under treatment, and perhaps my percentage may be larger than I have stated here.

Chevalier Jackson<sup>2</sup> believes that there is a future for radium in malignancy of the esophagus. R. Walter Mills and John S. Kimbrough<sup>1</sup> conclude that "the treatment of cancer of the esophagus by radium is hopeful. The most encouraging feature in the small

series of cases is the relief of dysphagia." These observers report a series of eleven cases treated with radium. "No case was treated that might be considered a cure, though one patient is alive and in good shape eighteen months after the first treatment, without evidence of metastasis. There was but one case in which there was evidence of metastases, and in that instance there was involvement of the stomach. Five patients have died, one possibly of perforation resulting from treatment. The work, instead of being gruesome, is made gratifying by the pitiful appreciation of the patient.

#### SECOND TREATMENT

It is my custom to repeat the treatment in from three to four weeks after the first. In favorable cases, a roentgenogram taken just before the second treatment will show a larger lumen, and less irregular outlines. In this type of case, weight has been gained and the patients have a sense of general well-being. They are instructed to return for examination at the slightest sign of recurrence.

#### CONCLUSIONS

In the use of radium in the treatment of cancer of the esophagus, we have advanced more than a step. In a disease that was always fatal, we save a percentage of patients.

If radium did no more than relieve the dysphagia, it would be of inestimable value.

The majority of patients are benefited, and life is prolonged.

By dilatation and the proper application of radium, gastrostomy is avoided.

That a more perfect system of dosage is required is admitted.

31 North State Street.

## MONGOLIAN IDIOCY IN ONE OF TWINS

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Mongolian idiocy in one of twins occurs so rarely that a report of such a case, with photographs of both twins at the age of 6½ months, seems of sufficient interest to merit publication.

#### REPORT OF CASE

Ettori L., a boy, aged 6½ months, was admitted to the Babies' Hospital, Aug. 11, 1921. The father and mother, who had been married nine years, were born in Italy; both were healthy; the former was 42 years of age and the latter 36 at the time of the birth of the twins. The first three pregnancies had resulted in healthy children, now 7½, 4½ and 3 years of age, respectively. These three children and one of the twins are of normal mental development. The fourth pregnancy, which was uneventful, resulted in twins. The mother stated that the infants were not weighed at birth, but that one infant (Ettori L.), who was born first, was but half the size of his twin sister. She further noted that "the whole top of his head was soft, down to the middle of his forehead." The infant had been nursed up to the time of admission to the hospital. He had never been acutely ill but did not thrive in the same manner as the twin sister, who gained regularly in weight. He had never been able to hold up his head, although the twin sister developed normally. Four days prior to admission, the stools became frequent and watery, and at the time of admission the child was drowsy and extremely prostrated.

2. Chevalier Jackson (discussion).



On admission, the child was poorly developed and wasted, with soft flabby musculature. The general appearance was that of a mongolian idiot. The weight was 3,100 gm. (6 pounds, 13 ounces).

The measurements were: circumference of head, 15 inches (38 cm.); chest, 12½ inches (31.7 cm.); abdomen, 11½ inches (29.2 cm.); length of body, 21 inches (53.3 cm.). The skin was dry, loose and inelastic, showing evidence of dehydration. The head was rather flat. The anterior fontanel measured 1⅞ inches (4.7 cm.) anteroposteriorly by 1¼ (3.1 cm.)



Fig. 1.—Mongolian idiot and normal twin sister at 6½ months

laterally. The posterior fontanel was open, roughly circular, and measured ¾ inch (1.9 cm.). The coronal and lambdoidal sutures were open. The parietal eminences were prominent. The eyes were distinctly mongolian in type, almond shaped and quite obliquely placed. The measurement between the inner angles of the eyes was 1 inch (2.5 cm.). The nose was broad and flat, the mouth wide with the tongue frequently protruding. The chest, lungs and heart were normal. The abdomen was normal except for a small umbilical hernia. The penis and scrotum were small. The testicles were undescended but could be felt in the inguinal canal. The reflexes were normal. The hands were broad and the fingers rather short. There was marked hypermobility of the hip and shoulder joints.

During the child's period of observation in the hospital a fever was constantly present, ranging from 100 to 102.5 F. There were frequent watery green stools and progressive loss of weight. The child refused its food. The routine procedures for treating dehydration were instituted, but the child died eight days after admission to the hospital, apparently of acute enteritis. There was no necropsy. The accompanying illustrations are reproductions of photographs taken four days after admission. At that time the patient's weight was 2,650 gm. (5 pounds, 13 ounces) and that of the normal twin was 5,445 gm. (12 pounds).

#### COMMENT

Since the original description of mongolian idiocy by J. Langdon Down,<sup>1</sup> in 1866, followed by the more elaborate treatise of Kassowitz<sup>2</sup> in 1902, there has been but small addition to our knowledge of this condition. No light has been thrown on the etiology. Attempts have been made from time to time to assign syphilis as a causal factor, but reports of positive Wassermann reactions in a certain number of mongolian idiots have never influenced the critical clinician. The extremes of age in either parent have also been considered an

etiologic factor, but Goddard,<sup>3</sup> in an analysis of more than 290 cases, finds that "fathers may beget mongolians at any age from 20 to 63." He did, however, note that the number of children born when the mother was 40 years of age was much higher than at any other age. In a group of thirty cases reviewed recently by von Hofe<sup>4</sup> from the Babies' Hospital dispensary, the mother was less than 35 years of age in 47 per cent. I have had three cases in my private practice in which both parents were under 35. The belief that the age of either parent is a causal factor seems to rest on tradition and impression rather than fact.

Goddard rather inclines to the belief shared by many others that the cause of mongolism is to be sought in the condition of the mother during pregnancy. If the condition of the mother during pregnancy were related to the etiology, one should always expect the identical pathologic condition in both twins. Cases of mongolism in both twins have been reported by Hjorth.<sup>5</sup> One would not be surprised at such a result, in a twin pregnancy, if causes in the mother during pregnancy operated to produce the condition. The question of heredity can be excluded in this discussion, as mongolian idiots are not known to have children.<sup>6</sup> The question of etiology in this case might be explained by the following considerations: Two ova were fertilized by two spermatozoa. One of the ova was probably fertilized by a normal spermatozoon which resulted in the normal female infant. The other ovum may have been abnormal and have been fertilized by a normal spermatozoon or have been normal and have been fertilized by abnormal spermatozoa. This fertilization resulted in the mongolian idiot.

A partial review of the literature reveals only three other cases similar to this: one reported by Neumann,<sup>7</sup>



Fig. 2.—Mongolian idiot and normal twin sister at 6½ months.

another by Swanberg and Haynes,<sup>8</sup> and the third quoted by them and reported by Shuttleworth.<sup>9</sup> Cases

3. Goddard, H. H.: *Feeble Mindedness*, New York, the Macmillan Company, 1914.

4. Von Hofe, F. H.: *A Report of One Hundred and Twenty-Four Cases of Mongolian Idiocy*, to be published.

5. Hjorth, Bodil, quoted by Swanberg and Haynes: *Nyt Tidsskrift for Abnormvaesenent*, No. 9, 1916.

6. Fraser and Mitchell, quoted by W. Scholz: *Kretinismus und Mongolismus*, *Ergebn. d. inn. Med. u. Kinderh.* 3: 540, 1909.

7. Neumann, H.: *Ueber die Mongoloiden Typhus der Idiotie*, Berlin, klin. Wehnschr. 30: 210, 1899.

8. Swanberg, Harold, and Haynes, H. A.: *A Case of Mongolism in One of Twins*, *Arch. of Neurol. & Psychiat.* 2: 717 (June) 1919.

9. Shuttleworth, G. E., quoted by Swanberg and Haynes: *Brit. M. J.* 2: 661 (Sept. 11) 1909.

1. Down, J. L.: *Observations on an Ethnic Classification of Idiots*, London Hosp. Rec. 3, 1866.

2. Kassowitz, M.: *Infantiles Myxoedem, Mongolismus and Mikromelie*, Vienna, 1902.



of more than one mongolian in the same family have been reported, the most recent being that of Pardee,<sup>10</sup> who suggests that endocrine disturbance is the probable etiologic factor. If there was an endocrine disturbance in the mother in the case described herein, which might manifest itself in a mongolian offspring, one would assume that the same cause would operate in disturbing the growth of the two twins. The interest of endocrinologists has been attracted to mongolism since Unger<sup>11</sup> reported his famous case, in 1912, in which myxedema and mongolism were present in the same infant.

17 East Seventy-First Street.

## TRANSFUSION REACTIONS AND CITRATION WITHIN THE NEEDLE\*

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Transfusion reactions may be grouped as those occurring during administration and those occurring after the administration, but within a three hour period. The former group is composed, first, of those in which the heart is overloaded and dilates with the resultant coughing, dyspnea and rapid irregular pulse, any of which symptoms are indications for slowing or stopping the administration; and second by those receiving incompatible blood or the hemolytic reaction. These patients show sudden suffusion of the face, dyspnea, pain in the chest, back and limbs, cyanosis, rapid irregular pulse, and twitching of the muscles. These reactions occur usually before the first 75 c.c. of blood has been administered, and for this reason the injection of the first 100 c.c. should consume at least five minutes and, if any of the symptoms noted occur, the administration should be stopped. Only a few patients receiving a full dose of incompatible blood have lived through the ordeal. Bernheim<sup>1</sup> reports a patient saved by the immediate infusion of physiologic sodium chlorid solution. Those reactions occurring after the operation and within three hours are, in our opinion, as truly anaphylactic in nature as the hemolytic reactions, and are manifest by the temperature of from 100 to 105 F. lasting from several hours to several days, chills, nausea, vomiting, urticaria and malaise. It is my purpose here to consider the nonhemolytic reactions and a possible means of reducing their number and severity.

Satterlee and Hooker,<sup>2</sup> in discussing transfusion reactions with compatible blood, conclude that "importance is attached to the belief that many of the febrile and toxic reactions, not to be explained by hemolysis or agglutination, are due to the transfusion of blood which is undergoing incipient coagulative changes or which contains potential coagulative factors such as thromboplastin and thrombin." They reach this conclusion after discussing the physical influences; as whipping, stirring, agitation and contact with foreign material, as metal, rubber tubing, and glassware, to

which blood is exposed during the ordinary transfusion with the resultant abrasion and disintegration of the platelets and setting free of thromboplastic elements.

Drinker and Brittingham,<sup>3</sup> after extensive practical experience and experimental studies, lay most emphasis on "changes in the platelets, a part of the process of coagulation" as a cause of transfusion reactions.

P. W. and M. C. Clough,<sup>4</sup> in a recent review, advance a similar explanation: "liberation of toxic substances probably from the platelets, in the incipient stages of blood coagulation."

In our own series of 100 transfusions the theory of incipient coagulative changes seems the most plausible explanation. In those instances in which difficulty was experienced in obtaining the blood from the donor, especially when the needle repeatedly clotted, the patient almost invariably experienced chills and a temperature of from 102 to 105 F. In several instances, threads from gauze inadvertently got into the recep-



Fig. 1.—Apparatus ready for collection of blood.

ticle, and clots were formed about them. These patients all had moderate reactions. On one occasion the flow of citrate was completely shut off until 200 c.c. of blood was drawn from the donor; then an excess 0.3 per cent. of citrate was allowed to flow in. The blood was perfectly fluid, and injection into the patient, who was almost exsanguinated from a bleeding ulcer, was begun. When about 250 c.c. of the 500 c.c. had been injected, the remainder clotted *en masse*. Within twenty minutes the patient was seized by a hard rigor, lasting one-half hour, with pulse of 155 and respiration of 32. This was by far the most severe reaction in our last forty cases, and was doubtless due to coagulative changes that were going on while the blood was still fluid enough to pass through a small needle.

Hemolysis due to the citrate seems to us worthy of little consideration in the light of our work with

10. Pardee, I. H.: Two Cases of Mongolian Idiocy in the Same Family, J. A. M. A. **74**: 94 (Jan. 10) 1920.

11. Unger, L.: Myxodem und Mongolismus eines Neugeborenen, Mitt. d. Gesellsch. f. inn. Med. u. Kinderh. **11**: 58-65, 1912.

\* From the Temple Sanitarium Clinic.

1. Bernheim, B. M.: Blood Transfusions, Haemorrhage and the Anaemias, Philadelphia, J. B. Lippincott Company, 1917.

2. Satterlee, H. S., and Hooker, R. S.: Transfusion of Blood with Special Reference to the Use of Anticoagulants, J. A. M. A. **66**: 618-624 (Feb. 26) 1916.

3. Drinker, C. K., and Brittingham, H. H.: The Cause of the Reactions Following the Transfusion of Citrated Blood, Arch. Int. Med. **23**: 133-149 (Feb.) 1919.

4. Clough, P. W., and Clough, M. C.: A Study of the Reactions Following the Transfusion of Blood, South. M. J. **14**: 104-109 (Feb.) 1921.



citrated plasma in the treatment of influenzal pneumonia.<sup>5</sup> Blood was drawn and citrated to 0.25 per cent. from thirty-eight convalescents. This citrated blood was allowed to stand in the icebox from twenty-four to seventy-two hours; then the plasma was pipetted off. In not a single instance was the plasma tinged with hemoglobin. In 75 per cent. of the recipients there were distinct reactions manifested by chills and rise of temperature. In seven pneumonia patients receiving this

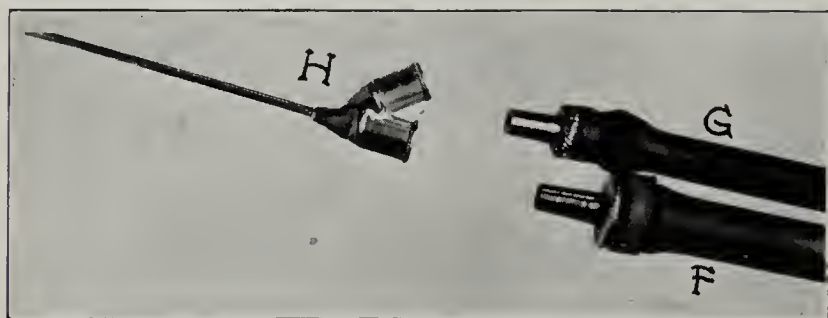


Fig. 2.—Special transfusion needle and connection.

citrated plasma there occurred a reaction which we have never seen in the 100 transfusions, namely, frank anaphylactic manifestations occurring within two hours of the injection. The symptoms were dyspnea occurring in seven, pulse rate above 130 in seven and going to 160 in two cases, and urticaria in five. In two cases there was marked edema of the face, and in one the eyes swelled shut and the skin was deeply cyanosed. Recovery was rapid in all after administration of atropin and epinephrin. Twelve times, shortage of convalescent plasma caused us to centrifuge the citrated blood immediately. This centrifuged citrated plasma was injected in eighteen instances without any noticeable reaction whatsoever. It seems plausible that the reactions from sedimented citrated plasma then were caused by the excessive contact with foreign material and resultant trauma to the platelets, particularly in the process of sedimenting and cooling for from twenty-four to seventy-two hours, pipetting off the plasma, and administering through an arsphenamin tube with the usual length of tubing.

De Kruif<sup>6</sup> has shown that blood is not toxic at the moment of withdrawal, but becomes so through changes incidental to clotting, and that the toxicity is increased by contact with alien substances. In 1915, Minot<sup>7</sup> demonstrated that blood drawn in a glass syringe and allowed to remain a short period before mixing with oxalate would usually clot when chloroform was added. Blood let through a paraffined cannula directly into oxalate did not clot on the addition of chloroform. He believes that the chloroform inhibits the action of the prothrombin, allowing the free thrombin in the first case to clot the fibrinogen. It follows that the contact with the glass syringe produced the thrombin.

No present day method of transfusion is free from the nonhemolytic type of reaction, and this is true because no method has been devised which entirely eliminates incipient coagulative changes taking place in the process of transfusion.

The majority of investigators at present concede that direct transfusion gives fewer reactions and a greater

percentage of mild reactions than does the citrate transfusion. Lindeman<sup>8</sup> reported as low as 18 per cent. reactions of chills and rise of temperature of 2 degrees or more with the syringe cannula method, while McClure and Dunn<sup>9</sup> reported 13 per cent. severe reactions and 17 per cent. mild reactions with the same method. Reactions with the citrate method have been variously reported, as 17 per cent. by Sydenstricker, Mason and Rivers<sup>10</sup> in 100 cases, 60 per cent. by Drinker and Brittingham<sup>3</sup> in eighty-three cases, Pemberton 36 per cent. in 1,036 cases, 32 per cent. by P. W. and M. C. Clough<sup>4</sup> in 214 cases, and 64.8 by Meleney and his co-workers<sup>11</sup> in 196 cases. (It is significant that the lowest percentage of reactions in the latter group was obtained by Sydenstricker, Mason and Rivers and P. W. and M. C. Clough, who drew the blood under negative pressure in a closed container, thus avoiding clotting in the needle and stirring with a glass rod.)

What factors may cause alteration in transfused blood, and how may we eliminate them? These factors may be grouped under two headings:

1. Contact with foreign bodies.
  - (a) Glassware, rubber tubing, needles, etc.
  - (b) Sodium citrate in citrate method.
  - (c) Length of time outside body.
2. Aeration.
  - (a) Usual citrate method.

1. In the average apparatus for citrate transfusion, the blood is exposed to a great deal more foreign substance, glassware, tubing, etc., than in the direct meth-



Fig. 3.—Apparatus ready for administration of blood.

ods, and much of this exposure comes before any anticoagulant is reached. Often in this process not only the incipient coagulative changes take place, but

5 O'Malley, J. J., and Hartman, F. W.: Treatment of Influenzal Pneumonia with Plasma of Convalescent Patients, *J. A. M. A.* **72**: 34-37 (Jan. 4) 1919.

6. De Kruif, P. H.: Toxicity of Normal Serum, *J. Infect. Dis.* **20**: 717-775 (June) 1917.

7. Minot, G. R.: *Am. J. Physiol.* **39**: 137, 1915.

8. Lindeman, Edward: Reactions Following Blood Transfusion by the Syringe Cannula System, *J. A. M. A.* **66**: 624-626 (Feb. 26) 1916.

9. McClure, R. D., and Dunn, G. R.: Transfusion of Blood, *Bull. Johns Hopkins Hosp.* **28**: 99-113 (March) 1917.

10. Sydenstricker, V. P. W.; Mason, V. R., and Rivers, T. M.: Transfusion of Blood by the Citrate Method, *J. A. M. A.* **68**: 1677-1680 (June 9) 1917.

11. Meleney, H. E., et al.: Post-Transfusion Reactions, *Am. J. M. Sc.* **154**: 733-748 (Nov.) 1917.



the actual clotting takes place in the needle and tubing. It is not unusual in the larger clinics to see cessation of flow from the donor necessitating needling the vein from one to five times. The mere presence of sodium citrate in amounts necessary, 0.25 per cent., does not seem to influence the reactions, as pointed out in the work on influenzal pneumonia mentioned above. Meleney and his co-workers have shown that the reactions have no relation to citrate dosage. In the direct methods, with the exception of the Kimpton-Brown tube, the passage of the blood requires from twenty to thirty seconds, while in the average citrate transfusion thirty minutes is considered excellent time. Thus there is much longer exposure to foreign body, and ample time elapses for loss of body heat.

2. Aeration in the usual citrate procedure may be said to be complete. The dropping of the small stream of blood from the needle into the citrate, with the stirring or agitation necessary to get a good mixture, occurs before the process of coagulation is arrested. Then the blood is poured into a second container for injection.

If these are the factors that may effect alterations in the transfused blood, the cause of our reactions lies here and must be eliminated as far as consistent with ease and success of the operation.

In 1918 I illustrated <sup>12</sup> a compact apparatus citrating the blood near the needle in the hope that it might be valuable in field work. This was a modification of an apparatus which we had used in sixty transfusions, with 38 per cent. reactions. Since this time important modifications have been made. The accompanying illustrations present a citrate apparatus which is at once compact, easy of operation, and reduces to a minimum any possibility of coagulation, both actual and incipient.

THE APPARATUS

A 1,000 c.c. graduated jar (Fig. 1 *A*) is used as a receptacle. A rubber stopper (*C*) is fitted to the neck of this jar. The neck of the graduated citrate bottle (*B*) pierces the stopper. From the jar (*A*) two tubes (*I* and *F*) are brought through the stopper. One (*I*) is the pressure tube, and is broken by the cotton filter (*J*). The other (*F*) is the blood tube, and reaches the bottom of the jar, ending outside with a metal (Luer) needle connection; *J* terminates in a mouth connection or, preferably, a two way pump (*K*). The citrate is brought from the bottom of the citrate bottle (*B*) through the citrate tube (*G*). This is broken by the dropper (*E*) and terminates in a (Luer) needle connection. *D* is a screw clamp with which the flow of citrate is controlled. *H* is a specially designed 16 gage needle with a double Luer shoulder.

THE OPERATION

The complete apparatus is wrapped and steam sterilized at 10 pounds pressure, the only precaution being that the tubes are not sharply bent and that the stopper is fitted very loosely to the neck of the jar. Sterilized, the stopper is fitted and clamped in. The citrate bottle (*B*) is filled to the 100 c.c. mark with 2.5 per cent. citrate, and negative pressure is exerted through the pressure tube (*I*), drawing the citrate along the citrate tube (*G*), through the dropper (*E*), through the special needle (*H*) and back into the jar (*A*) along the blood tube (*F*). Thus, the system is coated with citrate and 10 c.c. is drawn into the jar. The apparatus is now set on the arm board and the needle plunged through the previously sterilized skin into a large vein. Gentle negative pressure is exerted and a generous flow of citrate is allowed until the blood is seen to be coming in good volume; then it is regulated to about 40 drops to the minute, or so that with each hundred cubic centimeters in the jar (*A*) approximately 10 c.c. of citrate is withdrawn from the citrate bottle (*B*). The

desired amount of blood being obtained, the pump is reversed. The needle (*H*) is removed and an ordinary needle (Fig. 3 *H'*) is fitted to the blood tube (*F*), the citrate tube being laid back out of the way. *H'* is now removed and inserted into the patient's vein. Positive pressure is exerted through the pressure tube (*I*); and, when the blood tube (*F*) is filled, the connection is made. The blood is driven over with gentle pressure and five minutes should be consumed in the administration of the first hundred cubic centimeters.

In the first sixty transfusions, citration was done near the needle, and the blood was injected by gravity through a length of rubber tubing (Table 1).

TABLE 1.—FIRST SERIES

Diseases Treated	Number	Reactions Number	Reactions Per Cent.
Pernicious anemia .....	46	20	43
Aplastic anemia .....	2	0	0
Secondary anemia .....	1	0	0
Hemophilia .....	3	1	33
Septicemia .....	2	1	50
Shock and hemorrhage.....	6	1	16
Total .....	60	23	
Percentage of reactions			38.3

In the last forty cases in which the work was done with the apparatus as presented here, the percentage of reactions has fallen from 38.3 to 20 per cent. (Table 2).

TABLE 2.—SECOND SERIES

Diseases Treated	Number	Reactions Number	Reactions Per Cent.
Pernicious anemia .....	15	3	20
Secondary anemia .....	11	2	18
Purpura hemorrhagica .....	2	1	50
Pellagra .....	1	0	0
Myxedema .....	2	0	0
Septicemia .....	1	0	0
Shock and hemorrhage.....	8	2	25
Total .....	40	8	
Percentage of reactions			20

This reduction in the number of reactions of almost 50 per cent. over the first series of cases may be ascribed wholly to: (1) perfect citration within the needle, preventing coagulative changes; (2) absence of stirring or aeration, since the blood comes always to the bottom of the jar and is injected from the same container without passing through any filters or other foreign materials; (3) rapidity of the transfer, which rarely requires more than twenty minutes and often not more than twelve or fifteen minutes.

In the first series all were done by one or the other of two operators, while in the last series there have been four different operators so that training of the operators cannot be considered. There is not only a great reduction in the number of reactions, but also a marked improvement in their character. In the last forty cases there have been only two moderate chills of thirty minutes, one mild urticaria lasting fifteen minutes, and in no case did the temperature rise above 102 F. Most of the reactions consisted of chilly sensations and slight elevations in temperature.

CONCLUSIONS

1. Nonhemolytic transfusion reactions are largely due to incipient coagulative changes in the transfused blood.
2. These changes are probably caused by injury to the platelets with the formation of thromboplastin and thrombin.
3. To prevent injury to the platelets we should avoid contact with foreign substances as far as possible,

12. Hartman, F. W.: New Methods for Blood Transfusion and Serum Therapy, J. A. M. A. 71: 1658-1659 (Nov. 16) 1918.



avoid aeration and loss of body heat, and add the anti-coagulant as the blood leaves the vein of the donor.

4. The apparatus described is compact and easily manipulated; it citrates the blood within the needle.

5. The employment of this apparatus has reduced the number and severity of reactions 50 per cent.

## THE PRESENT-DAY SOURCES OF COMMON SALT IN RELATION TO HEALTH

AND ESPECIALLY TO IODIN SCARCITY AND  
GOITER \*

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It is not the purpose of this paper to discuss the iodine theory or the use of iodine in the prevention of goiter and its associated conditions. These have been investigated for animals by such workers as Marine and Lenhart,<sup>1</sup> Gaylord and Marsh,<sup>2</sup> and others,<sup>3</sup> and cover such animal life as fresh water fishes, frogs, and domestic animals (dog, cat, sheep and hog). The "hairless hog malady" and its association with goiter and deficiency of iodine in the diet was pointed out by Smith<sup>4</sup> in Montana and later by Hart and Steenbock<sup>5</sup> of the University of Wisconsin, and Kalkus of Washington State Agricultural Experiment Station. Marine advocated the giving of sodium iodide with salt in the prevention of endemic sheep struma in the St. Clair Flats about Detroit, with happy results. Finally, the goiter prevention work of Marine and Kimball<sup>6</sup> by administration of sodium iodide to schoolchildren of Akron, Cleveland and Warren, Ohio, is confirmatory of the importance of iodine in goitrous conditions. In foci of severe endemic goiter, sex plays little part.<sup>7</sup>

### NATURAL SCARCITY OF IODINE

The fact that there should be a deficiency in natural iodine intake has been the subject of careful inquiry into the dietary of man and domestic animals by such investigators as Cameron,<sup>8</sup> Forbes and Beegle,<sup>9</sup> Bohn<sup>10</sup> and Winterstein.<sup>11</sup> Cameron succinctly summarizes the situation as follows: The iodine content of the environment determines the diet of plant life in the sea, and to this fact is due the marked difference in iodine found in fresh water plants and vegetables, on the one hand, and marine algae on the other; "all sea species of ani-

mals contain iodine;" and, "land plants contain very much less iodine, although it is widely distributed in them." Forbes and Beegle, after an exhaustive inquiry into the iodine content of foods of man and domestic animals, say, in answer to the usually assumed wide distribution of iodine: "The evidence seems much more to emphasize the rarity and the accidental nature of iodine as a food constituent."

Why there should be this natural deficiency of iodine in diets is curious, yet its scarcity in nature has been long known to geochemists, as well as its infrequency of occurrence in salt sources by commercial and industrial chemists. Sloan,<sup>12</sup> following Marine's suggestion for animals, advocates an iodized salt for the use of human beings, the proportion of sodium iodide to salt to be 1 to 5,000, and he observes that, in the evaporation of salt brines, the mother liquor which is removed takes with it the natural content of iodine which is originally "found in most of the salt brines from which salt is crystallized." Both Forbes and Beegle, and Bohn report the entire absence of iodine in various forms of market salt examined. Foulk, in 1906, found neither iodine or bromine in a finished product of Pomeroy (Ohio) salt, although the brine contained both.<sup>13</sup> Having made a number of industrial hygiene surveys in Ohio, including a survey of the salt industry, and having noted the by-products activity at some plants, I have taken occasion during the last summer to investigate the subject of the removal of iodine from the original salt sources, and I find a peculiar situation which I believe to be of considerable significance.

The preparation of valuable by-products has for years been a feature in the salt industry.<sup>14</sup> The by-products consist of calcium chlorid, bromine, calcium sulphate (gypsum), borates, magnesium chlorid, magnesium sulphate and, rarely, other substances, but never iodine or its compounds. To understand this situation, I have found it necessary to go into the geology and chemistry of salt formation, as well as to inquire into certain features in the manufacture of salt.

### GEOCHEMISTRY OF SALTS<sup>15</sup>

Of the four halogens, iodine is by far the rarest in natural distribution, but it always occurs in sea water. "The sea is the great storehouse of iodine" (Abel and Halla).<sup>16</sup> Here certain plants, for example, the giant sea kelp, have the faculty of storing relatively large amounts of it. On their disintegration, the iodine is returned to the sea, thus an iodine cycle is established; but it includes the sea only. Sea plants, along with Chili saltpeter, are its chief commercial sources. It exists in sea water to the extent of 0.01 gm. of sodium iodide (NaI) per liter (Molinari),<sup>17</sup> and occurs in three forms, according to Gautier,<sup>16</sup> who, in the Gulf of Lyons, found: no inorganic iodine, except at great depths (880 meters [2,886 feet]—0.15 mg. per liter); 2.13 mg. per liter organic; and 0.1 mg. per liter in sea organisms. The suggestion is made that sea organisms transform the inorganic iodine compounds of the depths

\* From the Division of Industrial Hygiene, Ohio State Department of Health.

\* A letter, preliminary to this paper, published in Science, Aug. 12, 1921, p. 131, speculated on both source and present-day purification of salt in relation to goiter. Credit should be given Dr. H. G. Sloan (Footnote 12) for previously mentioning the purification observation.

1. Marine, David, and Lenhart, C. H.: Further Observations on the Relation of Iodine to the Structure of the Thyroid Gland in the Sheep, Dog, Hog and Ox, Arch. Int. Med. **3**: 66 (Feb.) 1909; Relation of Iodine to the Structure of Human Thyroids, *ibid.* **4**: 440 (Nov.) 1909; J. Exper. M. **19**: 70, 1914.

2. Gaylord and Marsh: Bull. U. S. Bureau Fisheries **32** (April 22) 1914, Doc. No. 790.

3. Grumme: Cor.-Bl. Schweiz. Aerzte **46**: 16, 1916. Emmet, Allen, Sturtevant: J. Biol. Chem. **41**: 3, 1920. Kalkus, J. W.: Bull. 156, Wash. (State) Agr. Exper. Station, July, 1920.

4. Smith: J. Biol. Chem. **29**: 215, 1917.

5. Hart and Steenbock: J. Biol. Chem. **33**: 313, 1918.

6. Marine, David, and Kimball, O. P.: The Prevention of Simple Goiter in Man, Arch. Int. Med. **25**: 661 (June) 1920; Ohio State M. J. **16**: 757, 1920; J. A. M. A. **77**: 1068 (Oct. 1) 1921.

7. Osler: Modern Medicine **6**: 404, probably quoting Baillarger.

8. Cameron: J. Biol. Chem. **18**: 335, 1914; **23**: 1, 1915.

9. Forbes and Beegle: Bull. 299, Ohio Agr. Exper. Station, 1916.

10. Bohn, R. M.: J. Biol. Chem. **28**: 375 (Jan.) 1917.

11. Winterstein: Ztschr. f. physiol. Chem. **104**: 54, 1918.

12. Sloan: Ohio State M. J. **17**: 172, 1921. Compare Bayard, Otto: Beitrage am Schilddruesenfrage (The Goiter Problem), abstr. Endocrinology **4**: 606 (Oct.-Dec.) 1920.

13. Foulk's Analysis, reported by Bownacker, Bull. 8, Ohio Geol. Survey, 1906, p. 27.

14. Insley: U. S. Geol. Survey, Min. Res. of the U. S. **2**: 239, 1921. Sweeney and Withrow: J. Indust. & Engin. Chem. **9**: 671, 1917. Turrentine: Bull. 94, U. S. Bureau of Soils, Dept. Agr., 1913.

15. Clark: Bull. 616, U. S. Geol. Survey, 1916. Bownacker: Bull. 8, Series 4, Ohio Geol. Survey, 1906. Molinari: Industrial Chemistry (Inorganic), trans. by Feilman, 1912.

16. Cited by Cameron (Footnote 8).

17. Molinari (Footnote 15), pp. 150, 209, 424 and 452.



into the organic compounds found in the upper strata of sea waters. Bromine, likewise, exists to the extent of 0.064 gm. per liter in sea water.<sup>17</sup> It is also rare elsewhere in nature.

By far the chief natural iodine salt is sodium iodide. This is one of the most soluble salts known—about five times as soluble as sodium chloride (158.7 gm. as compared to 35.7 gm. dissolved in 100 gm. of water at 0 C.).<sup>18</sup> While most of the other natural salts of iodine are also very readily dissolved, there are occasionally some which occur in minerals that are quite insoluble. The significance of this point will be speculated on later.

The specific gravity of ocean water is usually given as 1.028 (that of human blood is 1.060). Its salt content (salinity) is, on the average, 3.4404 per cent., being remarkably constant, the world over.<sup>19</sup> Obviously, it varies somewhat quantitatively in places, owing to fresh water admixtures along the coast, evaporation in pocketed bays of the sea, and formation of ice at the poles. The qualitative make-up is even more constant. Conventional combinations usually given for the salts of sea water, with their percentages, are:<sup>20</sup> sodium chloride (NaCl), 77.8 per cent.; magnesium chloride (MgCl<sub>2</sub>), 10.9 per cent.; magnesium sulphate (MgSO<sub>4</sub>), 4.7 per cent.; calcium sulphate (CaSO<sub>4</sub>), 3.6 per cent.; potassium sulphate (K<sub>2</sub>SO<sub>4</sub>), 2.5 per cent.; magnesium bromide (MgBr<sub>2</sub>), 0.2 per cent., and calcium carbonate (CaCO<sub>3</sub>), 0.3 per cent.: total 100.0 per cent.

There are also constantly present traces of many other elements and combinations, including iodine. Blackmore<sup>21</sup> estimated the value of iodine at \$62,003,200 per cubic mile (4.696 cubic kilometers) of sea water (1912), and the gold at \$92,184,000.

The great solubility of sea salts is noteworthy, for it is found that, after evaporating sea water, the deposit remaining dissolves in pure water with a total insoluble residue of from only 0.007 to 0.010 per cent.<sup>22</sup> This is significant as showing the easy assimilability of sea salines by animal and plant organisms so far as solubility goes. It is stated also by geochemists that there probably has been no significant variation in the constancy of these sea salines within the epoch of mammals and, perhaps, of total animal and vegetable life on the earth. The slight changes due to salts received from river waters are insignificant. Furthermore, most of the sea salines have probably been the result of rock decomposition in the sea floor and coasts during countless ages, so that an equilibrium has long since been established, which is practically the same for the sea mass as a whole, the world over.

The difference in solubility between sodium chloride and sodium iodide undoubtedly explains why there is plenty of the former in the earth's deposits and very little of the latter. In the first place, in the drying up of seas in ages past, sodium chloride was the first substance deposited, and often the supernatant liquid escaped with its sodium iodide still in solution. A salt stratum or "rock salt" bed resulted, which was free of iodine. In the second place, such sodium iodide as may have been deposited has been very largely dissolved out for ages through the agency of percolating rain and

subsoil waters. Finally, in the third place, pent-up sea brines or supernatant salt solutions, of both surface and subterranean types, have been subjected so long to similar land-water perfusions as to lose practically all of their more soluble constituents. Thus, higher surface altitudes are freest from iodine, while mineral springs which represent drainings from higher altitudes show it, as among the last places of its occurrence.<sup>23</sup>

This is the explanation given for the absence of iodides and other soluble salts in the great natural salt deposits of the Alps, at Stassfurt, and elsewhere throughout the world,<sup>17</sup> while it accounts for the richness in iodine of some of the world's most famous springs.

The practical significance of this can be stated in one short sentence: The land surface and, indeed, salt (sodium chloride) deposits and inland salt brines cannot be depended on for iodine; that which was once present has been virtually leached out and all washed into the sea, or, at least, into lower lying plains or deeper earthy strata. Naturally, this condition is progressive. It accounts for the tendency in wild animals to favor certain salt springs or "licks," and to quit them for others without apparent cause. Kalkus reports that "deer lick" soils showed an iodine content of 0.032 per cent., whereas soils from a goitrous district showed only 0.0015 and 0.00161 per cent. Civilization augments the depletion process, for, as long pointed out by soil economists, plants remove salts from the soil for the use of animals whose wastes we cause to be deposited in "pockets" or in drainage systems which lead to the sea, and not back to the soil.

The fact that, occasionally, some goitrous region has become free of the tendency to produce goiter, may be explained on the theory that some iodine salt becomes available which has hitherto been buried beyond the dissolving effects of the water present, or that a change in the type of water, from hard to soft, has taken place. There are also a number of difficultly soluble iodine compounds and minerals. These points would appear to explain on a chemical basis why "goiter wells" sometimes become innocuous when the water is boiled, or when new water supplies are obtained or soft water is substituted for the hard waters of "shell-lime" districts.

#### INFREQUENCY OF GOITER IN MARITIME DISTRICTS

The relative infrequency of goiter along sea coasts and its mild type<sup>24</sup> when present is mentioned in most textbooks. It is especially brought out in "Defects Found in Drafted Men,"<sup>25</sup> in which the ratio stands as 1.02 to 17.55 when seacoast dwellers are compared to dwellers in mountain regions. The cause appears to be associated in some way with the iodine factor.

Thus, Hunter and Simpson<sup>26</sup> found the amount of iodine in the thyroids of sheep pastured at the seacoast to be twice that of those pastured inland. McCarrison

18. Whalen: Bull. 146, U. S. Bureau of Mines, Min. Tech. 20, p. 137, 1917. Van Nostrand's Chem. An., 1918.

19. Clarke: Data of Geochemistry, Bull. 616, U. S. Geol. Survey, 1916.

20. Whalen: Bull. 669, U. S. Geol. Survey, pp. 197, 219, 1919.

21. Blackmore: Chem. Abstr. 6: 2055, 1912.

22. Whalen: Bull. 669, U. S. Geol. Survey, p. 219, 1919.

23. Even here, Skinner and Stiles (Bull. 139, U. S. Bureau of Mines, 1911) failed to find iodine in any of the fifty-odd mineral waters examined from widely scattered sources in the New England states. But it is found in good percentage in some springs, wells and surface waters, elsewhere in the country (Haywood: Bull. 91, U. S. Bureau of Mines, 1905; Orton: Rock Waters of Ohio, Nineteenth Annual Rep., U. S. Geol. Survey, p. 633, 1898; Clarke [Footnote 19]) and in concentration often greatly exceeding its content in sea water. On the other hand, salt pools or salt springs which represent supernatant solutions over salt beds are usually free of iodine or practically so.

24. Grumme (Footnote 3); Knappenberg: Chem. Abstr. 14: 1381, 1920.

25. U. S. War Dept., 1920, p. 323.

26. Hunter and Simpson, cited by McCarrison: The Thyroid Gland, 1918, p. 41.



son<sup>26</sup> gives the average weight of adult thyroids as from 35 to 50 gm. inland and from 20 to 30 gm. at the seacoast. The iodine theory would appear to explain these seacoast phenomena in several ways: (1) Because sea air contains iodine. It is found in the air residue collected for analysis, which consists of various organisms.<sup>27</sup> (2) All sea animals, sea plants and, therefore, sea foods contain iodine, and such foods are naturally more ingested by residents along the seacoast than those inland.<sup>28</sup> (3) Up to the last half century or so, most of the dietary salt used by goiter-free peoples has been derived from sea water, or from iodine-containing salt springs (wild animals sought salt "licks") and used more or less in crude form, or at least without great attention to purification, so that traces of iodine compounds have remained within it, whereas today practically all the salt purchasable is derived from deep-lying inland deposits or brines, which are naturally, or by manufacture, iodine free.

Gaylord and Marsh<sup>2</sup> found that the waters used to supply fish hatcheries throughout the country were iodine and bromine free,<sup>29</sup> and that land-locked salmon and those in hatcheries developed endemic goiter, and

except for the last two columns, which were supplied by Professor Withrow of Ohio State University.

According to the U. S. Geological Survey Report<sup>32</sup> for 1919, there were 102 plants in fifteen states and territories engaged in the salt industry in 1919. Of these plants, all are inland, with the exception of those along the California coast, where sea water is the source of supply. The inland industry has a great advantage because of the much greater sodium chloride content of rock salt beds and natural brines. The total production was 6,882,902 short tons. Michigan led with 2,492,378 tons; New York followed with 1,947,829; Ohio was third with 991,730, the other states following in descending order: Kansas, California, Louisiana, Virginia. The per capita consumption was 116 pounds (256 kg.) per year. Imports equaled 0.9 per cent. of the total, coming chiefly from Spain and the British West Indies. The inland salt sources are usually found to be devoid of iodine (and usually of bromine). As a general rule, rock salt deposits and, therefore, the artificial brines made from them, contain a minimum of iodine if any (eastern Michigan, northern Ohio, New York State, Kansas and Louisi-

#### THE COMMERCIAL PROCURING OF SALT IN THE UNITED STATES

Source and Method	Chief Localities	Amount, 1919 (Short Tons)	Per Cent.	Chief Use
Rock salt, mined	N. Y., Kan., Mich., La., Calif., N. M., Utah	1,642,057	23	Stock feed
Salt in brine (pumped from natural and artificial brines*)	N. Y., Mich., Ohio, Utah, etc.	2,850,639	41	Chemicals
Salt evaporated from natural and artificial brines*	Mich., N. Y., Kan., Ohio, Calif.	2,390,206	22	Packers
(a) Direct heating methods; steam, or vacuum pans; pumped from salt wells (extensive)			10	Table and dairy use
(b) Solar evaporation (limited). Sea water (California). Salt lakes (Utah). Salt springs and wells (Syracuse, New York, 1789-1880)			4	Miscellaneous (solar)
			100	

\* Artificial brines are made by forcing water down into rock salt deposits in the earth, often from 2,500 to 3,000 feet (760 to 912 meters) deep, and pumping up or air-lifting the resulting brine. Natural brines are supernatant solutions over salt beds. Salt from sea brine is made only in California, which produces 4 per cent. of the country's total annual output of salt.

thyroid carcinoma, readily; but that "no marine species have been found in the sea with thyroid enlargements"; "an immunity resides in these marine species," they enjoy "a protection which the sea affords"; and, from their investigations, "it is evident that marine species may develop thyroid carcinoma while resident in fresh waters." Unfortunately, published information on the diseases of marine animals in general, at least covering the afflictions of the thyroid, is very scarce.<sup>30</sup>

#### SOURCES AND PREPARATION OF COMMON SALT (SODIUM CHLORIDE)

The commercial procuring of salt in the United States represents all the known sources and methods of preparation, as may be noted in the accompanying table, prepared from various government reports,<sup>31</sup>

27. Gautier, cited by Cameron (Footnote 8). Luckhardt, Koch, Schroeder and Weiland: *J. Pharmacol.* 15:1, 1920.

28. Grumme (Footnote 3). Rosenau: *Preventive Medicine and Hygiene*, p. 918.

29. Large quantities used for analysis showed less than one part per billion of iodine and one part per one-fourth million of bromine.

30. A prominent authority on fishes, Prof. R. C. Osborn of the Ohio State University, gives me this information and states further that the same information would be difficult to ascertain for marine forms in their wild state because, in their competitive life, those which become slightly diseased or incapacitated are quickly made away with by their carnivorous enemies. However, replies received from several marine biologists (Franz Schrader, M. C. Marsh, Prof. G. H. Parker and C. H. Walters), some having experience with the seals of the Pribilofs, stress the absence of thyroid enlargements in sea animals, so far as their observations have gone.

31. Compare Footnotes 14, 18 and 20.

ana). Natural brines are more likely to contain iodine and especially bromine (southeastern Ohio at Pomeroy, West Virginia, Pennsylvania, western Michigan). Yet the Pomeroy brines contain but 0.004 gm. per liter of iodine<sup>33</sup> or less than one-half that of sea water.<sup>33</sup> Salt lakes (Great Salt Lake and the Dead Sea) contain no iodine.<sup>34</sup>

The first step in the preparation of salt is the evaporation of the brine from which sodium chloride precipitates and then crystallizes. The mother liquor is subjected to further similar treatments (sulphates and carbonates of calcium, if present, precede the sodium chloride in crystallizing out) until the profitably recoverable salt is all obtained. The finished product averages 96 per cent. sodium chloride (NaCl), 3 per cent. moisture, and the balance principally magnesium chloride (MgCl<sub>2</sub>). The remaining liquor or "bittern" is led away, usually to be discarded, but occasionally for the purpose of obtaining its by-products, as listed above.

When we come to investigate the preparation of salt from the sea water, which is now made on a commer-

32. Whalen: *Bull.* 146, U. S. Bureau of Mines, Min. Tech. 20, 1917. Mason: *Mining Se. Press* 118:528. Turrentine: *Bull.* 94, U. S. Bureau of Soils, 1913. Whalen: *Bull.* 669, U. S. Geol. Survey, 1919.

33. They likewise contain soluble barium, a metal not reported in sea salines which, because of its poisonous properties for animals, must be carefully separated from dietary salt.

34. Frezenius (*Chem. Abstr.* 7:3522, 1913) declares that a trace of iodide occurs in the waters of the Dead Sea.



cial scale only in California, we find that the same process of evaporation frees it from the bittern which carries away with it all of the iodine and various other elements, ingredients and compounds naturally contained in sea water. Hence, it would appear (1) that land animals, including man, have no dependable source of iodine in the salt derived from inland sources, which produce about 96 per cent. of our total salt supply, and (2), irrespective of whether it is derived from inland sources or from sea water, salt is not at present a source of iodine, because, as Sloan points out, of the preparation processes through which it passes.

#### SUGGESTED CHANGES IN DIETARY SALT

This brings us to but one logical conclusion: If land animals, including man, must have iodine as a necessary content of their food intake, its one reliable natural source is sea water, which, however, must be handled and provided in a manner to retain the iodine, and this probably in its organic form.

This raises an important question: Should not total sea salts or, indeed, plain sea water, be used as the proper and complete condiment for man and land animals? It must be remembered that it contains not only the two discussed essentials, sodium chlorid (NaCl) and sodium iodid (NaI), but also many other physiologically important salts and salines. It is not poisonous. It can be filtered free of foreign matter, even bacteria. Plants and animals, both sea and land forms, show a selective action for such elements as they need for their economic processes.

There is a dearth of information in textbooks and reference works concerning the direct ingestion of sea water as a feature of thalassotherapy,<sup>35</sup> but its subcutaneous injection in hypodermoclysis is said to far excel physiologic sodium chlorid solution for the same conditions and indications for which the latter is used. The sea water salts, though they exist, with the exception of sodium chlorid and magnesium chlorid, in relatively small amounts, are found to be the identical salts and salines found in fluids of the animal body. While it is true that most of the sea water elements are also widely distributed in the balance of nature and found in our usual foods, the great solubility of the combinations in which they exist in sea water would appear to warrant giving them, in toto, serious consideration in the dietary of man and domestic animals.<sup>36</sup>

In addition to the reported inhibiting influence of sea water on goiter, may not some of the rarer elements present, if not iodine itself, play an important part in the prevention of some other human afflictions of little understood etiology? May not the absence of bromine from our usual food intake play an important<sup>37</sup> part in the occurrence of various excitomotor conditions?

It is sufficient to say that while the character of dietary salt is apparently all important to man and

domestic animals, it is hardly a major phase of the salt "manufacturing" industry, as vast quantities of salt are used for other purposes—curing meats, refrigeration, soda manufacture, and chemicals, as shown in the table.

#### SUMMARY

1. The question of the significance of iodine in the prevention of goiter is left to the authorities that have been cited.

2. The question of the observed scarcity of iodine in food for man and animals is, also, left to the authorities cited.

3. While iodine may occur in natural deposits along with chlorine, usually in the form of the sodium salt, it is never obtained from such sources commercially because it occurs in too limited quantities. Chili salt-peter is the chief source of iodine.

4. The sea is the great storehouse of iodine where it completes a cycle from inorganic compounds to organic life and return.

5. The salts of sea water are constant in both quality and quantity. Sodium chlorid comprises 77.8 per cent., magnesium chlorid 10.9 per cent., with many compounds, including sodium iodid, which composes the remaining 11.3 per cent. It has an average total salinity of 3.4404 per cent. All of the salts in sea water are unusually soluble in plain water.

6. The great solubility of sodium iodid accounts for its almost complete absence from the land surface and, perhaps, for some of the peculiarities noted in regard to the incidence of goiter.

7. Authorities are agreed that goiter is infrequent in both animals and man along the sea. The same is true, also, of some fishes (salmons) which inhabit both fresh water and sea water, tending to develop goiters in the former, and none in the latter.<sup>2</sup> Apparently sea animals do not have goiter.

8. Practically all salt used in the United States for dietary consumption is obtained from inland sources by the evaporation of brines, which for the most part are inherently free of iodine.

9. Irrespective of the source, whether sea water or inland deposits, the modern processes of preparing and purifying salt free it from all traces of iodine, as well as its other naturally associated elements, many of which are identical with the body fluids of higher animals.

#### CONCLUSION

An analogy should be drawn from sea life and a precept taken from evolution. Of the dependable sources of iodine in nature—sea air, sea food and sea water—it is to sea water, used perhaps in place of common salt as a condiment, that inland dwellers should look. This substitution would appear to offer a complete solution to the iodine deficiency problem, if nothing else, while evidence would tend to show that other constituents of sea water have also an undoubted place in the economy of the higher animal organism, perhaps to the extent of precluding some diseases which are likewise, possibly, of a deficiency type. Common salt for dietary purposes should include not only sodium chlorid but also sodium iodid, and undoubtedly many of its other original concomitants. For geochemical reasons, great care should be taken in selecting its source, if it is not actually derived always from sea water. It must then be handled commercially in a manner to retain these constituents.

35. Cohen, S. Solis: Reference Handbook of the Medical Sciences, Ed. 3, Stedman 8:155, 1917.

36. From the nature of sea salines, some of which are very deliquescent, it is to be observed that a change in the form of dispensing such a condiment, from a dry to a liquid form, would probably be necessary. The rather bitter taste might prove objectionable to some who dislike "bitters." No doubt the chief "bitters" in sea water (the sulphates of magnesium, calcium, sodium and potassium which are less soluble than sodium chlorid [NaCl], and the magnesium chlorid [MgCl<sub>2</sub>]) might be reduced in amount or separated out of the prepared condiment. It is to be remembered, however, that it is a condiment and not a drink which is under discussion.

37. Pellegrini: Inhalations of bromine produce marked physiological alterations in the thyroid, Arch. di farmacol. sper. 23:201, 1917; Chem. Abstr. 11:2232, 1917. Carnot and Coirre: Neurotropic and Elective Action of Bromine on Brain Tissue, Compt. rend. Soc. de biol. 76:641, 1914. Is Bromine a Tissue Component? editorial, J. A. M. A. 77:470 (Aug. 6) 1921.



SIMPLIFICATION OF WOODYATT METHOD  
FOR CALCULATING THE OPTIMAL  
DIABETIC DIET\*

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The results of the research work of Allen and his associates mark an epochal advance in the treatment of diabetes. The great majority of cases of diabetes can be successfully treated by his method. There remain, however, a few severe cases in which the prevention of glycosuria by the restriction of diet results in severe inanition. In such cases the physician has the choice of furnishing a sufficient supply of food to maintain the energy requirements of the body and disregarding the glycosuria, or of restricting the diet and permitting the gradual loss of body tissues to continue.

Neither procedure is satisfactory. Confronted with the necessity of solving this difficulty, Newburgh and Marsh<sup>1</sup> had the courage to prescribe a diet with a low protein fraction and an amount of fat which had previously been considered dangerous. They report seventy-three cases in which this method was used with astonishing success. Not only were the urines of these patients rendered sugar and acetone free, but a moderate output of energy with an increase in weight was rendered possible.

Of glucose, protein and fat, the first is the only one which can be considered an indispensable element in the production of animal heat and muscular energy. If adequate amounts are not furnished in the diet, the proteins and fats of the body are converted to make up the deficiency. In the case of protein this is not an economical use of material, since it must inevitably result in a serious loss of the nitrogenous constituents of the body. Glucose may heat and run the human

and tear on the protein tissues. The amount can be approximated closely enough for clinical purposes by a relationship between the gross body weight and the protein intake. Newburgh and Marsh found that 0.66 gm. of protein per kilogram of body weight was sufficient to maintain nitrogen balance in some of their cases. This must, however, be regarded as an absolute minimum, since in the experience of others 1 gm. or more per kilogram will more nearly meet the requirements.

TABLE 2.—DETERMINATION OF PROTEIN FRACTION  
OF DIET \*

Weight in Pounds	Metric Equivalent in Kilograms	1.5 Grams per Kg.	2 Grams per Kg.	2.5 Grams per Kg.
55	25	37.5	50.0	62.5
66	30	45.0	60.0	75.0
77	35	52.5	70.0	87.5
88	40	60.0	80.0	100.0
99	45	67.5	90.0	112.5
110	50	75.0	100.0	125.0
121	55	82.5	110.0	137.5
132	60	90.0	120.0	150.0
143	65	97.5	130.0	162.5
154	70	105.0	140.0	175.0
165	75	112.5	150.0	187.5
176	80	120.0	160.0	200.0
187	85	127.5	170.0	212.5
198	90	135.0	180.0	225.0
209	95	142.5	190.0	237.5
220	100	150.0	200.0	250.0

\* For use in determining the amount of protein necessary to maintain nitrogen equilibrium at 1, 1.5, 2 and 2.5 gm. per kilogram of body weight. The minimum is 1 gm.

It is not necessary to figure the weight too closely, since this method can furnish only an approximate idea of the amount of protein required. In adults, a difference of 5 pounds above or below the exact weight does not appear to me to be important, since the water, fat, mineral and salt content of two individuals of exactly the same weight may vary considerably. The amount of protein necessary to maintain nitrogen equilibrium in the two cases would, therefore, differ. For these reasons, too great refinement in determining the protein fraction of a diet by its relation to the gross body weight is not warranted except in cases in which inanition is extreme.

Fat as food cannot be considered as indispensable to the human body, since as a source of energy it can perform few functions which glucose cannot perform as well or better and with less tax on the metabolic processes. Body fat, however, constitutes an important reserve source of energy, and is important as a supporting tissue and in the structural make-up of nerves and other tissues. Food fat cannot be utilized adequately as a source of energy except when its oxidation is accompanied by the oxidation of glucose. In other words, "fat burns in the flame of glucose." Faulty oxidation results in ketonuria.

The normal individual and the diabetic differ only in that the latter is unable to utilize as large an amount of glucose. By reason of this fact the diabetic shows ketonuria when his sugar tolerance falls below a point which does not permit complete oxidation of the fatty ketogenic acids. The problem of determining the optimal diabetic diet, therefore, resolves itself into one which permits (1) enough protein to maintain nitrogen equilibrium, (2) as much glucose as the functional insufficiency of the pancreas will permit, and (3) as large an amount of fat as can be oxidized without the appearance of ketone bodies in the urine, or other signs of acidosis.

TABLE 1.—FATTY ACID EQUIVALENT AT A KNOWN  
GLUCOSE TOLERANCE \*

Known Glucose Tolerance	Corresponding Fatty Acid Tolerance	Known Glucose Tolerance	Corresponding Fatty Acid Tolerance
50	75	180	270
60	90	190	285
70	105	200	300
80	120	210	315
90	135	220	330
100	150	230	345
110	165	240	360
120	180	250	375
130	195	260	390
140	210	270	405
150	225	280	420
160	240	290	435
170	255	300	450

\* To be used to determine the tolerance for higher fatty acids and ketogenic amino-acids corresponding to a known glucose tolerance. The fatty acid tolerance is figured at 1.5 times the glucose tolerance.

engine, but protein is the substance of which the engine is made. Any diet, therefore, which fails to provide for replacement of nitrogen must in the long run result disastrously.

The exact nitrogen requirements of an individual patient can be determined only by an analysis of the food intake and the waste output. The patient is in nitrogen balance when the food supplies at least enough nitrogen to make good the losses due to wear

\* From the Department of Medicine, Northwestern University Medical School.

1. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in Treatment of Diabetes Mellitus, Arch. Int. Med. 26: 647 (Dec.) 1920.



In a recent article, Woodyatt<sup>2</sup> calls attention, among other things, to the necessity of considering endogenous conversion of protein and fat into glucose and ketogenic acid bodies in adjusting the diabetic diet. On the basis of experiments by Zeller, Lusk, Shaffer and Osborne, and on clinical and chemical observations of his own, he advances the hypothesis that the ratio of higher fatty acids to glucose in the diabetic diet should be as 1.5 is to 1 if acidosis is to be avoided. The practical application of this hypothesis would mean that a diabetic obtaining and utilizing 100 gm. of glucose from all sources should be able to oxidize completely 150 gm. of higher fatty acids, an amount obtainable from 170 gm. of fat. The diets used by Newburgh and Marsh contain two or more parts of ketogenic acids to one of glucose. Further experience with high fat diets may show that under certain conditions still larger amounts of ketogenic acids may be oxidized. At present Woodyatt's calculations seem to be a conservative appraisal of the metabolic processes involved in the oxidation of ketogenic acids. He has attempted the practical application of generally accepted facts in regard to endogenous metabolism to the problem of figuring the optimal diabetic diet. It is unfortunate that the application of his hypothesis as originally presented requires

TABLE 3.—YIELD OF KETOGENIC ACID \*

Yield of Ketogenic Acid from Protein	Grams of Substance	Yield of Higher Fatty Acids from Fat
2.3	5	4.5
4.6	10	9.0
6.9	15	13.5
9.2	20	18.0
11.5	25	22.5
13.8	30	27.0
16.1	35	31.5
18.4	40	36.0
20.7	45	40.5
23.0	50	45.0
25.3	55	49.5
27.6	60	54.0
29.9	65	58.5
32.2	70	63.0
34.5	75	67.5
36.8	80	72.0
39.1	85	76.5
41.4	90	81.0
43.7	95	85.5
46.0	100	90.0
48.3	105	94.5
50.6	110	99.0
52.9	115	103.5
55.2	120	108.0
57.5	125	112.5
59.8	130	117.0
62.1	135	121.5
64.4	140	126.0
66.7	145	130.5
69.0	150	135.0
71.3	155	139.5
73.6	160	144.0
75.9	165	148.5
78.2	170	153.0
80.5	175	157.5
82.8	180	162.0
85.1	185	166.5
87.4	190	171.0
89.7	195	175.5
92.0	200	180.0

\* For use in determining the average yield of ketogenic acids of protein (left column) figured at 0.46 and of fat (right column) figured at 0.9.

the use of complicated equations. Simplification of calculation so that all the necessary information can be obtained by simple addition and subtraction is desirable. I have attempted to simplify the method of calculation by the preparation of tables which may be used as such, or which may be adapted to the slide rule.

2. Woodyatt, R. T.: Objects and Method of Diet Adjustment in Diabetes, Arch. Int. Med 28: 125 (Aug.) 1921.

To use the tables it is necessary to know (a) the weight of the patient and (b) the number of grams of glucose obtained from all sources which can be utilized. The method of calculation can best be illustrated by applying it in a hypothetical case in which the weight is 60 kg. and the glucose tolerance is 120 gm.

TABLE 4.—DETERMINATION OF CARBOHYDRATE FRACTION \*

Yield of Glucose from Protein	Grams of Substance	Yield of Glycerol from Fat
2.9	5	0.5
5.8	10	1.0
8.7	15	1.5
11.6	20	2.0
14.5	25	2.5
17.4	30	3.0
20.3	35	3.5
23.2	40	4.0
26.1	45	4.5
29.0	50	5.0
31.9	55	5.5
34.8	60	6.0
37.7	65	6.5
40.6	70	7.0
43.5	75	7.5
46.4	80	8.0
49.3	85	8.5
52.2	90	9.0
55.1	95	9.5
58.0	100	10.0
60.9	105	10.5
63.8	110	11.0
66.7	115	11.5
69.6	120	12.0
72.5	125	12.5
75.4	130	13.0
78.3	135	13.5
81.2	140	14.0
84.1	145	14.5
87.0	150	15.0
89.9	155	15.5
92.8	160	16.0
95.7	165	16.5
98.6	170	17.0
101.5	175	17.5
104.4	180	18.0
107.3	185	18.5
110.2	190	19.0
113.1	195	19.5
116.0	200	20.0

\* For use in determining the average glucose yield of protein figured at 0.58, and the glycerol yield of fat figured at 0.1.

(Total glucose tolerance is roughly the amount of glucose in the carbohydrate foods, plus 58 per cent. of the protein and 10 per cent. of the fat, minus the amount of glucose eliminated in the urine.) By referring to Table 1 it is found that a glucose tolerance of 120 gm. has a fatty acid equivalent of 180 gm. By referring to Table 2 the protein fraction of the diet can be determined on the basis of one or more grams per kilogram. If we wish to keep the protein fraction of the diet as low as possible consistent with nitrogen balance, we may prescribe 1 gm. per kilogram, which in this case would be 60. Referring to Table 3, we find that the left hand column gives the ketogenic acid yield of 60 gm. of protein as 27.6 gm. Deducting this amount from the total fatty acid tolerance of 180 gm., there is left a balance of 153 gm. which, by referring to the right hand column, is found to represent the amount of fatty acids in 170 gm. of food fat. Now, to determine the carbohydrate fraction, referring to Table 4, we find that 60 gm. of protein may yield 34.8 gm. of glucose, and that 170 gm. of food fat may yield 17 gm. of glucose from the glycerol contained in the fat. The total glucose obtained from these two sources is, therefore, 51.8 gm. The tolerance for glucose is 120 gm. Deducting 51.8 from 120, there is left a deficit of 68 gm., which must be supplied by carbohydrate foods. The diet would therefore consist of protein, 60 gm.; fat, 170 gm.; glucose, 68 gm., yielding 2,042 calories.

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# PREOPERATIVE TREATMENT FOR POSTOPERATIVE COMFORT

REPORT OF SYNERGISTIC ANESTHESIA

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It is our belief that a large amount of postoperative discomfort results from acidosis and traumatic shock. The operator is chiefly responsible for the latter, and with judicious care should be able to minimize this factor. Acidosis in various degrees is present in most postoperative cases.

Following all ether anesthetics, acetone bodies are found in the urine, while there is a decrease in the carbon dioxid combining power of the blood plasma showing a decreased alkali reserve and an early stage of acidosis.<sup>1</sup> Short,<sup>2</sup> reporting on a series of patients whose urine and blood were examined before and after operation, states that the acetone bodies increase and that the plasma bicarbonate decreases. Caldwell and Cleveland,<sup>3</sup> in a series of 100 cases, found acetone present in 23 per cent. and diacetic acid present in 13 per cent. before operation, while after operation the percentage was 72 per cent. and 50 per cent., respectively. Ross<sup>4</sup> gives 50 and 35 per cent. after operation. Austin and Jonas<sup>5</sup> determined the carbon dioxid combining capacity after ether anesthesia, and found a maximal decrease of 10 per cent. by volume, the lowest amount observed being 47 per cent. by volume. Cannon,<sup>6</sup> Morris<sup>7</sup> and Henderson<sup>8</sup> agree that there is a definite decrease in the alkali reserve.

Five years ago we followed closely the urinary findings in a series of laparotomies, and found acetone in

The urine in these cases was alkaline, and the amount of acetone bodies was reduced but not entirely eliminated. The general condition of the patient was improved, nausea being less and not one of the series showing severe acidosis. We were unable to check the carbon dioxid, but Morris<sup>7</sup> has reported a series of ten patients who received 150 grains (9.75 gm.) of sodium bicarbonate before operation, and a similar number who did not have any preliminary treatment and found the decrease of carbon dioxid combining capacity of the blood to compare 5.7 to 9 per cent. by volume.

Gwathmey<sup>9</sup> reported the use of synergists with colonic and nitrous oxid anesthetics. Instead of using

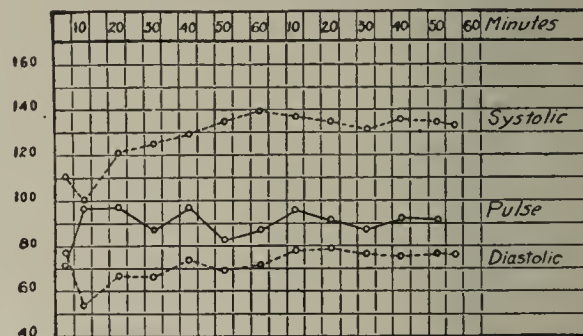


Chart 2.—Record of pulse and blood pressure in appendectomy Case 6, showing no marked variation or deleterious effect from the use of magnesium sulphate.

magnesium sulphate alone as Meltzer did, he combined pure Epsom salt with morphin and found that smaller doses were required to relieve pain, less anesthesia used and the postoperative condition in a large measure free of distress.

We have tried this synergistic method of Gwathmey together with preliminary alkaline treatment in a series of cases, using ether as the general anesthetic. The results have been so gratifying that we feel justified in reporting in detail.

Our technic consists of a preliminary alkaline treatment of sodium bicarbonate and lactose for several days before operation in order to have the patient thoroughly saturated with the carbonate. Immediate preoperative treatment is essentially that of Gwathmey,<sup>10</sup> which consists of a hypodermoclysis of a 4 per cent. chemically pure and sterile solution of magnesium sulphate, 200 c.c. given one and one-half hours before operation, and morphin sulphate, from  $\frac{1}{10}$  to  $\frac{1}{8}$  grain in 1.5 c.c. of a 25 per cent. chemically pure and sterile solution of the magnesium sulphate given at fifteen minute intervals for two or three doses, starting one and a quarter hours before operation. Gwathmey<sup>11</sup> has used as much as 400 c.c. in hypodermoclysis and given the morphin in from 1 to 2 c.c. solution. We used only 200 c.c. hypodermoclysis and 1.5 c.c. in the hypodermic. The patient is then kept in a darkened, quiet place, and very gently removed to the anesthetizing room, where the general anesthetic of ether by the drop method is commenced. The patient is practically in a state of analgesia and the excitement stage is nil. The pulse usually is slow at first, rising somewhat in the second stage, but returning to a lower rate during the operation.

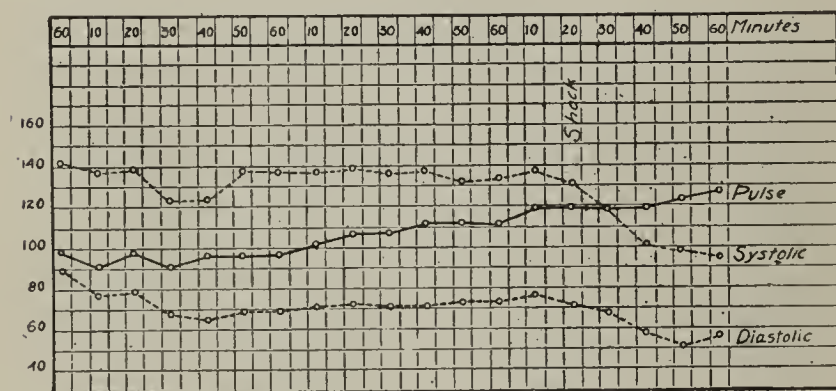


Chart 1.—Record of pulse and blood pressure in Case 1. Partial gastrectomy and postgastro-enterostomy, giving early indication of shock.

60 per cent. of the cases and diacetic acid in 25 per cent. for the first twenty-four hours after operation. A routine was inaugurated so that every patient when possible received sodium bicarbonate, 15 grains (1 gm.), and lactose, 5 grains (0.3 gm.), every four hours for six or eight doses before operation.

1. Reimann, S. P., and Bloom, G. H.: *J. Biol. Chem.* **36**: 211 (Oct.) 1918.
2. Short, J. J.: *J. Biol. Chem.* **41**: 503 (April) 1920.
3. Caldwell, G. A., and Cleveland, M.: *Surg., Gynec. & Obst.* **25**: 22 (July) 1917.
4. Ross, E. M.: *Canad. M. A. J.* **10**: 548 (June) 1920.
5. Austin, J. H., and Jonas, A. F.: *Am. J. M. Sc.* **153**: 81 (Jan.) 1917.
6. Cannon, W. B.: *Acidosis in Cases of Shock, Hemorrhage and Gas Infection*, *J. A. M. A.* **70**: 531 (Feb. 23) 1918.
7. Morris, W. H.: *The Prophylaxis of Anesthesia Acidosis*, *J. A. M. A.* **68**: 1391 (May 12) 1917.
8. Henderson, Yandell: *J. Biol. Chem.* **33**: 345 (Feb.) 1918.
9. Gwathmey, J. T.: *Synergistic Colonic Anesthesia*, *J. A. M. A.* **76**: 222 (Jan. 22) 1921.
10. Gwathmey, J. T.: *Current Progress in the Science and Practice of Anesthesia*, *J. A. M. A.* **77**: 421 (Aug. 6) 1921.
11. Gwathmey, J. T., and Greenough, J.: *Ann. Surg.* **74**: 185 (Aug.) 1921.



# REPORT OF CASES

CASE 1.—A large, robust man, aged 64, with carcinoma of the pylorus, underwent partial gastrectomy and posterior gastro-enterostomy. The duration in the operation was two hours, forty minutes; of the anesthetic, two hours, fifty minutes. Ether, 240 c.c. (8 fluidounces), was given. The average pulse was 110. The blood pressure at the start was: systolic, 142; diastolic, 90; at the first indication of shock: systolic, 138; diastolic, 78; at the end of the operation: systolic, 85; diastolic, 65 (Chart 1). There was no postoperative pain, nausea, vomiting or chill. The patient showed shock the last half hour of the operation. Relaxation was good. No morphin was given after the operation. There was no laxative effect, distention, excitement stage or abscess.

CASE 2.—A woman, aged 26, well nourished, with bilateral salpingitis, bilateral cystic ovary, pelvic adhesions, chronic endometritis and syphilis, suffered intense pain and was very apprehensive. She had had two previous anesthetics. She was accustomed to the use of morphin and other sedatives. The operation included dilation and curettage; bilateral salpingo-oophorectomy and release of adhesions. The duration of operation was one hour, forty-five minutes, of the anesthetic, one hour, thirty-five minutes. Ether, 225 c.c. (7½ fluidounces), was used. The average pulse was 100. The blood pressure showed a steady curve, with no sharp rise or fall. The effects were very good: good relaxation, no shock, no pain, nausea or vomiting, and no distention, laxative effects, abscess or excitement stage. The first sedative after operation was given in twenty-three hours (Chart 2).

TABLE 1.—CASES WITH SYNERGISTS \*

Number	Operation	Dura- tion H. M.	Ether Used, C.c.	Pre- opera- tive Mor- phin, Grain	Time of Post- opera- tive Sedative	Hypo- dermo- clysis	Nausea or Vomit- ing
1 (11768)	Partial gastrec- tomy; postgas- tro-enterostomy	3 ..	240	¾	None	H	None
2 (11593)	Bilateral salpingo- oophorectomy; release of pelvic adhesions; dila- tion and curet- tage	1 55	225	¾	23 hrs.†	H	None
3 (11684)	Herniotomy (re- current)	1 5	165	¼	None	H	None
4 (11617)	Oophorectomy; repair of intes- tine	2 ..	180	¾	None†	H	None
6 (11683)	Appendectomy....	.. 55	105	¾	None	..	None
7 (11930)	Appendectomy....	.. 30	75	½	None	..	None
8 (11959)	Appendectomy....	.. 45	120	¼	None	..	Slight
9 (11473)	Prostatectomy...	1 15	127	¾	None	H	None
10 (11564)	Cholecystectomy; appendectomy	1 45	195	¾	14 hrs.	H	Slight
11 (11692)	Cholecystectomy	1 20	195	¾	14 hrs.†	H	Slight
12 (11954)	Panhysterectomy	1 15	135	¼	None		
13 (11619)	Dilation and cu- rettage; trachelor- rhaphy; perineor- rhaphy; partial oophorectomy; bilat- eral salpingectomy	1 25	120	¾	16 hrs.	None	Slight
14 (11904)	Dilation and cu- rettage; trachelor- rhaphy; hemorrhoi- dectomy; bilateral salpingectomy; left oophorectomy; ventral suspension; appendec- tomy; release of adhesions	1 10	120	1	5 hrs. 17 hrs. 25 hrs.	None	None
15 (11642)	Cesarean section ..	50	180	1	8 hrs.	None	None
16 (11781)	Cesarean section	1 7	180	¾	18½ hrs. 5½ hrs.	None	None

\* Eight cases, no morphin after operation; ten cases, no vomiting or nausea; seven cases, sedative required. Average time for sedative: (a) morphin, 17 hours; (b) pantopon, 8½ hours. Average time for operation, 1 hour 21 minutes. Average amount of ether, 157 c.c. or 5¼ fluidounces.

† Patients accustomed to large doses of morphin preoperatively for pain.

CASE 3.—A stout woman, aged 31, with recurrent hernia, had had three previous anesthetics. This is a case of the same operation and the same patient (Table 2, Case 23). At the first operation for hernia, straight ether was used, and the patient was nauseated and vomited for three days. Hernia recurred from the effects of vomiting. Four postoperative hypodermics of morphin were necessary to relieve pain. Dis-

tention and gas pains were very severe for four days. The second operation for recurrent hernia was performed with the Gwathmey technic. The pulse during operation was 84. Ether, 165 c.c. (5½ fluidounces) was given. The effects were good; relaxation was good; there was slight regurgitation of mucus. There was no distention, gas pains, postoperative vomiting, laxative effects or abscess.

TABLE 2.—CASES WITHOUT SYNERGISTS \*

Number	Operation	Dura- tion H. M.	Ether Used, C.c.	Pre- opera- tive Mor- phin, Grain	Time of Post- opera- tive Sedative	Vomit	Pulse
17 (10871)	Appendectomy....	.. 48	210	¼	6 hrs.	+	130
18 (10902)	Appendectomy....	.. 45	270	¼	1½ hrs.	+	114
19 (10917)	Appendectomy....	1 10	240	¼	4 hrs.	+	96
20 (10961)	Appendectomy....	1 5	180	¼	None	+	90
21 (11048)	Cholecystectomy; appendectomy	1 45	330	¼	6 hrs.	++	144
22 ( 1725)	Cholecystectomy; appendectomy	1 15	210	¼	6 hrs.	+	
23 ( 9084)	Herniotomy.....	1 30	240	¼	2,† 5, 8, 11 hrs.	++	120
24 ( 2242)	Herniotomy.....	.. 55	180	¼	9 hrs.	+	90
25 (11882)	Hysterectomy....	1 30	240	¼	6 hrs.	++	120
26 (11102)	Bilateral salpingo- oophorectomy; dila- tion and curettage; perineorrhaphy; re- section cystic ovary, right	1 50	300	¾ pan- topon	4 hrs.	None	120
27 (10886)	Dilation and cu- rettage; hemorrhoi- dectomy; trachelor- rhaphy; bilateral salpingectomy; Baldy-Webster suspension	1 55	225	¼	1½ hrs.	+	113
28 (10925)	Bilateral salpingo- oophorectomy; ven- tral suspension; re- lease of adhesions	1 35	300	¼	6 hrs.	Nausea	102
29 ( 1859)	Same as 28.....	1 40	270	¼	5 hrs.	+	

\* Average time of next sedative, 5½ hours; average amount of ether, 246.5 c.c. (8¼ ounces). Average time for operation, 1 hour 22 minutes.  
† Same patient; same operation; same operator (Table 1, Case 3).

CASE 4.—A robust woman, aged 26, with a cystic right ovary, had had three previous laparotomies with stormy postoperative periods. She was apprehensive. She was accustomed to large doses of morphin. Oophorectomy was performed with repair of the sigmoid. The pulse averaged 85. The duration of the anesthetic was one hour, thirty minutes, and of the operation, one hour, thirty-five minutes. Ether, 180 c.c. (6 fluidounces), was used. The effects were very good. Relaxation was good, and there was no shock, pain, nausea, vomiting or distention. The next sedative was given after fifteen and one-half hours. Water was given on request with no detrimental results.

CASE 5 (11933).—A robust girl, aged 15, with acute appendicitis, underwent appendectomy. Ether, 75 c.c. (2½ fluidounces). No hypodermoclysis was employed. Before the operation, two doses of morphin, ¼<sub>10</sub> grain (6.5 mg.), with magnesium sulphate were given. The results were good; excellent relaxation, and no pain, shock, nausea, vomiting, distention or gas pains. In simple appendectomies we have found that the hypodermoclysis may easily be omitted.

## COMPARISON OF RESULTS

In comparing the tables we find these advantageous results:

1. The synergistic effect of magnesium sulphate with the preoperative morphin tends to prolong the sedative action to such an extent that rarely is it necessary to give morphin postoperatively.
2. There is very little paresis of the intestine, and there are less acidosis and nausea, with vomiting practically eliminated except when the gallbladder has been emptied or removed.
3. The synergistic analgesia is prolonged to a greater extent by the use of morphin than with pantopon.
4. The amount of ether used is lessened, thus reducing to a minimum bronchial and renal irritation, and causing less acidosis.



5. There are no distention and no gas pain.

6. There have been no deleterious results, such as abscess, necrosis of tissue or laxative effect.

With the alkaline synergistic method the postoperative condition is entirely altered. There is an absence of gas and wound pains and no distention, which with subsequent improved appetite and lessened mental depression makes convalescence shorter and more agreeable.

## ABDOMINAL MIGRAINE

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CHICAGO

Abdominal migraine is not mentioned in most books on gastro-enterology and may easily be overlooked unless this disease is kept in mind when the physician is confronted with a case of functional epigastralgia. Even neurologic textbooks mention but a few cases. The condition is not, however, as rare as one might suppose.

Only recently has the close relation between certain forms of periodic epigastralgia and head migraine been pointed out.<sup>1</sup> A few writers have expressed the opinion that this type of abdominal pain is simply another form in which migraine may manifest itself; others have reported cases in which this epigastralgia was distinctly a temporary and vicarious substitute for the usual form of head migraine.

The present study is based on a consideration of twenty-two cases seen at the polyclinic of Dr. Paul Cohnheim of Berlin. All precautions were taken to exclude every kind of organic disease of the nervous system or abdomen, and most of the cases have been under observation for a number of years.

This type of epigastralgia is distinguished by periodicity, often coming on with almost mathematical regularity; the intervals between attacks are symptomless; there is a history of migraine in either the patient or his family, and there are no evidences of organic diseases, such as tabes, gallstones, pancreatic disease or subdiaphragmatic angina pectoris, even after careful and prolonged observation over a number of years. Improvement was noted in many of the cases after antimigraine treatment when other measures were without result.

The cases cannot be classified in any of the groups described as neuralgia of the celiac plexus, vagus or sympathetic systems as described by several authors.<sup>2</sup>

Abdominal migraine may manifest itself in three forms:

1. The ordinary type, in which the epigastralgia is accompanied by head migraine or appears as the only symptom of migraine disease.

2. The vicarious type, in which typical head migraine alone has existed up to a certain time; after which, the abdominal migraine appeared and remained as the only manifestation of migraine disease. Cases have been reported in which the cephalic migraine returned

after a year or two, but the vicarious, abdominal form disappeared on the return of the head migraine.<sup>3</sup> Cases have also been described in which the attacks of abdominal and head migraine alternated, the one form not manifesting itself while the other was present. This kind of cases was described by Ortner,<sup>1</sup> Schmidt<sup>1</sup> and Bordoni.<sup>4</sup>

3. The larval or irregular type, in which the periodic attacks consist of vomiting, etc., while the epigastralgia is less marked.

The individual attacks are much alike in the first two groups. They will, therefore, be described together. The typical attack begins abruptly; recurs at definite intervals, generally every four to six weeks; lasts three or four days, and ends as abruptly as it began. The interval between attacks is free from all symptoms. The first group makes its first appearance at about 18 years of age, the vicarious form usually at the menopause, while no definite age was noted in the larval group. Eighteen of the twenty-two cases were in women.

The attack consists usually of a severe, cutting or boring epigastralgia which is independent of and uninfluenced by food and which may radiate in any direction, but is usually limited to the epigastrium. The vomiting is chiefly of bile and mucus, and has no influence on the pain. Constipation is common, but diarrhea is not at all infrequent during an attack. The typical form of head migraine may or may not accompany the attack in the first form. Fever and other signs of infection are absent. There seems to be no definite cause for the appearance of an attack, such as a dietetic error. Most of the patients had anorexia and nausea during the attack, but were perfectly well during the intervals.

Physical examination revealed no definite or constant findings except, perhaps, increased knee reflexes and evidences of a neurotic constitution. The examination of the stomach contents showed nothing abnormal except an occasional subacidity. This seems to be in contrast to the findings of Fenwick<sup>5</sup> and others in some of the cases classified as larval or irregular abdominal migraine, in which a periodic hyperacidity was found at the time of the attack, with return to normal during the intervals. As already mentioned, antimigraine treatment influenced the course and individual attacks favorably. Case 1 illustrates the type of the first group:

CASE 1.—J. U., a man, aged 32, hatmaker, admitted, June 4, 1914, had been ill for six months previous to admission, with periodic attacks of severe epigastric pains accompanied by vomiting and mild constipation. Severe head migraine appeared on the second day of the attack. The attacks occurred every four weeks, and lasted from one to four days; the intervals between attacks were free from all disturbances. There were no dietetic errors or other known cause for the appearance of the attacks. The examination detected nothing of importance; the test breakfast revealed a slight subacidity with a total acidity of 40. The Wassermann reaction was negative. Improvement occurred under antimigraine treatment.

The attacks in the vicarious group show no great difference from those already described. This type occurs most frequently at the time of the menopause

1. Mohr and Staehlin: *Handbuch der inneren Medizin* 5. Oppenheim, H.: *Lehrbuch der Nervenkrankheiten*. Schmidt, A.: *Klinik der Darmkrankheiten*, 1921. Flatau, E.: *Die Migräne*, Gesamtgeb. d. Neurol. u. Psychiat., 1912. Ortner, N.: *Klinische Symptomatologie inneren Krankheiten* 1. Curschmann: *Deutsch. Ztschr. f. Nerven.* 54, 1915.

2. Moutier, F.: *Arch. d. mal. de l'app. digestif*, 10, No. 8. Leriche, R.: *Lyon chir.* 11, No. 2. Hoffmann, F. A.: *München. med. Wehnschr.*, 1902, No. 7. Von Leyden, E.: *Ztschr. f. klin. Med.*, 1882, p. 605.

3. Bary, A.: *Neurol. Zentralbl.*, 1895. Mendel, E.: *Deutsch. med. Wehnschr.*, 1906, No. 20. Liveing, Robert: *Migraine, Sick Headache and Some Allied Disorders*, London, 1873. Curschmann, H.: *München. med. Wehnschr.*, 1921, No. 24; *Deutsch. Ztschr. f. Nerven.* 54, 1915.

4. Bordoni, L.: *Rif. med.* 14: 100, 1898.

5. Fenwick, S.: *Lancet*, Jan. 8, 1898.



in women who have previously suffered from typical attacks of cephalic migraine. Case 2 is illustrative of this form:

CASE 2.—A. M., a woman, aged 39, housewife, admitted, March 30, 1914, for four months had had periodic attacks of severe epigastric pains with nausea and vomiting of a watery substance which lasted several hours and came without apparent cause. She had three bowel movements daily at the time of the attack. She had severe head migraine formerly, but this had not been present since the time that the periodic attacks of epigastralgia had appeared. She was treated for gastric ulcer without result. The examination revealed nothing except a hyperesthesia of the skin of the epigastrium.

Another type of vicarious abdominal migraine is well seen in a case described by Ortnier:

A man, aged 30, complained of attacks of colicky pain in the liver region. The attacks of typical head migraine alternated with attacks of migraine in the liver region. The two did not appear during the same attack. There was a distinct history of migraine in the patient's family. There was no urobilin or urobilinogen in the urine, no findings on palpation, such as tenderness or enlargement of the liver or gallbladder, and no hyperesthesia of the skin over the painful area. Chills and fever were absent. The vomiting appeared at the end of the attack, in contrast to the early vomiting in cholelithiasis, and relief was obtained after the use of antimigraine treatment.

The irregular or larval group consists of several different types. There was only one case in this series, but various authors have described cases in which the attacks consisted chiefly of periodic spells of ravenous hunger, attacks of nausea and vomiting,<sup>6</sup> and periodic hypersecretion with epigastralgia and hyperacidity as described by Rossbach under the name of gastroxynsis.<sup>7</sup>

In view of the fact that in many of the cases in women there are accompanying disorders in the pelvis, and that the vicarious form appears chiefly at the time of the menopause, it is suggested that a course of therapy with ovarian extract be tried out in addition to the usual migraine treatment. In passing, it may be mentioned that the prognosis seems to be that of migraine in general, as none of the patients who have been under observation for a long time have shown any serious effects of the disease.

There seems to be considerable doubt as to the seat of the pain; but, according to the most recent views, we are led to believe that the epigastralgia in these cases arises in the celiac plexus and its branches.<sup>8</sup> There is little reason to believe that the periodic dilatation of the stomach which was observed by Mangelsdorf<sup>9</sup> during attacks of migraine has any real share in the causation of the pain.

#### SUMMARY

1. Abdominal migraine occurs chiefly in those who suffer from typical head migraine or when there is a history of this disease in the family.

2. The disease manifests itself by periodic attacks of epigastralgia with nausea and vomiting of bile and mucus, and occasionally with diarrhea. Physical examination reveals no definite signs of any kind. The patient is free from all symptoms during the intervals

between attacks. The attacks last a few days, and begin and end rather abruptly.

3. The disease is refractive to all treatment, but is favorably influenced by antimigraine therapy. In view of the frequent presence of disturbances in the female pelvis, it is suggested that a course of ovarian extract be tried in these cases in addition to the regular arsenic and antimigraine measures.

## SPONTANEOUS LABOR IN A CASE OF DECENTRALIZED UTERUS\*

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It is traditionally known that pregnancy and labor can occur in women with transverse lesions of the spinal cord, although a careful search of the literature fails to reveal a well authenticated case. The report of a case seems permissible because of its rarity and physiologic interest.

The autonomic<sup>1</sup> character of certain portions of the central nervous system and the innervation of viscera by this mechanism have long been of the greatest physiologic interest. Much has been added to our knowledge by the study of spinal cord injuries received in the late war, especially by the work of Head and Riddock.<sup>2</sup> The observations which they made were largely confirmatory of earlier experiments on animals. Thus, their descriptions of the "automatic bladder" as observed in man are much the same as described in 1896 by Goltz and Ewald<sup>3</sup> by the term "spontaneous micturition," after section of the spinal cord of the dog.

In view of the stimulus produced by these recent studies, it is of interest to report a case of pregnancy with normal and spontaneous labor occurring in a woman with a decentralized uterus due to spinal cord disease. It has long been known that the uterus is an autonomic organ. As early as 1874, it was shown experimentally by Goltz<sup>4</sup> that normal pregnancy and labor occurred in the dog after complete division of the cord.

A subject of much dispute, leading to careful experimental study, is the nerve mechanism of the bladder and uterus. A masterly review of the literature and a report of his own experiments on the nerve supply of the bladder has recently been made by Fearnside.<sup>5</sup> He concluded that afferent impulses from the bladder travel chiefly through the pelvic nerves, but to some extent through the hypogastric nerves. He believes that it is now absolutely certain that the bladder is supplied by two sets of efferent nerves. The first set are derived from the lowest thoracic and upper lumbar nerve roots. They send their fibers, by way of the white rami communicantes and the lumbar or inferior

\* From the Surgical Service, Peter Bent Brigham Hospital.

1. Langley: On the Union of Cranial Autonomic (Visceral) Fibers with the Nerve Cells of the Superior Cervical Ganglion, *J. Physiol.*, 1898. "The word implies a certain degree of independent action, but exercised under control of a higher power. The 'autonomic' nervous system means the nervous system of glands and of the involuntary muscle; it governs the 'organic' functions of the body."

2. Head and Riddock: The Automatic Bladder, Excessive Sweating and Some Other Reflex Conditions, in *Gross Injuries of the Spinal Cord*, *Brain* 40:188, 1917. The Reflex Functions of the Completely Divided Spinal Cord in Man, Compared with Those Associated with Less Severe Lesions, *Brain* 40:264, 1917.

3. Goltz and Ewald: *Arch. f. d. ges. Physiol. (Pflüger's)* 73:362, 1896.

4. Goltz: Ueber den Einfluss des Nervensystems auf die Vorgänge während der Schwangerschaft und des Geburts, *Arch. f. d. ges. Physiol. (Pflüger's)* 9, 1874.

5. Fearnside: The Innervation of the Bladder and Urethra, *Brain* 40:149, 1917.

6. Kuttner, L.: *Med. Klin.* 8, No. 20; *Therap. d. Gegenw.*, 1912, pp. 4-10, 57-63.

7. Rossbach, M. J.: *Arch. f. klin. Med.* 35:383. Möbius in *Nothnagel: Spezielle Pathologie und Therapie* 12:2.

8. Buch, M.: *Arch. f. Verdauungskr.*, 1901, p. 555.

9. Mangelsdorf: *Berl. klin. Wchnschr.*, 1903, No. 44.



splanchnic nerves, to the lumbar portion of the colateral sympathetic chain of ganglions. They join the inferior mesenteric ganglions and, finally, by way of the hypogastric nerves, reach the hypogastric plexus of the bladder. The second set of nerves to the bladder originate in the roots of the sacral nerves. From these roots two branches are given off, known as the nervi erigentes (Eckhard), the pelvic splanchnics (Gaskell) or the pelvic nerves (Langley), which run to the vesical part of the hypogastric plexus and so supply the unstriated muscle of the bladder, urethra and corpora cavernosa, while the two pudic nerves form the motor path to the striped voluntary muscle of the urethra. Fearnside found that stimulation of the pelvic nerves caused contraction of the bladder, followed immediately by relaxation. In some animals, such excitation led to inhibition of the sphincter muscle at the neck of the bladder and of the unstriated muscle surrounding the urethra, with consequent dilatation of the urethra. Stimulation of the hypogastric nerves caused "a constriction of the unstriated muscle of the urethra and a contraction of the muscle at the base of the bladder, with or without a concomitant contraction or relaxation of the rest of the bladder."

The nerve mechanism of the uterus has long been a subject of dispute among investigators. Gaskell,<sup>6</sup> in 1886, wrote:

The uterus is supplied with two sets of nerves, the nervi uterini, which reach the uterus by way of the main sympathetic and hypogastric nerves and therefore belong to the abdominal splanchnics, and the nervi uterini sacrales, which pass free from the main sympathetic chain and belong to the pelvic splanchnics. Further, according to von Basch and Hofmann, stimulation of the hypogastric nerves causes a contraction of the circular muscles of the uterus, while stimulation of the cerebrospinal nerves causes the longitudinal muscles to contract.

There is much difference of opinion as to the effect of the sacral nerves. Frankenhauser<sup>7</sup> at first considered that they had an inhibitory action, but later withdrew this opinion. Langley and Anderson<sup>8</sup> carried out repeated experiments on the rabbit and cat, which showed that the uterus and vagina are supplied by fibers which pass out through the anterior roots of the second, third, fourth and fifth lumbar nerves, and run through the sympathetic to the inferior mesenteric ganglions, whence they proceed by the hypogastric nerves. They found that the lumbar nerves caused contraction of the small arteries, leading to pallor of the organ, and contraction of the whole musculature. The uterus and vagina became fatigued on frequent stimulation sooner than any other organs; hence, the longer the stimulus is applied, the longer should be the interval between stimulations.

Stimulation of the sacral nerves, or the pelvic nerve near its origin, has no direct effect on the uterus or vagina. Nor do the sacral nerves have an inhibitory effect, for their stimulation does not modify rhythmic uterine contractions nor cause elongation or flabbiness of the organ.

#### REPORT OF CASE

*History.*—E. M. (14325), an Italian housewife, aged 35, entered the hospital, April 8, 1921, complaining of paralysis of the legs. Her family and personal history were essentially

negative. She had been married nine years. Her husband and three children were living and well. There had been no miscarriages and no stillbirths. Aside from the diseases of childhood, she had had no serious illness. Syphilis and gonorrhea were denied. Menstruation began at the age of 13, and the periods were regular in duration, with no abnormalities. The patient was well until a year before admission, at which time she had influenza. At this time she was sick for a week, but about a month later she noticed knifelike pains, which occurred through the shoulders whenever she moved any part of her body. The pain gradually became a steady ache, which persisted for six months. Five months before admission, the pain disappeared, but she noticed weakness of the arms and legs. She found that she could no longer sew because she did not have strength in the fingers to hold the needle. When she tried to walk, the knees were weak and shaky. She had some slight pains in the arms, particularly on the outer part and in the outer two fingers of both hands. The weakness continued to increase; and the patient found that she was pregnant. Three months before admission a lump appeared in the left side of the neck. This gradually increased in size. Three weeks before admission, the patient's weakness forced her to go to bed. Paralysis of the legs had been complete since that time. The two inner fingers of both hands now felt numb, especially at night. She slept poorly and felt as if her legs were "flying away from her." She had frequent drenching sweats of the neck and head, especially at night. At times during the month before admission she had gone for from twenty-four to forty-eight hours without voiding.

*Physical Examination.*—The patient was well developed and rather poorly nourished. She lay quietly in bed, in no apparent distress. There was pain on pressure, which radiated from the seventh cervical vertebra to the base of the skull, but with no rigidity of the neck. On the left side of the neck, there was a fluctuating mass 8 by 4 cm. ( $3\frac{3}{8}$  by  $1\frac{1}{16}$  inches), not tense nor painful to pressure, and not limiting motion on that side. The abdomen was protuberant, and what appeared to be the fundus of the uterus reached a little above the umbilicus. Fetal heart sounds could be heard on the left side, and fetal parts were definitely made out. Vaginal examination revealed a soft cervix, and the uterus, reaching to the umbilicus, could be bimanually palpated.

*Neurologic Examination.*—Examination of the cranial nerves was entirely negative. There was no evidence of any cerebral or cerebellar involvement. Examination of the motor nerves revealed that the patient was able to move both hands and arms without difficulty, but the grip was very weak in both hands, particularly of the ulnar fingers. Respirations were of the diaphragmatic character, and the patient was not able to move her abdominal muscles. Both lower extremities were flaccid and could not be moved by the patient. Examination of the sensory nerves revealed that, from the level of the seventh cervical vertebra to Poupart's ligament on either side, the skin was hypesthetic. There was marked hypesthesia of the thighs and legs. In the region around the vulva supplied by the fourth and fifth sacral segments there was normal sensation. The region of the inner side of both arms supplied by the eighth cervical and first dorsal segments showed marked hypesthesia. Sensation of change of temperature was decreased from the seventh cervical vertebra to Poupart's ligament, and over both lower extremities. Muscle sense in both lower extremities was entirely absent.

All the deep reflexes were exaggerated. There was a definite bilateral ankle and patellar clonus, and a positive Babinski reaction. The upper and lower abdominals and the epigastric reflexes were absent.

On admission there was no incontinence of urine or of feces.

Vasomotor response was not obtained over the abdomen, although the legs flushed and were moist.

*Subsequent Course.*—On admission, films of the cervical spine and dorsal vertebrae showed no evidence of any bony changes. April 10, a combined cistern-lumbar puncture was made by Dr. James B. Ayer, and a complete block in the spinal cord was demonstrated. April 15, the swelling in the neck was tapped, and 5 c.c. of a thick yellowish-green fluid was withdrawn. Smears showed polymorphonuclears and lymphocytes. No organisms were found, and cultures were negative. The following day the tumor was tapped again; air was

6. Gaskell: On the Structure, Distribution and Function of the Nerves Which Innervate the Visceral and Vascular Systems, *J. Physiol.* 7: 1, 1886.

7. Frankenhauser: Die Nerven der Gebärmutter, Jena, 1867.

8. Langley and Anderson: The Innervation of the Pelvic and Adjoining Viscera, *J. Physiol.* 19: 71, 1896.



injected, and roentgenograms were made. Stereoscopic plates revealed that the air lay between the muscle planes on the lateral aspect. There was no evidence of destruction of any of the vertebrae. April 20, under local anesthesia, exploration of the tumor on the left side of the neck was made. A large cyst filled with greenish-yellow, purulent material was revealed. No connection with the spine could be demonstrated. The contents were evacuated and the cyst wall was partially removed. A guinea-pig was inoculated and sections were made of the lining of the cyst wall. The wound in the neck healed well, with the exception of a small persistent sinus. At this time, the patient began to have a slight elevation of afternoon temperature two or three days a week. May 16, roentgen-ray examination was repeated, and the cervical spine for the first time showed a destructive process taking place in the sixth cervical vertebra. Examination of the pig injected with the contents of the cyst revealed tuberculosis. The patient showed evidence of consolidation of the right side, and roentgenograms, made on May 23 disclosed a bronchopneumonic process, extensive and bilateral. The density indicated a tuberculous pneumonia.

Pregnancy continued without any abnormality, and it was believed that the patient was near full term. Dr. F. S. Newell saw the patient in consultation and, believing that the case was hopeless from the point of view of the mother, advised continuing the pregnancy for the sake of the child. May 28, spontaneous labor occurred. The patient suffered practically no pain. The uterine contractions came every five to ten minutes and lasted from thirty to forty seconds, gradually increasing in frequency and intensity. Two hours after the onset of labor the patient was delivered of a baby girl, weighing 6 pounds (2.7 kg.), which breathed immediately and cried vigorously. The position was occipitoposterior. The patient had some pain during the second stage of labor. The force which caused the expulsion of the child appeared to be wholly uterine and there were no bearing down efforts on the part of the patient. Following delivery, interesting observations were made on the reflexes of the bladder. After retention for from six to eight hours, the patient would void and apparently empty the bladder without any sensation or knowledge of the act. During this period, loss of sensation over the whole body, from the seventh cervical vertebra down, became complete, including the region of the vulva, which on admission had shown practically normal sensation. The bilateral Babinski sign became more marked, and on stroking the sole of either foot there was a spontaneous flexion of the thigh and leg. For a few days after delivery, the patient appeared to be in better physical condition, but on the third day there was a sudden change for the worse, and death occurred the ninth day, from a diffuse tuberculous pneumonia.

#### COMMENT

The final explanation for the occurrence of normal labor after a fixed interval is unknown.<sup>9</sup> Menstrual periodicity, distention of the uterus, heredity, excess of carbon dioxide in the maternal blood and other factors have been advanced from time to time. The most probable explanation seems to be that some substance gains access to the circulation, and directly or indirectly stimulates the uterus to contraction.

Krueger and Affergeld<sup>10</sup> found that, in a dog's uterus separated from all connection with the central nervous system, pregnancy advanced to full term and labor occurred spontaneously. The present case is somewhat analogous, in that a woman with an almost complete transverse spinal lesion at the seventh cervical segment went through normal labor. The slight pain accompanying labor was undoubtedly due to an incomplete lesion.

It was noted that there were periods during which this patient went for from twenty-four to forty-eight hours without voiding. Retention was followed, on

entry to the hospital, by apparently normal micturition. As the disease advanced and cerebral control was lost, the bladder emptied itself automatically without the patient's being aware of the passage of urine. The deep reflexes (patellar, etc.) were exaggerated; there was a patellar and ankle clonus, and Babinski reaction.

In 1890, Bastian<sup>11</sup> stated that, when "spinal function was liberated from cerebral control," there was a flaccid paralysis with an absence of knee jerks, and complete sensory loss. This condition of "spinal shock" was noted by Head and Riddock<sup>2</sup> in their cases, but they further observed that following the "stage of flaccidity" there ensued a stage of "reflex activity," with return of muscle tone, the establishment of the "automatic bladder" and exaggerated reflexes. In a case like the one reported, the slow progress of the disease caused no symptoms of "spinal shock," but a gradual progression to a stage analogous to the spinal animal, with increased reflex activity.

The patient had drenching sweats of head and neck, and a vasomotor reaction of flushing with sweating was obtained over the lower limbs. The sweating above the lesion is explained from the anatomic distribution of the autonomic nerves, for the preganglionic fibers, after leaving the cord, ascend in the sympathetic chain to the stellate ganglion. Thus, according to Head and Riddock,<sup>2</sup> "in patients in whom cord transection is above the tenth dorsal segmental level, sweating will occur, not only from the skin of the paralyzed parts, but also above the upper level of lost sensibility."

#### CONCLUSION

1. In a case of cervical Pott's disease, with an almost complete transverse lesion of the seventh cervical segment, pregnancy went to full term, when normal and almost painless labor occurred.

2. Cases of this kind serve to place the uterus among the autonomic organs of the body and indicate that the initial stimulus to labor originates by some other mechanism than cerebral control.

## THE CURE OF INFANTILE RICKETS BY SUNLIGHT

ACCOMPANIED BY AN INCREASE IN THE INORGANIC PHOSPHATE OF THE BLOOD\*

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AND

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It has been shown in preliminary communications<sup>1</sup> that infantile rickets can be cured by frequent exposures to the sun's rays; that although the diet remains unchanged, the rachitic lesions, as seen under the roentgen ray, disappear in the course of a month or six weeks, if infants are given almost daily sun treatment for from one-half to one hour. The results do not imply that there is no relation between the occurrence of rickets and diet, but they certainly must be interpreted as showing that hygienic factors, more par-

11. Bastian: On the Symptomatology of Total Transverse Lesions of the Spinal Cord, *Med. Chir. Tr.* 73:151, 1890.

\* Read before the Society of Experimental Biology and Medicine, Oct. 19, 1921.

\* From the Department of Pathology, Columbia University College of Physicians and Surgeons.

1. Hess, A. F., and Unger, L. J.: *Proc. Soc. Exper. Biol. & Med.* 18:298, 1921; *The Cure of Infantile Rickets by Sunlight*, J. A. M. A. 77:39 (July 2) 1921.

9. Hippocrates explained the onset of labor by hunger of the fetus.  
10. Krueger and Affergeld: *Der Vorgang von Zeugung, Schwangerschaft, Geburt und Wochenbett an der Ausgeschalteten Gebärmutter*, *Arch. f. Gynäk.* 83:257, 1907.



ticularly sunlight, are concerned in the etiology of this important nutritional disorder.

More recently, animal experiments carried out in this laboratory,<sup>2</sup> and, independently, elsewhere,<sup>3</sup> have confirmed these clinical observations of the curative process of heliotherapy. The experiments demonstrated that when rats were fed on a standard diet, rickets would be either prevented or brought about, according to whether the animals were subjected for a short period to the sun's rays, or at all times kept in the dark. The rats which we employed were fed on the diet described by Sherman and Pappenheimer,<sup>4</sup>

inorganic phosphate, as carried out by this method, are remarkably constant, as will be seen in Table 1. The normal figure is about 4 mg. phosphorus (present as inorganic phosphate) per hundred cubic centimeters of blood. However, the accuracy of this method for the determination of acid-soluble phosphorus seems questionable. We, therefore, omit all figures on this factor.

TREATMENT

The infants were placed in the direct sunlight for from one-half hour to several hours, the period varying according to the sun's intensity, the clemency of the weather, and the sensitiveness of the baby. It is necessary that the sunlight be direct, and not transmitted through clothing or through the window glass; otherwise it loses the greater part of its curative potency, as the result of filtering out the effective rays. As has been stated in a previous communication, such treatment cannot be carried out in a routine manner, but must be varied according to the condition of the babies, some of whom are far more sensitive to sunlight than others. At all times, care was taken that the infants were warm. It was found quite sufficient to expose the arms and legs, although it is preferable, when the temperature permits, to expose the trunk as well.

Previous to treatment, the majority of infants showed the clinical symptoms of mild rickets, characterized by beading of the ribs, and the characteristic changes in the epiphyses as seen by roentgen-ray examination. All the children were receiving the customary milk mixtures and orange juice, the older ones getting cereal in addition. Reliance was not placed entirely on the roentgen-ray examination of the bones, as it has been our experience that infants may manifest the classical signs of rickets, accompanied by a low inorganic phosphate of the blood, and, nevertheless, show normal bony contours at the wrists and other joints.

In every instance in which heliotherapy was employed, the rachitic signs diminished, as was demonstrated clinically and by roentgen ray, and the general condition improved. Table 2 records the

TABLE 1.—BLOOD PHOSPHORUS IN NORMAL INFANTS

Patient	Age, Mos.	Mg. Phosphorus per 100 C.c. Blood		Patient	Age, Mos.	Mg. Phosphorus per 100 C.c. Blood	
		Inorganic	Total			Inorganic	Total
M. K. ....	6	4.40		P. D. ....	10	4.48	45.8
B. S. ....	3	4.33	38.3	S. D. ....	10	4.31	46.3
F. M. ....	15	4.60	41.6	B. M. ....	12	4.60	53.5
B. S. ....	3	4.42	56.8	A. M. ....	11	4.76	37.8
H. H. ....	11	4.80	43.0	H. M. ....	7	4.10	62.8
G. H. ....	8	4.69	34.4	B. F. ....	6	4.00	
M. D. ....	4	4.65	37.5	A. R. ....	13	4.44	52.5
J. F. ....	18	4.44	49.6	D. B. ....	9	4.17	39.4
B. R. ....	11	4.39	43.6	H. R. ....	13	4.61	40.5
W. L. ....	8	4.10	67.1	S. F. ....	6	4.00	
J. R. ....	6	4.10	63.5	H. B. ....	9	4.40	
B. B. ....	6	4.05		L. S. ....	12	4.00	
A. S. ....	6	4.25	54.7	S. B. ....	14	4.80	
A. A. ....	2	4.17	35.0	M. G. ....	5	4.34	
M. C. ....	11	4.14		T. L. ....	20	4.04	
T. S. ....	10	4.20	41.4	F. B. ....	16	4.13	

which, in this laboratory, has led, in every instance, to the development of rickets. The experience of Huld-schinsky<sup>5</sup> and others,<sup>6</sup> as well as our own, with rays produced by the mercury vapor quartz lamp, makes it probable that the ultraviolet radiations play a large rôle in the curative power of the sun. The present report of the efficacy of sunlight adds substantiation of a definite chemical nature to clinical observations, and to the experimental evidence to which we have referred.

In a recent article, Howland and Kramer<sup>7</sup> have shown that the serum of infants suffering from active rickets contains a diminished amount of inorganic phosphate and that during the process of healing following the administration of cod liver oil, the phosphate content gradually rises to the normal level. In view of the marked clinical improvement which was noted following heliotherapy, it seemed of interest to ascertain whether this procedure led to a change in the level of blood phosphate. In this way, a further and perhaps more convincing substantiation of our results could be furnished. For this purpose, the rapid colorimetric method of Bell and Doisy<sup>8</sup> was used, in which the color is developed in protein free filtrates through the reduction of phosphomolybdic acid by hydrochinon in alkaline sulphite solution. It was found important to use a minimum quantity of oxalate. Special attention was paid to the inorganic phosphate of the blood, although in many instances the so-called acid-soluble and total phosphorus were also estimated. The figures for the

TABLE 2.—BLOOD PHOSPHORUS OF RACHITIC INFANTS TREATED WITH SUNLIGHT

Patient	Age, Mos.	Inorganic Phosphorus					Acid Solu-ble*	Total*
		6/22	7/21	8/11	9/16	10/18		
F. R. ....	7	2.80	3.75	4.14	4.13	....	15.7	43.6
P. F. ....	5	3.7	3.4	4.16	4.22	....	23.0	41.0
I. A. ....	13	2.77	2.75	3.53	4.00	....	15.2	43.6
M. L. ....	8	3.1	3.18	3.75	4.28	....	15.0	36.0
R. M. ....	15	3.0	3.02	3.16	3.87	....	14.5	44.6
C. M. ....	37	3.4	....	....	3.77	4.3	19.3	52.0
T. M. ....	7	3.0	....	....	3.9	4.0	16.6	38.5

\* Analyses made with blood used for the first inorganic phosphorus determination.

successive examinations of the blood of these infants, and requires but little interpretation. It will be seen that the inorganic phosphate of the blood of the rachitic infants decreased from month to month, starting generally below 3.5 mg. per hundred cubic centimeters of blood, and gradually being restored to the normal level of about 4 mg. This result is similar to that which has been attained by means of cod liver oil, which must be considered a specific for this disorder. Little can be stated at present regarding the determinations of the "acid-soluble" and the total phosphorus, as these figures were not sufficiently constant to warrant deductions.

2. Hess, A. F., and Unger, L. J.: Proc. Soc. Exper. Biol. & Med. **19**: 8, 1921.

3. Shipley, P. G.; Park, E. A.; Powers, G. F.; McCollum, E. V., and Simmonds, N.: Proc. Soc. Exper. Biol. & Med. **19**: 43, 1921.

4. Sherman, H. C., and Pappenheimer, A. M.: J. Exper. M. **34**: 189 (Aug.) 1921.

5. Huld-schinsky, K.: Ztschr. f. orthop. Chir. **39**, 1920.

6. Putzig, H.: Therap. Halbmonatsh. **34**: 234 (April 15) 1920.

Riedel, G.: München. med. Wchnschr. **67**: 838 (July 16) 1920.

Erlacher, P.: Wien. klin. Wchnschr. **34**: 241 (May 19) 1921.

7. Howland, John, and Kramer, Benjamin: Calcium and Phosphorus in the Serum in Relation to Rickets, Am. J. Dis. Child. **22**: 105 (Aug.) 1921.

8. Bell, R. O., and Doisy, E. A.: J. Biol. Chem. **44**: 55 (Oct.) 1920.



## CONCLUSION

It is evident that sunlight not only brings about a clinical cure of the characteristic lesions, but also brings about an increase in the inorganic phosphate of the blood similar to that noted when the cure is accomplished by means of the specific cod liver oil. This observation is of interest both as additional testimony of the curative value of sunlight in this disorder, and as evidence that the curative process occasioned by these divergent therapeutic agents will probably be found to be fundamentally the same. These results establish a chemical basis for the use of heliotherapy in rickets. Furthermore, they furnish the first definite evidence of metabolic change in the animal body brought about by the solar rays.

## ASYNCHRONISM OF THE RESPIRATORY MOVEMENTS IN LOBAR PNEUMONIA

## SECOND COMMUNICATION \*

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NEW YORK

In a previous paper<sup>1</sup> I called attention to a type of breathing which, though of common occurrence in severe cases of lobar pneumonia, had all but escaped observation.

Briefly, this type of breathing is characterized by a separation of the moment of contraction of the diaphragm and intercostal (and other thoracic) muscles by a definite though variable time interval. The diaphragm contracts first, the abdomen protrudes, and then, after varying intervals, contractions of the intercostal muscles follow. The lowermost intercostals may contract first and the movement of the thorax progress like a wave from below upward, or the delay in the contraction of the intercostals may result in complete asynchronism. In the fully developed type of asynchronism the diaphragm reaches the expiratory phase before the contractions of the intercostals set in, and the abdomen and chest rise and fall alternately—"seesaw" best describes the impression conveyed.

The time relations of the contractions of the diaphragm and intercostal muscles with those of the auxiliary and associated muscles of respiration (for example, of the alae nasi) have not been determined in detail, but dilatation of the alae nasi has been observed to precede the bulging of the abdomen which, in turn, preceded the movement of the thorax.

The cause of the delay in the contractions of the intercostal (and other thoracic) muscles is not entirely clear, but it was suggested that it might be found in unequal depression of the bulbar (formatio reticularis) or other centers by the pneumococcus toxin.

The prognostic significance of the phenomenon is grave. The fully developed type of asynchronism (that is, complete dissociation of the contractions of the diaphragm and thoracic muscles) occurs only, at least in my experience, in severe and usually fatal cases of lobar pneumonia.

After the appearance of my paper, Hoover<sup>2</sup> observed three cases of pneumonia with abnormal respiratory movements and, concluding that they were examples of the type of breathing which I had described, attacked the accuracy of my observations and my interpretation of the cause of the phenomenon. He denied that the diaphragm and thoracic muscles contract asynchronously in this type of respiration.

All three of Dr. Hoover's cases exhibited a "seesaw" movement of the abdomen and thorax. Stating that the details of the respiratory movements in two of the cases were identical, he described one of them as follows (only the pertinent portions of the description are quoted):

During inspiration the abdomen was violently protruded and the outer portions of the costal margins and the hypochondria moved so violently in a lateral direction that they suggested the flapping of the wings of a barnyard fowl. . . . During inspiration the lower end of the sternum was violently drawn toward the vertebrae, and the sternum, as far up as Louis' angle, shared in this movement. . . . During inspiration, it was also observed that the ribs on both sides of the sternum, as far as the midclavicular line, were retracted. . . . It was perfectly clear that the ribs, from the second to the sixth, inclusive, were retracted during inspiration as far laterally as the midclavicular line: but when the arches of these ribs were examined laterally from this line, they were found to have a distinctly normal bucket-handle movement. It is not conceivable that the intercostal muscles were activated as far as to the midclavicular line and failed of activation in those parts which lay to the median side of that line. So the inspiratory retraction of the median portions of the upper ribs and sternum must have been due to the fact that in this region the normal results of the activating force of the intercostals were overcome by some conflicting agent.

A comparison of the movements of the thorax and abdomen portrayed in the respective descriptions will reveal obvious and fundamental differences in the two types of breathing. Even with respect to the "seesaw" movement, on which Dr. Hoover lays such stress, the resemblance is only superficial. The outstanding feature of the respiration in Dr. Hoover's cases is the disorder in the movements. The outer portions of the costal margins and the hypochondria "flapped like the wings of a barnyard fowl." The lower part of the thoracic cage was flattened during inspiration in its anteroposterior diameter. So marked was the flattening that, with the simultaneous protrusion of the abdominal wall, it produced the impression of "seesawing." The diaphragm and intercostal muscles contracted synchronously.

In the asynchronous type of breathing described in my paper, the only abnormal feature which appears is the delay in the movement of the thorax. The sternum and adjacent portions of the ribs are not depressed during inspiration; the direction of movement is always normal. The abdominal wall rises with inspiration and falls with expiration. The thorax in its entire extent expands during inspiration, and passively (usually) returns during expiration to its resting position: it is the delay in the expansion and return of the thorax to its resting position which creates the impression of "seesawing" when the dissociation of the abdominal and thoracic movements is complete.

In this connection, in order to prevent the wrong impressions which otherwise might be created, it is necessary to call attention to the fact that Dr. Hoover

\* From the Department of Medicine, University and Bellevue Hospital Medical College, and the Third Medical Division of Bellevue Hospital.

1. Coleman, Warren: Asynchronism of the Respiratory Movements in Lobar Pneumonia, J. A. M. A. 73:1923 (Dec. 27) 1919.

2. Hoover, C. F.: Suspected Asynchronism of the Respiratory Movements in Lobar Pneumonia, J. A. M. A. 75:990 (Oct. 9) 1920.



has fallen into the error of misquoting my paper in important particulars. Hughlings Jackson's case was not cited as an example of asynchronous breathing: the intercostal muscles did not contract at all unless the patient was roused by a command to breathe. And it was Jackson's opinion, not mine, that the cause of the respiratory disturbance in this case was a circumscribed myelitis of the lateral horns, if not more, of the cord, though I saw (and see) no reason for questioning the opinion. Generalizing from Jackson's opinion, Dr. Hoover attributes to me the belief that disease of the cord is the cause of asynchronous breathing, whereas I took particular pains to present my argument that its cause is probably to be found in unequal depression of the respiratory center (*formatio reticularis*) or centers by the pneumococcus toxin. I may add that the rarity of this type of breathing since the advent of the influenza pandemic, with the probable modification through symbiosis of the selective affinity of the pneumococcus toxin for the respiratory center, lends further support to my argument. But, after all, the main purpose of my paper was to call attention to an unrecognized type of respiration, not to explain its causation.

It had been my intention to publish tracings of the respiratory movements of patients with asynchronism in my original communication, but technical difficulties arose in obtaining them. Through the kindness of Prof. Holmes C. Jackson, these difficulties have since been overcome. Professor Jackson constructed special tambours which were large enough to take up the movements of the chest and abdominal wall: contact was established by means of long stems cemented to the rubber diaphragms. The large tambours were connected with smaller recording tambours by rubber tubing. Obviously, the movements of the chest and abdomen could be taken in only one diameter at a time. Attention should also be directed to the fact that the movements of the recording levers correspond in direction with those of the chest and abdomen.

In March last, an elderly woman died of primary carcinoma of the lungs in my service at Bellevue Hos-

simultaneously with the diaphragm. Gradually, as the patient grew weaker, the abnormal excursion of the lower end of the sternum increased: for some days before death, the "seesaw" movement of the abdomen and chest was visible at a distance through the bed-

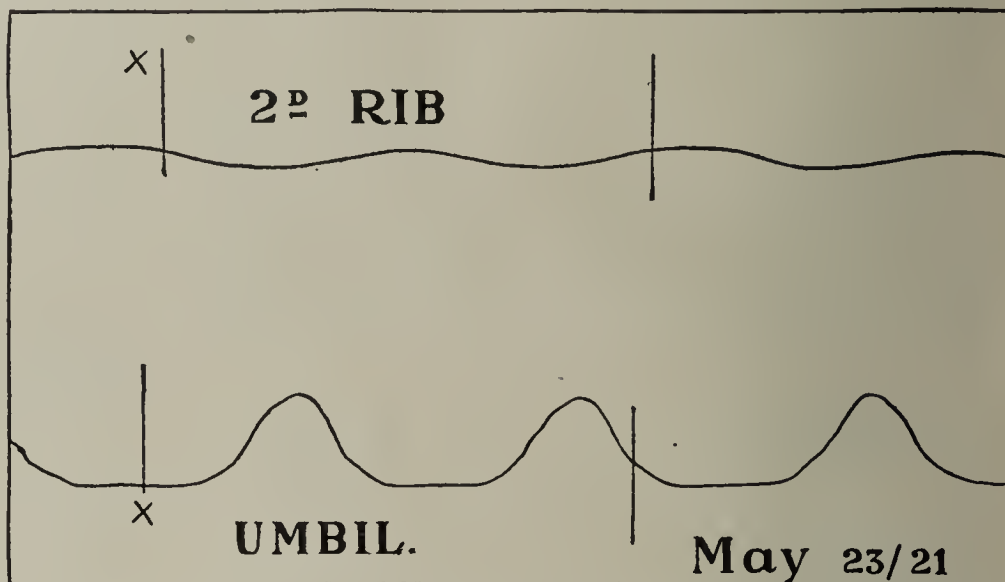


Fig. 2.—Tracings from a patient with lobar pneumonia exhibiting asynchronism in the movements of the thorax and abdomen. The curve from the sternum at the second rib does not begin to rise until the upward movement of the abdominal wall is nearly complete; the peak of the curve is not reached until the abdominal wall has returned to its resting position.

clothing. Examination revealed that the anteroposterior diameter of the lower part of the thorax was shortened during inspiration as much as from one-third to one-half inch (8.5 to 12.7 mm.) by the depression of the sternum and adjacent portions of the ribs. The contractions of the lower intercostals were plainly visible; those of the upper intercostals could be detected by palpation: all were synchronous with the contraction of the diaphragm. The contractions of the intercostal muscles, however, were feeble, the feebleness progressively increasing from below upward. Further, the anterior portions of the intercostal muscles appeared not to contract; at least, their contractions could not be detected by inspection or palpation.

Tracings of the respiratory movements of this patient were taken on several occasions. Figure 1 represents the maximum departure from normal. The upper curve records the movements of the lower end of the sternum, the lower curve, that of the abdominal wall just above the umbilicus. Simultaneous points are indicated at X. The most striking feature of this tracing is the movement of the levers in opposite directions: the curve from the lower end of the sternum sinks during inspiration and rises with expiration, that from the abdomen rises during inspiration and falls with expiration. Measurements of the curves prove that the movements of the chest and abdomen begin and end simultaneously.

The respiratory movements of this patient, therefore, as established by physical examination and by tracings, correspond in all essential particulars with the type of breathing described by Dr. Hoover. According to Dr. Hoover, this type of respiration "merely indicates moderate enlargement of the heart." In my patient, however, Dr. Douglas Symmers found the heart to be perfectly normal in size at necropsy.

As previously stated, the type of respiration described in my paper has been much less common since the

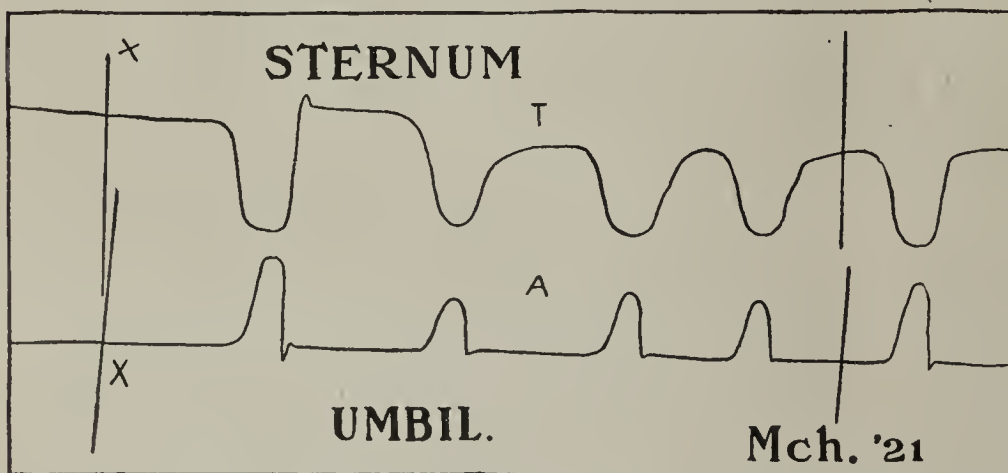


Fig. 1.—Tracings from the sternum and abdomen of a patient with primary carcinoma of the lungs. Simultaneous points are indicated at X. The curves show that the sternum sinks from its resting position as the abdomen rises.

pital. When she first entered the ward she was thought, mistakenly, to have pneumonia. During inspiration the lower end of the sternum was observed to sink almost imperceptibly. By palpation it was ascertained that the intercostal muscles contracted



**The Hospital an Agent in Public Service.**—A hospital as an institutional unit in this great medical structure is obligated to learning and teaching, and in order to be worthy of the name must be solely an agent in public service. It may not be conducted primarily for gain, it must not pauperize, and all individuals connected with its activities, from the executive head to the least important employee, are but servants of the same agent in the same cause working under the same obligations to human welfare, the prevention and relief of disease, moral, mental and physical.—J. L. Yates, *Hosp. Progr.*, November, 1921, p. 417.



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SATURDAY, JANUARY 7, 1922

## THE ELUSIVE FUNCTION OF THE SPLEEN

William Osler said that he always enjoyed reading an article concerning the function of the spleen which contradicted some previous article, since he himself had never been able to get a clear understanding of this organ. Any one with this point of view is assured of much pleasure whenever he looks up the most recent literature concerning the spleen.<sup>1</sup> He will find that many careful studies of the blood leaving the spleen show that the number of red cells is more than, less than or the same as the number in the blood going to the spleen, and that the leukocytes are increased, decreased or unchanged in number in the blood after passing through this organ. Presumably, then, if the spleen does produce any change in the number of cells in the blood passing through it, this is not of such a degree that it is outside the limits of error of observation. There is agreement that red cells are disintegrated in the spleen, but so they are in other organs, especially the liver and the bone marrow. Some investigators have found evidence that the spleen produces something which causes hemolysis, but others have described an increase in red cells and hemoglobin after the injection of splenic extracts.

Following splenectomy there is usually seen a marked and persistent leukocytosis, usually with more or less anemia of considerable duration; there seems to be general agreement on this point, but it is opposed to the fact that when the splenic blood is diverted into the systemic circulation the same sort of leukocytosis and anemia follows. Also it is accepted that with the anemia that follows splenectomy the red cells show an increased resistance to hemolysis, dependent perhaps on the presence in the blood of increased quantities of cholesterol, which protects the corpuscles from hemolytic agents. Despite this increase in cholesterol when the spleen is missing, we find the hypothesis put forward that the spleen is a place where blood cholesterol is manufactured.<sup>2</sup> Again, we find careful analyses of the blood after splenectomy showing an increased fat

content, and equally trustworthy analyses showing no such thing.<sup>3</sup> At one time there was much interest in the reported transformation of ordinary lymph glands after splenectomy into a special, spleenlike type, hemolymph glands, but even such definite anatomic facts have not been agreed upon.<sup>4</sup> Some have advanced evidence that the spleen produces a hormone to stimulate peristalsis,<sup>5</sup> but not without contradiction, since extracts of almost any tissue may produce effects not differing from those of splenic extract.

Taken all together, an enormous amount of experimental work, as well as not a little careful clinical study, has failed to show conclusively that the spleen is an organ of internal secretion, or to account in any way for the fact that it is a large organ, universally distributed in the animal kingdom, provided with a blood supply so large as to suggest that it must have great activity and most important functions. Whatever it does in the way of destroying decrepit red cells can be done elsewhere. Surely it must have some further task than this, yet, if it has, this must be readily carried on in other tissues, since splenectomy is so well endured; probably this is why we cannot find out just what the chief function of the spleen may be.

## THE MECHANISM OF ACID NEUTRALIZATION BY AMMONIA IN THE BODY

It is now generally accepted that the greater part, at least, of the urea which represents the end-product of nitrogenous metabolism in the body can be traced to ammonia as its immediate precursor. Ammonia is undoubtedly formed with chemical readiness from the amino-acids that represent protein in the process of disintegration, whereupon it is synthesized into urea ready for transport to the kidneys and excretion. Ordinarily the urinary output of ammonium compounds, as such, is small at most and does not exceed 0.6 gm. (9 grains) of nitrogen a day. At times, however, the yield of ammonia from the urine may be largely augmented, notably in that form of acid intoxication produced either by ingestion of mineral acid or by the genesis of acid products as the result of a disordered metabolism. In such cases it is argued that ammonia arising in the usual way from amino-acid deamination somewhere in the body is deflected from its usual conversion to urea and serves to neutralize some of the abnormal acid products. Ammonia thus performs a protective function and serves among other processes in the important reactions of neutrality regulation in the body. Consequently, further, an increment of ammonia output by the kidneys is interpreted as an index of that form of acidosis represented by increased circulation of fixed acids. Administration of

1. Eddy, N. B.: The Internal Secretion of the Spleen, *Endocrinology* 5: 461 (July) 1921.

2. Abelous, J. E., and Soula, L. C.: *Compt. rend. Soc. de biol.* 170: 619, 1920.

3. Denis, W.: The Influence of Splenectomy on Metabolism in Anemia, *Arch. Int. Med.* 20: 79 (July) 1917.

4. Meyer, A. W.: *J. Exper. Zool.* 16: 241, 1914.

5. Stern, L., and Rothlin, E.: *J. de physiol. et de path. gén.* 18: 753, 1920.



fixed alkalis accordingly always depresses the output of ammonia, as they replace the latter in the neutralization process.

Where is the ammonia formed which plays such an important part? Where does the neutralization take place? Heretofore the liver, an organ which has long been saddled with responsibility for physiologic reactions that could not be assigned to any other seat in the body, has been charged with the function of converting or diverting ammonia into its appropriate uses. This view has been cherished by a generation of physiologists and fostered by the intimation that the portal circulation brings to the liver blood particularly rich in ammonia. In a critical and unusually meritorious contribution to the literature of this subject, Nash and Benedict<sup>1</sup> of the Cornell University Medical College, New York City, have shown that many of the statements regarding the content of ammonia in the blood must be discarded, owing to the inaccuracies of earlier analytic technic. There has even been some question as to whether any ammonia actually exists in the blood.<sup>2</sup> In any event, it has become clear that the actual concentration of blood ammonia as determined by well controlled methods is entirely inadequate to account for the high urinary ammonia found in various pathologic conditions or after acid ingestion. One naturally asks, therefore, whether the kidney itself forms the ammonia which it eliminates.

To this scarcely anticipated question the experiments of Nash and Benedict seem to have given a conclusive answer in the affirmative. They found no noteworthy increment in the ammonia content of the blood in the general circulation even in conditions in which the urinary output of ammonia was markedly augmented; nor was there any accumulation when the kidney function was seriously interfered with, although the content of other nitrogenous excretory products was decidedly increased in the blood in such cases of renal insufficiency. It seemed probable that if ammonia production takes place in the kidney, this organ would not excrete every trace of the ammonia formed, and one might then expect to find the blood of the renal vein richer in ammonia than the systemic blood. This was, indeed, the case. As the New York biochemists concluded on finding twice as much ammonia in the blood from the renal vein as from other sources, these differences admit of only one interpretation: that the kidney, instead of excreting ammonia from the blood, forms the ammonia which it excretes, while at the same time it contributes a small amount of ammonia to the blood. Furthermore, if ammonia were formed in the organism in appreciable amounts elsewhere than in the kidney, one would expect injection of acid into the circulation to be followed by a definite increase in the

ammonia of the general systemic blood. The opposite change might be expected as a result of alkali treatment. Yet no such changes were actually demonstrable when the crucial experimental test was made.

If these significant findings are substantiated, the commonly accepted view that neutralization of acids by ammonia is a function of the organism in general, or of the liver, must be definitely abandoned. As Nash and Benedict point out, if the kidney is to be regarded as the seat of the ammonia production, depletion of the alkali reserve becomes readily understandable under certain definite conditions. If ammonia is not available within the organism, the acids must be transported wholly in combination with the fixed bases, or with protein. If, as they state further, the kidney becomes defective in its power to eliminate acid radicals, and thus to maintain them at a minimum level in the blood, a depletion of the alkali reserve would result, since the acid radicals would remain in the circulation in abnormal amounts, and would have to be neutralized by the fixed bases or protein. This condition might well result with a kidney still normal in its power of ammonia production. Such ammonia is available for the needs of the organism only as acid radicals are excreted. A depletion of the alkali reserve of the blood would result should the kidney become defective in its power of ammonia formation. Even should such a kidney remain normal in its power of excreting acid radicals, the organism would lose base excessively during the excretion of the acid. These splendidly executed investigations invite novel speculations as to the significance of kidney disease and its relation to acidosis.

#### DEATHS OF PHYSICIANS IN 1921

During 1921, the deaths of 2,286 physicians in the United States and Canada were recorded in *THE JOURNAL*. Adding 2.5 per cent. to this number on account of delayed reports and possible omissions, we may estimate the total number of deaths as 2,343. On an estimate of 160,000 physicians in the United States and Canada, this is equivalent to an annual death rate of 14.65 per thousand. The average annual mortality rate for the period from 1902 to 1921, inclusive, is 15.05.

*Ages.*—Of the 2,118 decedents whose age was stated, 29 were under 30; 160 between 31 and 40; 298 between 41 and 50; 409 between 51 and 60; 571 between 61 and 70; 393 between 71 and 80; 240 between 81 and 90; 17 between 91 and 100, and one lived to the age of 101. The greatest number of deaths for a given age occurred at 66 years, at which age seventy-one deaths were noted.

*Causes of Death.*—Of the 2,009 known causes of death, 426 were from diseases of the heart and circulatory system. General diseases accounted for 290 deaths. Of these, 128 were from carcinoma and sar-

1. Nash, T. P., Jr., and Benedict, S. R.: The Ammonia Content of the Blood, and Its Bearing on the Mechanism of Acid Neutralization in the Animal Organism, *J. Biol. Chem.* **48**: 463 (Oct.) 1921.

2. Myers, V. C.: Practical Chemical Analysis of Blood, New York, 1921, p. 25.



coma, 47 from tuberculosis, 29 from septicemia, 24 from diabetes, 15 from typhoid fever, 14 from anemia, 8 from diphtheria, and 25 from other infectious diseases. Cerebral hemorrhage caused 196 deaths; paresis, 37; meningitis, 18; neuritis, 14; epidemic encephalitis, 11, and other diseases of the nervous system, 8. Pneumonia claimed 167 victims; influenza, 19; bronchitis, 11, and other diseases of the respiratory system, 11. Appendicitis caused 32 deaths; cirrhosis of the liver, 19; gallstones, 17; strangulated hernia, 13; peritonitis, 12, and other diseases of the digestive system, 79 deaths. Chronic nephritis accounted for 79; acute nephritis, 26; uremia, 23, and other diseases of the genito-urinary system, 18 deaths. Various diseases of the bones caused 9 deaths; diseases of the skin, 3; senility, 213; sequels to operations, 91, and 38 were due to complications not specified.

*Accident and Homicide.*—The causes and distribution of the ninety-seven deaths from accident were: automobile-railway (grade crossing), 22; automobile, 19; firearms, 17; railroad and street cars, 14; drowning, 6; poison, burns, falls and fractured skulls, each, 4; runaway team, kick by a horse, and electrocution by roentgen ray while treating patient, each, 1. All of the nineteen homicides were due to firearms; of these, six physicians were shot by bandits and one (colored) shot in a race riot. One physician was electrocuted on conviction of the murder of his wife.

*Suicide.*—The sixty-nine physicians who ended their lives by suicide selected these methods: poison, 29; firearms, 19; jumping from high places, 7; cutting instruments, 5; drowning, 4; asphyxiation, 3; strangulation, 2.

*Civil Positions.*—Among the decedents who held civil positions, 1 had been lieutenant governor (acting state governor for one year); 39, members of the state legislature; 34, mayors of cities; 35, members of boards of health; 15, members of state boards of medical examiners; 19, members of U. S. pension boards; 4, postmasters, and 1, a member of the Canadian parliament.

#### THE EXPERIMENTAL INVESTIGATION OF SENESCENCE

Newer methods of investigation permit the problem of senescence to be attacked under the controlled conditions of experiment, and many principles of importance have been disclosed. Bechhold<sup>1</sup> has pointed out the interesting way in which the living body, a colloidal mass, behaves in respect to age exactly like a simple colloidal jelly. It is characteristic of colloidal solutions, which, of course, is what cells are, that as they age their properties continually change in the direction of aggregation of the colloidal particles. As a result of this the gels tend to decrease in elasticity, to become more turbid and less permeable. A gelatin mass possesses its

maximum elasticity a few hours after it is formed; later it begins to shrink and force out its water, becoming drier and less rapidly permeated by crystalloids in solution. This is entirely comparable to the fact that young tissues are much more elastic than old tissues, that chemical changes seem to take place more rapidly in youthful cells, and that the water content of the tissues continues to decrease progressively with age, for the fetus of the third month is 94 per cent. water, at birth about 70 per cent., and the adult is only about 58 per cent. Bechhold says that in general the tissue colloids decrease in their water affinity both in animal organisms, which become poorer in water with age, and in plants as shown by the hardening of older plant tissues. The bearing of these principles on the problem of senility and degeneration of elastic tissue, regeneration, and other problems of pathology, is obvious.

Carrel has found that when connective tissue is grown by the usual methods of tissue cultivation, it will develop more abundantly in the plasma of young animals than in that from older animals, and with Ebeling<sup>2</sup> he has sought the cause of this difference and its relation to the factors of senescence. They call attention to the fact that something similar must obtain in man, since if the rate of cicatrization of human wounds is measured accurately, this is found to vary inversely with the age of the patient. Studies by Loeb and Northrup on the duration of life of the fruit fly, *Drosophila* led to the conclusion that this was probably determined either by the production of some substance leading to old age, or by the destruction of a substance which normally prevents old age and natural death. The experimental studies of Carrel and Ebeling indicate that the slower growth of cells in cultures of serum from older animals is dependent on the increase of an inhibiting factor in the serum with age. The effect of age is marked, the rate of growth of connective tissue cells in chicken plasma decreasing 50 per cent. with the first three years of life and 30 per cent. more in the next six years of the life of the fowls furnishing the plasma. The duration of life of cells in the older plasma was correspondingly decreased. No evidence was found of the presence of any growth-accelerating substance in the plasma of young fowls.

These suggestive studies indicate that the decreased rate of multiplication of cells in old animals is at least in part the result of influences outside the cells themselves, of unknown nature. The relative capacity of cells derived from animals of different ages to grow in the same serum is not discussed, but it would in all probability show equally significant facts, especially in consideration of the differences in young and old protoplasm pointed out previously. Such experimental investigations of cell growth are of great significance not only for the problems of tissue regeneration and senescence, but also in the study of cancer, since here

1. Bechhold, H.: *Die Kolloide in Biologie und Medizin*, Dresden, 1912, p. 65.

2. Carrel, Alexis, and Ebeling, A. H.: *Age and Multiplication of Fibroblasts*, J. Exper. Med. **34**: 599, 1921.



we have an instance of excessive growth which is especially likely to appear at the time when senescence is manifesting itself.

## Current Comment

### THE CONSEQUENCES OF BLOOD CONCENTRATION

The unexpectedly frequent occurrence of abnormal concentration of the blood and the untoward consequences of anhydremia for the bodily functions have attained notice in a variety of ways during recent months. Marriott and his collaborators<sup>1</sup> have pointed out what undue desiccation of the blood may mean in those abnormal conditions designated as infantile marasmus or athrepsia in children. The oxygen-carrying power of the blood is diminished, the structures supplied by the less vigorously circulating fluid feel the effect of imperfect arterialization, and organs like the kidney consequently suffer in their secretory functions. Underhill<sup>2</sup> has shown that blood concentration is immediately responsible for death in gassed animals, and presumably in man under comparable conditions in which pulmonary edema brings about a distinct concentration of the blood. The latter then means a failing circulation, an inefficient oxygen carrier, oxygen starvation of the tissues, fall of temperature and, finally, suspension of vital activities. Underhill and Ringer<sup>3</sup> have observed that a similar concentration of the blood may arise in patients with influenza, and may constitute a factor of dominant importance with respect to the outcome of the disease. The decreased content of water in the blood exhibits itself in relation to the digestive secretions. That a condition of anhydremia may arise in febrile conditions seems to be well established.<sup>4</sup> It is significant, therefore, to recall that Meyer, Cohen and Carlson<sup>5</sup> observed a reduction in the total quantity of the gastric secretion in human febrile patients. Finally, Barbour and Freedman<sup>6</sup> have observed a similar reduction in the response of the salivary glands to stimulation in animals during the course of fever when there was known to be an abnormally high concentration, i. e., a diminished water content of the blood. The depression of secretion now well demonstrated to occur in fever has been attributed by some to degenerative changes assumed to arise in the secretory structures. Barbour has pointed out, however, that the paucity of secretion can be accounted for equally well by the lack of available water in the circulation. The therapy of restoring water by reestablishing the normal concentration of the blood in the

conditions of anhydremia now known to be not infrequent under a variety of clinical conditions deserves more careful consideration than it at present commonly receives.

### THE EXCRETION OF ACETONE

Living cells are more or less continuously giving off to the mediums surrounding them products of chemical reactions which take place in the course of their physiologic activity. Some of these products find their way into the circulating blood, from which in turn they are eliminated through various channels. For many years the nature of the processes by which such transfers from cells to fluids and vice versa may take place has been the subject of discussion. Simple filtration is in many instances a physical impossibility under the conditions known to prevail; consequently, it must be assumed that other forces are concerned. Whether these are of an easily explainable physicochemical character, such as osmosis represents, or whether they involve some as yet obscure feature which was formerly defined by the indefinite term "physiologic" is not yet clear in certain instances. Even in the case of a function as simple as the exchange of gases through the lungs seems to be, vague "secretory" factors have been called on to explain the penetration of oxygen into the body at the low partial pressures observed at high altitudes. In the case of the elimination of acetone, which arises under pathologic conditions in the body, recent investigations by Widmark<sup>1</sup> and independently by Briggs and Shaffer<sup>2</sup> at the Washington University School of Medicine have shown that it is excreted from the lungs by the simple process of diffusion and volatilization. Examinations of the coefficients of distribution of acetone between water and air, and blood and air outside the body at different temperatures have shown them to be the same as the ratio between the concentration of acetone in blood and alveolar air under conditions of ketonemia. Furthermore, the concentration of acetone in the urine in such cases is about the same as that in the whole blood and blood plasma. Hence the excretion of acetone, whether by the lungs or the kidneys, appears to be the result of the simple physical process of diffusion. The "acetone breath" of the diabetic patient thus is the result merely of evaporation, so to speak, from the blood plasma into the alveolar air.

## Association News

### APPOINTMENT OF COMMITTEE ON GORGAS MEMORIAL

Dr. Hubert Work, President of the American Medical Association, has appointed as the Committee on the Gorgas Memorial, Drs. George E. de Schweinitz, Philadelphia; Charles W. Richardson, Washington, D. C., and Fred B. Lund, Boston. This appointment was made in compliance with the request received by the Board of Trustees from the Gorgas Memorial Institute of Tropical and Preventive Medicine of Panama for the cooperation of the American Medical Association.<sup>3</sup>

1. Diarrhea and Anhydremia in Infancy, editorial, J. A. M. A. **76**: 294 (March 19) 1921.

2. Underhill, F. P.: The Physiology and Experimental Treatment of Poisoning with Lethal War Gases, Arch. Int. Med. **23**: 753 (June) 1919.

3. Underhill, F. P., and Ringer, Michael: Blood Concentration Changes in Influenza, with Suggestions for Treatment, J. A. M. A. **75**: 1531 (Dec. 4) 1920.

4. Barbour and Howard: Proc. Soc. Exper. Biol. & Med. **17**: 148, 1920.

5. Meyer, J.; Cohen, S. J., and Carlson, A. J.: Gastric Secretion and Fever, Arch. Int. Med. **21**: 354 (March) 1918.

6. Barbour, H. G., and Freedman, B. P.: Effects of Pilocarpine upon Salivary Secretion in Normal and Febrile Dogs, Am. J. Physiol. **57**: 387 (Oct.) 1921.

1. Widmark, E. M. P.: Biochem. J. **14**: 379, 1920.

2. Briggs, A. P., and Shaffer, P. A.: The Excretion of Acetone from the Lungs, J. Biol. Chem. **48**: 413 (Oct.) 1921.

3. J. A. M. A. **77**: 1742 (Nov. 26) 1921.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALASKA

**Hospital News.**—Dr. Rex. F. Swartz, Seattle, has been appointed physician in charge of the new hospital of the U. S. Bureau of Education at Noorvik. The hospital serves all that territory of Alaska which borders on the Arctic Ocean.

### DELAWARE

**New Building at University of Delaware.**—The government has erected, at a cost of \$10,000, a new building to house the division of rehabilitation of the University of Delaware.

### FLORIDA

**Radium Clinic.**—According to an announcement by Dr. Raymond C. Turck, state health officer, the state radium clinic for the treatment of cancer, which was established at Jacksonville about a year ago, by Dr. Ralph N. Greene, former state health officer, and Dr. Gerry R. Holden, Jacksonville, for the treatment of cases of inoperable cancer in women, will hereafter be open to both men and women suffering from any form of cancer which may be benefited by radium. The conditions under which treatments are given are that the patient must be a resident of the state and must be financially unable to pay for the medical services which he may require.

### ILLINOIS

**Personal.**—Dr. Anna C. Johnson, Chicago Municipal Tuberculosis Service, has been appointed medical director of the Champaign County Tuberculosis Sanatorium.

**Medical Society Assumes Duties of City Physician.**—The members of the Kankakee City Medical Society, since March, 1921, have been rendering the service in that locality usually performed by the county and the township physician. Recently, the society has taken over the duties of the city physician. To render this service, the members of the society are divided into four groups, each of which serves during three months. In each of these groups are physicians who are capable of doing major surgery, as well as specialists on the eye, ear, nose and throat. The plan provides that the indigent shall have a choice of physicians and be accorded more competent service than could be rendered by an individual practitioner, and at no greater expense to the community. The compensation which the society receives for this work is devoted to maintaining headquarters for the organization and a library, and any surplus which may accrue will be used to provide greater facilities and equipment for all the physicians who are members of the organization.

### INDIANA

**Hospital News.**—St. Elizabeth's Hospital, LaFayette, is building a new 170-foot fireproof addition to the hospital. A separate isolation department for certain contagious diseases and a large normal training school for teachers and nurses are also under construction on the hospital grounds.

### IOWA

**Personal.**—Dr. Ray Wycoff, Wapello, sailed for Porto Rico, January 7, to take charge of the Ryder Memorial Hospital.

### MARYLAND

**Health Exhibit for Baltimore City Planned.**—To keep the public in closer touch with the work of the Baltimore City Health Department, Commissioner C. Hampson Jones is planning a permanent exhibit in a building adjoining the health department. The proposed exhibit will be a feature of an assembly hall, in which employees of the different bureaus of the health department are to hold monthly gatherings for consultation and a systematic study of the problems confronting them. Bureau chiefs will lead discussions as to the best means of improving the service, based on first-hand reports of what health departments in other large cities are doing to meet their problems. The information will be

gathered by the bureau chiefs direct, and will enable Dr. Jones to bring the service to a higher standard of efficiency. The exhibit will be of such a character as to make it possible for the public to keep posted as to every branch of health work in the city. It will be an educational exhibit, not the least part of which will be a comprehensive record of the work of the Child Welfare Bureau, in charge of Dr. Mary Sherwood, which deals with the care of infants as well as prenatal work. The exhibit and monthly conferences constitute but one feature of a modernized health department, which the department has been trying to organize in Baltimore for many years.

### MICHIGAN

**Dr. Collier Acquitted.**—It is reported that Dr. Frank S. Collier, president of the village of Vicksburg, who was arrested, June 20, on a charge of killing Robert Thompson, was acquitted in the circuit court of Kalamazoo, December 15. Dr. Collier was called to treat a member of the Thompson family who had fainted during a family quarrel, and becoming involved in the fight, Dr. Collier was struck by Thompson, whom it was alleged he shot. Dr. Collier pleaded self-defense, declaring that he fired at Thompson only after the latter had attacked him.

### MISSOURI

**Hodgen Lecture.**—Dr. Samuel J. Mixter, Boston, delivered the Hodgen Lecture, under the auspices of the St. Louis Surgical Society and the Medical Fund Society, Jan. 4, 1922.

**Lectures in Ophthalmology.**—The Ophthalmic Section of the St. Louis Medical Society announces a course of lectures in ophthalmology, to be given in St. Louis by Prof. Ernst Fuchs of Vienna during the month of February, 1922. Further information regarding this course may be obtained by writing to the Fuchs Lecture Committee, St. Louis Medical Society, 3525 Pine Street, St. Louis.

**Rescinding of Travel Order.**—According to a statement of Dr. J. P. Peake, U. S. Public Health Service, Washington, D. C., who was sent to Kansas City to investigate the smallpox epidemic, the disease is steadily declining. The state board of health has rescinded its order requiring all persons traveling on railroads in the state, on and after December 22, to present a certificate of vaccination against smallpox.

**Census of St. Louis' Crippled Children.**—The St. Louis Medical Society is taking the census of the crippled children of that city. The society will endeavor to assist these little unfortunates, who are not already under treatment and who cannot secure it for themselves, to receive the benefit which can be had in the hospitals of the city. Through the public press an invitation has been issued to parents and others who know of cases of this character, asking them to report to the society the names of these patients. The society proposes to follow up these patients until everything has been done for them that may be done.

### NEBRASKA

**Lancaster County Medical Society.**—At the regular meeting of the society held, December 17, at Lincoln, resolutions were passed expressing appreciation of the \$100,000 bequest for the city hospital, by the late Mr. R. E. Moore. The following officers were elected for the ensuing year: president, Dr. George W. Covey; vice president, Dr. Joseph J. Hompes; secretary, Dr. David D. Sanderson, and treasurer, Dr. George H. Walker.

### NEW JERSEY

**Hospital News.**—Establishment of four or five convalescent hospitals in various parts of the state was definitely decided by the executive committee of the New Jersey Department of the American Legion. These institutions will be conducted under officials of the state department.

### NEW YORK

**Health Officer Honored.**—The staff of the health bureau, Rochester, gave a complimentary dinner to Dr. George W. Goler, on the completion of his twenty-five years of active service as health officer of the city of Rochester.

**Typhoid Law Suits to Be Heard.**—The first of a series of suits against the Gould Manufacturing Company and the Seneca Water Company growing out of the recent typhoid fever epidemic at Seneca Falls is scheduled for January 16 in the supreme court at Rochester. The complainant is K. H. Bartlett of Seneca Falls.



**State License for Dr. Lorenz.**—By unanimous vote of the board of regents of the state of New York, Dr. Adolph Lorenz of Vienna, has been granted a license to practice medicine in this state. Dr. Lorenz certified to the board that he had licenses issued by the Austrian government, and during his former visit to this country by the states of Illinois and Texas.

**Tuberculosis Hospital for Soldier Memorial.**—A supervisor's committee, appointed to investigate regarding a suitable memorial for the soldiers of Madison County, has submitted a report recommending a tuberculosis hospital as a memorial, the land for a site, buildings and plant to be provided through a public subscription. The hospital would be maintained at county expense under the provisions of the state county law.

**Personal.**—The governor has announced the appointment of Dr. C. Floyd Haviland, Albany, who is at present superintendent of the Connecticut State Hospital, Middletown, Conn., as state hospital commissioner of New York, to fill the vacancy caused by the resignation of Dr. Charles W. Pilgrim. —Dr. Francis E. Fronczak, health commissioner of Buffalo, has received the Order of the Legion of Honor from the French government. Dr. Fronczak served with the American forces in France and was a confrère of Paderewski in the early days of the present government of Poland.

**Medical Society of the County of Kings.**—With the object of promoting cooperation between the Medical Society of the County of Kings and the Second District Dental Society, a recent joint meeting of the two bodies was held in Brooklyn, December 20. The principal paper, which had to do with the relations and duties of both physician and dentists, was given by Dr. Leroy M. S. Miner, Boston, on "Oral Focal Infection in Relation to Systemic Disease and the Duties of Physicians and Dentists Thereto and to Each Other." It was the one hundred and first annual meeting of the society. The following officers were elected for the ensuing year: Dr. Arthur H. Bogart, president; Dr. Frank D. Jennings, vice president; Dr. Lewis P. Addoms, secretary, and Dr. Robert L. Moorhead, treasurer.

#### New York City

**Personal.**—A severe fire occurred in the home of Dr. Wendell Phillips during the night of December 22, causing considerable damage to the household effects. The fire was not discovered until after it had made considerable headway. Dr. Phillips and family had a narrow escape.

**Harvey Society Lecture.**—Dr. Allen K. Krause, associate professor of medicine, Johns Hopkins University, will deliver the fifth Harvey Society Lecture at the New York Academy of Medicine, Saturday evening, Jan. 21, 1922. His subject will be "Experimental Studies on Tuberculous Infection."

**Periodic Examination of Health Department Employees.**—The New York City Health Department, which was one of the pioneers in the physical examination of employees, having made provision for such examinations in 1914, in its *Monthly Bulletin* for November, reports the results of physical examination of its employees in 1920. The records for 1920 show that a total of 8,512 examinations were made; of these, 2,297 were men and 6,215 were women. In 1915, a total of 2,840 examinations were recorded. In 1920, 24.9 per cent. of the men and 71.91 per cent. of the women employees were examined. These examinations have served to bring out many interesting facts. One of the outstanding advantages is that these physical examinations afford excellent opportunities for educational work on preventive medicine. Another feature that stands out prominently in this group, as in other similar groups subjected to physical examination, is the surprisingly large number of those who think themselves perfectly well who need hygienic advice and instruction.

#### OHIO

**New Officers for Academy of Medicine.**—At the annual meeting of the Academy of Medicine of Cleveland, held, December 16, Dr. John Phillips became president for the year 1922 and Dr. Clyde L. Cummer, president-elect. Dr. Charles W. Stone was made vice president, and Mr. Guy M. Wells was reappointed executive secretary.

**Cincinnati Academy of Medicine.**—Dr. Hugh Hampton Young, clinical professor of urology, Johns Hopkins University, Baltimore, will address the academy, January 9, and Colonel Gilchrist, chemical warfare department, U. S. Army, will speak on "Medical Aspects of War Gas," January 10. In connection with the visit of Colonel Gilchrist, clinics will be conducted on poison gas cases.

#### PENNSYLVANIA

##### Philadelphia

**Chicken Pox Cases Closely Watched.**—One hundred and forty-two cases of chicken pox in Philadelphia in one week are reported by the department of public health. The report states that attention is especially called to chicken pox at this time because its eruptive symptoms may simulate those of smallpox, which disease is reported on the increase in the Western states.

#### TENNESSEE

**Personal.**—Major Webb E. Cooper, M. C., U. S. Army, Fort Bliss, Texas, is detailed as assistant professor at Vanderbilt University, Nashville.

#### TEXAS

**Hospital News.**—The Physicians' and Surgeons' Hospital, Dallas, was recently completely destroyed by fire. The loss is estimated at \$30,000, with \$20,000 insurance.

#### WASHINGTON

**Convalescent Home in Seattle.**—A convalescent home for disabled veterans of the World War will be established at Seattle. Outpatients, beneficiaries of the government who have been discharged from hospitals, but who still receive medical aid and compensation, will be the occupants of the home, which is planned to accommodate fifty patients.

#### CANADA

**Personal.**—Dr. John Wilson Taylor, of the University of Manitoba, on his way to the meeting of the American Philological Association, at Ann Arbor, Mich., spent Christmas with his parents in Toronto.

**New Hospital for Dalhousie University.**—A new tuberculosis hospital has recently been opened in Halifax which will care for about sixty-five patients. Through an agreement, Dalhousie University will nominate the medical staff, with the understanding that the institution will be a portion of the teaching plant for the Dalhousie University Faculty of Medicine.

**Public Health News.**—The Medical Society of Belleville, Ont., has brought to the attention of the board of health the urgent need for an isolation hospital there. The board has not yet made any recommendation to the city council, but it is expected that the council for 1922 will take some action in the matter. The old isolation hospital was demolished some years ago.—Messrs. George and H. S. McLaughlin, Oshawa, Ont., have presented to the city of Oshawa, through Dr. Thomas W. G. MacKay, medical officer of health, a check for the sum of \$1,200, for the establishment of a public health laboratory there.—At the coming municipal elections at St. Marys, Ont., a plebiscite will be taken to authorize the employment of a public health nurse. A community nurse was engaged by the 1921 council for six months, pending a plebiscite.

#### GENERAL

**The Remittance Slip.**—The blue remittance slip which reappears in this week's issue of THE JOURNAL is for the convenience of those who have not yet sent in their subscription and fellowship dues. The splendid cooperation of those who have already remitted is greatly appreciated, and it is hoped that the insertion of this second slip will practically obviate the necessity of sending individual bills. Those who desire to subscribe to any of the special journals issued by the Association or to the "Quarterly Cumulative Index to Current Medical Literature" may find it convenient to write names of these publications in the blank space on the blue slip and remit for them along with fellowship dues and "Journal A. M. A." subscription.

**Personal.**—Dr. Karl Landsteiner, formerly of Vienna and now of the Hague, has been appointed on the scientific staff of the Rockefeller Institute for Medical Research, New York City.

**New Publication of the American Red Cross.**—Early in January the American Red Cross will begin publication of the *Red Cross Courier*, a weekly newspaper of national circulation, which will be the official organ of the association. This publication will take the place of all bulletins now published at national and division headquarters.



**Questionable Osteopathic Degrees.**—Trustworthy information states that an individual calling himself Dr. H. D. Landale, of Calcutta, is having printed in Melbourne, Australia, blank forms of a diploma purported to be issued by an International Osteopathic Medical College of New York. It appears that there is no such institution.

**The de Roaldes Prize.**—The American Laryngological Association has offered the de Roaldes prize—a gold medal, valued at \$150—for the best original thesis upon a subject pertaining to laryngology or rhinology. The competition is open to nonmembers of the association. The thesis must be in the hands of the chairman of the prize committee prior to April 1, 1922.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

University Hospital and the Home for the Blind, Philadelphia, will receive the income, in equal parts, from one half of the residue of the \$65,000 estate left by Mrs. Alice M. Hirst.

Hahnemann Hospital, Philadelphia. The will of Ernest L. Tustin directs that after certain small bequests to servants, the residuary estate valued at \$300,000 be held in trust for a sister and the widow, and at their death one fourth will go to the Hahnemann Hospital to maintain two beds for the benefit for poor and destitute children, in the name of Ernest L. Tustin and his wife.

New Memorial Hospital, Concord, N. H., \$500 by the will of Mrs. Pauline L. Evans.

Hepburn Hospital, Ogdensburg, N. Y., an endowment fund of \$500 by A. Barton Hepburn.

**Plea for Relief of Russian Physicians.**—The American Relief Administration has issued an appeal for the relief of Russian physicians in the famine area where their help is so badly needed. The starving condition of physicians, it is stated, is seriously interfering with the vitally important medical program drawn up by the American Relief Administration officials for the benefit of the hunger-stricken population. Cholera, typhus, malaria, dysentery and other diseases, consequent on malnutrition, are rampant all through the Volga River basin, where 30,000,000 people are in acute need, if not in danger due to the failure of last summer's crop. An absolute dearth of medical supplies at first hampered the work of the American Relief Administration, but a grant of \$3,000,000 in cash from the American Red Cross for the purchase of stocks, as well as a further gift of \$700,000 worth of surplus material, eliminated this difficulty. Now the call is for personnel, which Russia herself can supply, if only food enough can be found to keep the workers themselves fit.

**Fatalities in Coal Mines.**—The U. S. Bureau of Mines reports 146 men killed in and about the coal mines of the United States in November, 1921. The figures represent a decrease of about 51 fatalities, or about 26 per cent., as compared with November, 1920, in which month 197 men were killed at coal mines. Based on an estimated output of 42,814,000 short tons in November, 1921, the fatality rate is 3.41 per million tons produced. The corresponding rate for November, 1920, was 3.34 and the production of coal was 58,898,000 tons. The production of coal during November, 1921, represents a decrease of 27 per cent. During the first eleven months of the present year 1,794 men had been killed by accidents at coal mines, against 2,077 killed during the corresponding months of 1920, a decrease of 283 fatalities, or 14 per cent. The output of coal for the same months was 457,259,000 short tons, in 1921, and 584,641,000 tons, in 1920, a decrease during the present year of 127,382,000, or 22 per cent. These figures represent a fatality rate of 3.92 per million tons, in 1921, and 3.55 per million tons mined in 1920.

**National Rehabilitation Conference.**—A conference was held, December 29-31, in the government offices of the U. S. Veterans' Bureau, Washington, D. C. All district managers were advised and urged to arouse public interest and to send interesting achievements of rehabilitation, such as individual graphic stories and pictures, samples of handwork and samples of work of trainees who are blind, deaf, tuberculous, etc., for the work of the conference. The program dealt with the following subjects: 1. Economic and social value of rehabilitation. 2. The training problem: (a) The vocational handicap in relation to the individual training program; (b) Is a time schedule for various courses desirable? (c) Should rehabilitation be extended or restricted. 3. Illiteracy among disabled ex-service persons and its relation to rehabilitation. 4. The need for national training centers, such as that opened at Camp Sherman. 5. Placement training; its method and evaluation. 6. Land settlement for trainees through government action. 7. Should the concept of rehabilitation be large

or small? The conference will also discuss the value of visual education in the program of rehabilitation.

**Reorganization of Public Health Activities of the Philippines.**—The International Health Board of the Rockefeller Foundation has accepted an invitation to cooperate in carrying out the general scheme of reorganization of the public health activities of the Philippine Islands. This cooperation will consist in supplying certain members of its staff and providing specialists in various lines of public health work. The program adopted by the government includes the ultimate consolidation of all health functions in a single department. As one important part of the plan, an assistant will be provided for the director of the bureau of science, who will be expected to advise in the further development of that bureau, which has already made notable contributions to various scientific problems. The biologic laboratory, which is one department of the bureau of science, is to be expanded in order to serve as the central public health laboratory of the Philippines, with local laboratories in the provinces. Dr. Victor G. Heiser, director for the East of the International Health Board, and formerly director of health for the Philippine Islands, who is now in New York, will go to Manila, in February, to assist in carrying out the program.

**Occupational Therapy and Prevocational Training.**—The director of the U. S. Veterans' Bureau has approved a plan for occupational therapy and prevocational training in hospitals. To execute the plan, it will be necessary to provide (1) personnel; (2) equipment; (3) expendable material; (4) suitable space. An estimate of the personnel required increases the present force by 200, classified as follows: Trade and industrial teachers, fifty; commercial or academic teachers, fifty; occupational aides, 100. According to the general outline of the policy, one teacher will be required for every twenty men at work or for every forty men in the hospital, exclusive of the administrative force, as it is estimated that only 50 per cent. of the patients will be available for this work. Personnel and equipment are furnished in the various hospitals as follows:

**National Soldiers' Homes:** The Veterans' Bureau is furnishing personnel and equipment for reconstruction work, including occupational therapy, prevocational training and physiotherapy.

**Navy Hospitals:** Personnel, equipment and material for reconstruction service are furnished by the Veterans' Bureau, the personnel working under the direction of the medical officer in command.

**Army Hospitals:** The army will operate the entire reconstruction program for the veterans and submit monthly statements, prorating to the bureau its proportion of the expense incurred.

**Contract Hospitals, State and County Institutions:** The personnel and equipment for the work in these hospitals has been and will continue to be furnished by the bureau. This work should be established in hospitals in which there are fifty or more Veterans' Bureau patients and continued in the smaller hospitals in which it is now established until the number available for the work is reduced to twenty.

**Public Health Hospitals:** The Public Health Service furnishes all personnel and equipment for physiotherapy and for occupational therapy. The personnel for prevocational training is supplied by the Veterans' Bureau, all members working under the direction of the medical officer in charge.

**Causes of Death for 1920.**—The Bureau of the Census has just issued a preliminary announcement of the mortality statistics for 1920. During that year there were 1,142,558 deaths within the death registration area, representing a death rate of 13.1 per thousand population as compared with 12.9 in 1919. The record for the year 1919 was the lowest rate recorded in any year since the registration area was established. The following states are still outside of the registration area: Alabama, Arizona, Arkansas, Georgia, Idaho, Iowa, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, West Virginia and Wyoming.

Among the special features to which attention is called is the continued increase in the death rate from pneumonia; from 123.5 per thousand, in 1919, to 137.3, in 1920. For organic diseases of the heart, the rate increased from 131.0 to 141.9—and for cancer from 80.5 to 83.0. Among other diseases for which the rate increased are whooping cough, measles, cerebral hemorrhage, congenital debility and malformations, puerperal fever, scarlet fever and appendicitis. Fatalities caused by automobile accidents and injuries increased from 9.4 per thousand, in 1919, to 10.4, in 1920. The rate for diabetes increased from 14.9 to 16.1. Decreases occurred in the death rate from tuberculosis from 125.6, in 1919, to 114.2, in 1920; influenza from 98.8 to 71.0, and suicide from 11.4 to 10.2.

Special bulletins have been issued on the mortality rates from organic diseases of the heart, cancer, and tuberculosis.



The trend of the death rate from organic diseases of the heart is in general upward, the highest rate being 153.8 for 1917. Cancer was responsible for the death of some 89,000 persons in 1920. This rate also tends to increase, the rate for 1920 being higher than that for any earlier year in twenty-two of the thirty-three states listed. The rate signifies that practically one death in each thirteen is due to cancer. The Northern states have comparatively high and the Southern states comparatively low cancer mortality. The adjusted rates for the white and colored races indicate, however, that the two are equally susceptible. For tuberculosis the trend of the rate is downward, the rate for 1920 being the lowest ever recorded for twenty-nine of the thirty-three states. Curiously enough the highest tuberculosis death rate for 1920 is that of Colorado and the lowest that of Utah, the high death rate for Colorado being due to the attractiveness of the Colorado climate for those afflicted with tuberculosis.

Among the methods chosen for suicide, firearms are most popular, hanging or strangulation, poison, asphyxia, cutting instruments, drowning, jumping from high places and crushing following in the order mentioned.

The rate for smallpox was 0.6 for 1920 and 0.4 for 1919, an interesting commentary on the success of vaccination as a preventive of this disease.

### LATIN AMERICA

**Memorial to Penna.**—A bust of the great Argentine epidemiologist, Dr. José Penna, was recently unveiled in the hall of the medical department of the University of Buenos Aires. It was installed by the Academia de Medicina, which holds its meetings there. Penna having been one of the most active members of the organization, as well as chief of the national public health service.

**Prizes Granted in Honduras.**—At the recent contest held by the *Revista Médica-Quirúrgica*, prizes were given as follows: first prize, gold medal, pharmacologic section, to Dr. L. Alvarenga, for his "Treatise on Botany"; medical section, to Dr. S. Nuñez, for his paper on "Hookworm Disease"; second prizes to Drs. A. Padilla, R. Aguilar, L. Alvarenga and F. Cortés R.; third prizes to Drs. M. Quijano Hernández, R. Aguilar and J. A. H. Tifer; fourth prizes to Drs. R. B. Zepeda, H. A. Aragón, J. S. Sepeda and R. Aguilar.

**Fifth Cuban National Congress.**—The recent medical congress held at Havana, Cuba, was a great success, being attended by more than 1,500 physicians. It was divided into eight sections, five of which were devoted to medical subjects, one to pharmacy, one to odontology and one to veterinary medicine. Among the resolutions adopted was one asking the government to send a commission to attend the annual conference held by medical schools of the United States and another requesting that foreign physicians be licensed to practice their profession only after passing an examination in Spanish.

**Personal.**—Dr. M. Peralta, a prominent physician of Costa Rica, has returned to his country after being operated on in Philadelphia.—Dr. Nieves C. Barrio of Madrid, Spain, is spending some time in Rochester, Minn.—Dr. Ramón Clares of Chile is now in New York.—The *Semana Médica* relates that Dr. José Arce, professor of surgery at the University of Buenos Aires, has been elected rector for the 1922-1926 term.—Dr. G. Bosch Araia was elected honorary member of the Italian Societa di Ortopedia at its recent annual meeting in tribute to his work in the line of cineplastic amputations.—A petition is being circulated in Buenos Aires appealing to the government to appoint Dr. E. R. Coni member of the board in charge of the sanitary works of the country, as a token of the public gratitude for his indefatigable labors in behalf of public health and hygiene.—A bust of the late surgeon, Dr. Arnaldo Vieira de Carvalho, was recently installed in the large hospital at S. Paulo, the scene of his labors. His name has also been conferred on the newly organized Radium Institute at S. Paulo. The director of the institute is Dr. O. Pires de Campos; the clinical director, Dr. D. de Faria, and the technical director, Dr. O. Portugal. The *Brasil Médico* states that 1.04 gm. of radium bromid has been ordered from New York.

### FOREIGN

**Plague in Java.**—The *Nederlandsch Tijdschrift* states that there were 1,371 cases of plague reported in Java in October, all fatal. The total for September was 1,110, for August, 928, and for July, 430.

**Centennial of German Naturforscher Society.**—The Naturforscher Congress to convene at Leipzig, Sept. 17-23, this year, is to be a special occasion as it is the centennial of the founding of the Gesellschaft Deutscher Naturforscher und Aerzte and there will be an exhibition in connection.

**Russian Medical Journal Appears.**—For the first time in several years a medical journal in the Russian language has reached our table. This is the *Meditinsky Rabotnik*, Vol. 1, No. 1. It is published at Vladivostok in Siberia, and contains six original articles on plague at Vladivostok in 1921, typhoid spondylitis, protein therapy and rupture of the bladder.

**Congress of Hygiene.**—There is being organized by Dr. Borrel, professor of hygiene and director of the institute at Strasbourg, a congress of hygiene to be held at Strasbourg in the spring of 1923. Dr. Borrel desires to attract groups of physicians in the United States to the congress, and would welcome exhibits of societies, institutions, or dealers in drugs, instruments and medical supplies, from the United States.

**Tribute to Spronck.**—Professor Spronck retired in 1919 from the charge of the Pathology Institute of the University of Utrecht, and recently his portrait was presented to the institute by a committee of former pupils and other friends, and the ceremony was supplemented by presenting him with a souvenir album of the institute and of those that had worked there with him. De Josselin de Jong is the present director.

**Welfare Work for Children in the Netherlands.**—On the initiative of Professor Scheltema of Groningen, the Netherlands Association for Child Hygiene organized recently a week of lectures held in six different cities. The lectures were delivered by Professor Nobécourt of the chair of pediatrics at Paris, and were open to the members of the association and their invited guests, the university authorities, and medical students.

**The "Picture Archives."**—A society has been organized at Freiburg i. B., the headquarters in the publishing house of T. Fischer, which aims to publish the *Bildarchiv*, the purpose of which is to collect and make possible the rational utilization of important scientific illustrations for teaching and other purposes. Besides a central headquarters for negatives and illustrations, it is proposed to make possible the publication of illustrations in a more perfect form than private individuals might realize.

**The English Language in Germany.**—The German authorities are discussing whether to make the study of English compulsory in the preparatory schools. Hitherto French has been compulsory and English optional. The *Münchener medizinische Wochenschrift* urges physicians in general by every means to advocate making English compulsory, saying in conclusion: ". . . Since scientific research in the United States has made such advances, thanks to the wealth of the country, and American literature is on the point of taking the lead in medicine, a knowledge of English has become indispensable for the research worker." The editorial remarks that young physicians planning to settle in other countries had better be trained in English, which is the predominant language on four continents, rather than in French, as German physicians may be long debarred from settling in French-speaking countries.

**Memorial to Magnan.**—As already mentioned, an appeal is being circulated by an imposing committee headed by Clemenceau, and including the deans of all the French universities, presidents of a number of medical societies, senators, and others besides a long list of eminent neurologists, psychiatrists and physicians in general, the aim being to erect a monument to the late Dr. V. Magnan, chief of the Ste. Anne asylum at Paris for so many years, whose influence on psychiatry was felt beyond the confines of France, president of the Académie de médecine, etc. Those contributing 40 francs will receive a plaque representing the monument. It is to be unveiled at the asylum on the occasion of the celebration of the centennial of the discovery of general paresis by Bayle, next May. The treasurer of the fund is M. Masson, the publisher, 120 Boul. Saint-Germain, Paris. The secretary of the committee is Dr. H. Colin, Asile de Villejuif, Seine.

**Organization of Pharmacists to Combat Quackery.**—The *Deutsche medizinische Wochenschrift* quotes with approving comment a circular recently sent by the Apotheker-Vereinigung of Balingen-Ebingen to all the pharmacists in its district. The circular states: "At the present time in which quackery



in our district has increased to such an extent, physicians and pharmacists must stand together to protect their mutual interests. It would undoubtedly hamper the work of charlatans if their remedies could not be obtained in the local drug stores, and if the pharmacists declined to make up their prescriptions. The pharmacists of the district are hereby requested to sign this agreement not to dispense the prescriptions of the quacks in this district." Our exchange adds: "This action should be given the widest attention. It should apply to all pharmacists, and it must be the task of medical organizations (medical chambers and *standesvereine*) to exert their influence so that no pharmacist will make up a prescription for a quack."

#### CORRECTION

**Hospital News.**—Dr. William G. Symon, Garret, Ind., states that he will remain with the Garrett (Ind.) clinic, and the report that he was to be associated with the management of the Hillcrest Hospital, at Hemet, Calif., as announced in THE JOURNAL last week, is an error.

### Government Services

#### Radio Health Information Service

A radio health information service has been established by Surgeon-General Cumming of the U. S. Public Health Service. Twice each week radio-telephone messages are to be sent out from Washington—Tuesday at 4 p. m., and Friday at 9 p. m.—the Tuesday schedules to have a range of 250 to 300 miles and the Friday messages a range of 400 to 1,500 miles. Dr. C. Pierce, Assistant Surgeon-General of the U. S. Public Health Service, and Louis K. Heath, radio expert of the U. S. Public Health Service, will have charge of the dispatching of bulletins. A recent message sent out by the Surgeon-General was picked up by all operators west of the Mississippi River.

#### Proposed Law Governing Medical Corps Promotions

The establishment of a definite law covering promotions in the Medical Corps of the Army is included in proposed legislation that has been submitted to Congress by the Adjutant-General. This legislation provides that an officer in the Medical Corps shall be promoted to the grade of captain after three years' service, to that of major after twelve years' service, to the grade of lieutenant-colonel after twenty years' service, and to the grade of colonel after twenty-six years' service. The purpose of this measure is to promote the efficiency of the medical department of the Army and place every officer in a position whereby he shall know exactly where he stands with regard to promotion and advancement in grade. The legislation was drawn up by Surgeon-General Ireland after the members of his staff had made a careful study of its advantages and disadvantages.

#### Proposed Legislation for Army Nurse Corps

Reorganization of the Nurses' Corps of the Army has been presented to Congress by the medical department of the Army, and the legislation is now being considered by the committees on military affairs of the two houses. One of the provisions of the proposed law limits the number of student nurses to 200 in time of peace, who shall be appointed by the Surgeon-General of the Army after tests of fitness for training as nurses in hospitals and schools maintained by the military establishment. These student nurses shall receive pay at the rate of \$15 per month and allowances for subsistence, quarters, clothing, transportation and laundry. The measure also fixes the ranks of the nurses' corps as follows: superintendent shall have the relative rank of a major; assistant superintendents, director and assistant directors the relative rank of a captain; chief nurses the relative rank of first lieutenants; head nurses and nurses the relative rank of second lieutenants. These nurses also are given authority in and about military hospitals next after the officers of the medical department.

## Foreign Letters

### PARIS

(From Our Regular Correspondent)

Dec. 2, 1921.

#### French Medical Books in South America

Continuing his correspondence on South America, Dr. Marcel Labbé, professor in the medical department of the University of Paris, discusses in his last communication the decrease in the sale of French books in South America since the war. This decrease is not due to hostility to France or discontent with French authors. In science in general, and especially in medicine, French books still lead. In Argentina, Brazil and Uruguay, the fundamental treatises in the hands of students are French. Physicians of these various countries are as well acquainted with French ideas and the names of our professors as if they had studied in France. French medical books are, therefore, currently read. Next to their native tongue, French is the language South Americans know best. The study of French is compulsory in their colleges; furthermore, almost all well educated South Americans have visited France at least once, and many have been there several times. However, French books have to meet competition. In medicine—and especially in mathematics, chemistry and physics—many English, American, German and Italian books are read. English and American books have, to an even greater degree, the same drawback as ours: they are too expensive. German books are cheaper, but they are not liked by the students because they find them verbose, not well worked out, obscure, and difficult to understand. They are read less in the original text than in Italian, Spanish or French translations. Spanish textbooks have but few readers. So far, there have been very few scientific Argentine or Brazilian books. There is especially a lack of good compendiums. There are only works on clinical medicine or books treating some special medical or surgical subject. Thus, the books that serve the student best are French. Labbé says that the reduction in the sale of French books is due, above all, to the high prices. Readers limit their purchases to indispensable books; they also buy second-hand books and borrow some from libraries. By some means or other, the price of books must be reduced, and, in order to accomplish this, the cost of paper must come down and demands from printers must become more reasonable. On this depends the maintenance of our intellectual influence in foreign countries. The increase in the publishers' prices for French medical books is not the sole reason for the high prices at which they are sold in foreign countries. We must also take into account the exaggerated profits made by the wholesalers. Some booksellers demand excessive commissions on the sale of French medical books and do not allow the purchaser the benefit of the present low rate of exchange. Another reason for the reduction of sales is the scarcity of French books during the war, since a number of Spanish and Portuguese books have been published with the view of replacing them. Even today, although the publishing business in France shows great activity, there is not a sufficiently large stock of French books on hand in the large cities of South America. Our publishers do not send enough of them. The stock is too quickly exhausted, and the reader who sends an urgent order for a book has to wait too long for its delivery.

#### Attendance at the University of Paris

Certain information recently published may have led some to believe that the number of students attending the University of Paris, during 1921-1922, is less than last year. In reality, the statistics published up to November 15, show, on the



ontrary, a net increase of 774 students. The university has enrolled 1,110 French students more, and 336 foreign students less, than last year. This decrease in the number of foreign students is due partly to the present conditions in Russia, which in prewar days furnished Paris with a good-sized contingent of men and women students. It is also possible that the conditions of exchange in certain countries of central Europe prevent students from taking up their medical studies in Paris.

#### The Shamelessness of Manufacturers of "Patent Medicines"

An article entitled, "Applied Therapeutics; Mistletoe as a Hypotensive Medicament," was recently published in the *Journal des praticiens*. In this article a number of works were mentioned (among others, those of Dr. René Gaultier) purporting to show "the superiority of guipsine and preparations of fresh mistletoe over other hypotensive medicaments, such as the iodids, the nitrites, ethereal nitrites, and various other drugs which have been tested and which have successively disappeared from current therapy on account of the inconstancy of their effects and the secondary disturbances they produce." Dr. René Gaultier has sent to the *Journal des praticiens* a vigorous protest "against this false assertion," for, as he says, in none of his researches on mistletoe (a medicament that he introduced), has he ever spoken about guipsine, and consequently has never praised the superiority of that product. The manufacturer simply made an unauthorized use of Dr. Gaultier's name to advertise his product. In answer to Dr. Gaultier's letter, the managing editor of the *Journal des praticiens* stated that as the article entitled "Applied Therapeutics" had not been edited by the editorial department he could not vouch for the accuracy of the bibliographic information. How regrettable it is, however, that any part of a medical journal should escape the control of the editorial department and tend to mislead its readers. There were good and sufficient reasons for the notice that appeared in one of the most important French medical journals of prewar days, the *Semaine médicale*: "The *Semaine médicale* accepts no paid insertions other than regular advertisements."

#### Retirement of Dr. Brocq

Dr. Brocq, the dermatologist, having reached the age limit, has retired from active hospital service. In celebration of his services, his pupils and friends gathered at the Saint Louis hospital and presented to him his bust designed by the sculptor Landowski. Dr. Veillon, bacteriologist of the Pasteur hospital, presided over the ceremony, he being Brocq's oldest pupil. Among the speeches delivered on this occasion, that of Professor Ehlers of Copenhagen, speaking in the name of the Danish Society of Dermatology, was especially notable. Ehlers is the oldest foreign pupil of Brocq. He began his career in Paris in 1889-1890, when Brocq was filling the place of his teacher, Professor Vidal, at the Saint Louis hospital.

#### Death of Dr. Gustave Mignen

Dr. Gustave Mignen, founder of the first medical syndicate of France, honorary president of the Federation of Medical Syndicates, died recently in Montaigu, department of Vendée, at the age of 73. The plan of creating medical syndicates was first proposed by Dr. Margueritte of Havre; but it was in 1881 that Mignen brought about its realization.

#### A New Chair in the Medical Department of the University of Paris

Owing to a grant from the city of Paris, a chair of clinical propedeutics has been created in the University of Paris. Dr. Sergent, physician to the Charité hospital, who is known for his work on suprarenal insufficiency, has been appointed

the first incumbent. This appointment constitutes a fact almost without precedent, for Dr. Sergent did not belong to the instructional corps. He had failed previously to secure an appointment as associate professor, but he did not become discouraged. The example set by Lucas Championnière who suffered a similar mishap gave him some hope. He went back to work and has had a brilliant career. Within a period of twenty years he became a member of the Academy of Medicine and has now secured a chair in the medical department of the University of Paris—a rather tortuous road to his goal.

#### LONDON

(From Our Regular Correspondent)

Dec. 3, 1921.

#### Protection Against Anthrax

A small trial station for the disinfection of wool and hair against anthrax bacilli has been erected by the government at the Liverpool docks. Provision is made for storing and rebailing and for the recovery of grease. The method adopted is to remove from the material treated the natural protection of the anthrax spores and to render them susceptible to the action of disinfectants. The material is first submitted to the action of an alkaline solution of soap maintained at a temperature of 102 F. for thirty minutes, in three stages of ten minutes each. It is then disinfected with from a 2.0 to a 2.5 per cent. solution of formaldehyd, also at 102 F. for twenty minutes, in two stages of ten minutes each. The bales of wool or hair are hoisted by machinery onto the traveling platform of a specially devised automatic feeding machine provided with an exhaust fan to prevent dissemination of dust, and are delivered into the boiler furnace. The disinfecting plant consists of five baths, each 33 by 4 feet (10 by 1.2 meters), which are fitted with squeezing rollers and a mechanism of the harrow type which causes the material to pass through liquids. The first three baths contain the solution of soap and, incidentally, wash the material; the last two contain the formaldehyd. To prevent the escape of the formaldehyd vapor, the latter baths are enclosed by airtight covers. When it is necessary to empty the baths or to purify the disinfecting solution, the latter is run by gravity into storage tanks, from which it can be pumped back into the machines, the connecting pipes being so arranged that all displaced air passes from the tanks to the machines, and vice versa. The strength of the solution is maintained by adding strong formaldehyd at intervals. To do this, the machines are provided with a measuring device. The material passes from the disinfecting machine into a wool-drying machine, arranged to prevent the escape into the room of formaldehyd vapor, and in which the material is dried in a current of hot air. To guard against infection, all workmen are provided with overalls. The process is described as the "Duckering" disinfecting process, after its deviser, Mr. G. E. Duckering, secretary of the anthrax committee, who is now director of the station.

#### The Arsphenamin Treatment of Syphilis

Notwithstanding the vast experience in the treatment of syphilis by arsphenamin and arsphenamin compounds, profound disagreement exists as to the mode of administration and the value and the dangers of the method. At the Medical Society of London, a discussion of the subject was opened by Col. L. W. Harrison, who is in charge of the military hospital for the treatment of venereal diseases in London. He stated that the modern arsphenamin was not nearly so efficient therapeutically as the preparation issued in 1910. The latter was certainly more toxic but the elimination of toxicity seemed to be accompanied by diminished therapeutic effect. The modern arsphenamin was, however, superior in efficacy to neo-arsphenamin; sodium arsphenamin seemed to



be between the two. Silver arsphenamin was probably, as was **claimed**, about twice as effective as neo-arsphenamin in similar doses. The mode of administration influenced the effect of all these drugs. The vasomotor symptoms which followed intravenous injections of arsphenamin compounds seemed to depend on the physical state of the solution. He found arsphenamin much more prone to cause vasomotor symptoms than neo-arsphenamin, and silver arsphenamin would almost assuredly upset the patient unless it was well diluted. Of the neo-arsphenamin class of preparations, those which dissolved with difficulty were more liable to upset the patient when given in concentrated form. He did not agree with the injection of arsphenamin week after week according to a set program, without careful scrutiny of the patient before each dose. Fatal jaundice after administration seemed to occur in little groups, pointing to some adjuvant factor in its causation. He considered that the reliance placed on continued treatment with mercury after the Wassermann reaction became negative was not justified. Nobody knew how much activity was hidden behind the veil of a negative Wassermann reaction. If arsphenamin were only a symptomatic remedy, its use in the routine treatment of syphilis would be condemned; but it was the strongest specific remedy that we possessed. He upheld the method of chronic intermittent administration, not of mercury only, but of mercury and arsphenamin throughout the whole period of the treatment.

In the discussion which followed, Dr. J. W. McNee said that, among 75,000 patients treated for syphilis at the centers in one year, only ten deaths were reported as due to arsphenamin, and seventy-seven cases of ill effects. But these figures could not be taken as strictly accurate. Deaths might be reported as due to acute yellow atrophy of the liver and other conditions; for to say that death was due to arsphenamin on the certificate was equivalent to saying that the disease was syphilis.

#### Graduate Medical Teaching

In the coming year, the Fellowship of Medicine and Post-Graduate Association has arranged a series of courses for graduates, which will be of two kinds. There will be instruction in general medicine and surgery of the nature of review courses, and instruction in special subjects, such as gastro-enterology and pediatrics. In January, a six weeks' course in medicine will begin at various special hospitals. It will include neurology, pulmonary diseases, cardiology, pediatrics, fevers and infant welfare. The course has been so arranged that each day the meetings, as far as possible, will be at hospitals near one another. This will avoid the loss of time in going from hospital to hospital, which is the great drawback in this immense city.

#### Medical History of the War

The first volume of the medical history of the war has been completed by Major-Gen. W. G. Macpherson, editor-in-chief, and will shortly be published. The price is \$5. The series is so planned as eventually to comprise twelve volumes: General History of the Medical Service (four volumes); Diseases of the War and the Medical Aspect of Aviation and Gas Warfare (two volumes); Surgery of the War (two volumes); Hygiene of the War (two volumes); Pathology and Medical Research During the War (one volume); Medical Statistics and Epidemiology of the War (one volume). The first volume is a record in narrative form of medical services in the United Kingdom and in the garrisons overseas, with an account of the medical services in the operations against the German colonies in West and Southwest Africa and in Tsingtau. As regards the operations in Southwest Africa, it is stated that the mortality rate from typhoid fever in the South African War, 1899-1902, was 33.8

per thousand average strength for the whole period, the annual ratio being 14.7. In the German Herrero campaign the ratios were 46.5 and 16.3, respectively; while in the South-western African campaign, 1914-1915, the ratios were only 0.78 and 0.75, respectively.

#### BUDAPEST

(From Our Regular Correspondent)

Dec. 1, 1921.

#### The Influence of Hereditary Alcoholism on the Ability to Suckle

Dr. Zana, director of the Infant Asylum read a paper recently on the influence of hereditary alcoholism on the ability to suckle infants. He said that according to the researches of foreign authors, particularly Dr. Bunge in Germany, the alcoholism of the father at the time of fecundation affected for the worse the germ cells of the fetus so that the mammary glands of the female offspring became stunted in growth and disabled for suckling. This opinion does not seem to rest on very firm ground. In Denmark, Holland and Silesia, and in other parts of the continent in which alcoholism is prevalent, the percentage of suckling women is relatively great. Dr. Zana had made a collective investigation and has found that of daughters of drunkards more than half were able to suckle freely, while in 14 per cent. of the cases the women had suckled the first but not the second child nor the children following. He had further ascertained by experiments on rats fed with alcohol that the mammary glands of the female progeny were quite normal.

#### Cancer of the Lip

At a recent meeting of the Budapest Medical Society, Dr. Vereb ty read a paper giving statistical details of the cases of cancer of the lip which have been under observation in his clinic during the last seven years. He said that labial cancer was ten times as frequent in men as in women, and that cancer of the lower lip was twelve times as frequent as that of the upper lip. All parts of the lower lip were alike liable to attack; in the upper lip, on the other hand, the favorite site of the disease was the middle part. Cancer of the lip was most frequent in agricultural laborers and men who smoked pipes. It occurred most between the ages of 55 and 60 years. Preceding inflammations, psoriasis, leukoplakia and scars had an important influence in the development of the disease. As regards the period of admission to hospital more than 84 per cent. of the patients presented themselves within the first year following the onset of the cancer, and in 76 per cent. of the cases the parts were already ulcerated. In 67 per cent. of the cases, there was a regional glandular infiltration present. Of the patients operated on, 69.6 per cent. have now remained free from recurrence for more than five years. In two thirds of the cases in which there has been recurrence, death ensued in the course of the first year.

#### Scarlet Fever in Hungary

In view of the increase of cases of scarlet fever in Hungary, the minister of public health has addressed a circular to the medical men under his control exhorting them to make a free use of scarlet fever serum (streptococcus serum, and if necessary diphtheria serum, both prepared in the state bacteriologic laboratory and distributed free to poor patients). The circular states that when used early, the first or second day at least of the malady, the mortality was considerably reduced, whereas when delayed two, three or four days, the chances of the patient were considerably compromised.

#### Infant Mortality in Hungary

The vital statistics for last year, first published, show that although the general mortality has notably decreased that of



infants has scarcely been affected. It would seem that all the hygienic advances which have been made during past years, and which have proved so beneficial to the population at large, have hardly touched the fringe of infant mortality. Its magnitude is accounted for by alimentary disturbances, diarrhea, too frequent feeding, feeding with infected milk, etc. Experiments were made in Budapest with cow's milk from different suburbs, and it was found that dirt was invariably present, varying in amount from 1 to 72 mg. per liter. The first milkings always contain the most dirt, the amount of which decreases proportionately as the milking proceeds. From a hygienic standpoint, it would be wise to discard the first milkings.

## BERLIN

(From Our Regular Correspondent)

Dec. 7, 1921.

### The Rôle of the Physician in the Regeneration of the People

At a recent meeting of the Berlin Medical Association, after homage had been paid to Rudolf Virchow on the occasion of his hundredth birthday anniversary, the first sessions were devoted to the problem of the regeneration of the people. The subject was introduced with an address by Prof. Paul Lazarus, who discussed the causes and the extent of the extraordinary undermining of public health. Among the causes for the existing condition (for which statistics were adduced) may be mentioned: the extermination, by contraselection, of those most highly resistant to bacterial disease and the preservation of domesticated weaklings, as the result of the war; the increase of affections of an epidemic character, such as rachitis, tuberculosis and venereal diseases; the degeneration due to physical shock, and the intensified struggle for existence; furthermore, the eagerness to get away from rural life, resulting in the agglomeration of the masses in the large cities, which now contain a fourth of the total population. Also alcoholism and the use of tobacco have increased tremendously. Every third house or building in Berlin contains a place devoted to the sale of intoxicating beverages. The number of bars has increased eightfold, of late. Since 1875, the consumption of cigarets has increased 5,800 fold.

The poor housing conditions in the large cities add to the wretchedness of the situation. A deflection from the large cities and the systematic development of the rural districts—an internal colonization, as it were—must, therefore, be brought about as the greatly needed biologic remedy. Prophylactic treatment, instituted in early childhood, must counteract the predisposition to disease. Periodic examinations of supposedly healthy persons are of the greatest importance for the early recognition of incipient pathologic conditions. It is the duty of medicine today to launch and vigorously to defend a well worked-out medical policy. Now, more than ever, we need, for the solution of the many health problems, a ministry of public health detached from all political influence and conducted by physicians, as was proposed by Virchow as far back as 1848, and such as many other countries have already introduced. A reorganization of the public health insurance system is an imperative need for both the physician and the insured, since under the present system the health insurance physician is unable to impress on the masses the requirements of hygiene and health culture. Medicine must get away from hyperindividualism and hyperspecialization and pay more attention to psychophysical hygiene and to preventive treatment from the standpoint of the hereditary constitution of the patient.

Professor Lazarus' address precipitated a lively discussion, which extended over two sessions and dealt mainly with the problem of internal colonization, referred to above. Professor Grotjahn, social hygienist of the University of Berlin,

attacked the pessimism of the lecturer and warned against too harsh condemnation of industrialization and the movement cityward. He held—and introduced tables to prove—that the decrease in mortality from tuberculosis, which began in 1882 in Germany and forty years earlier in England, was due to the industrial and cityward movement that set in. For the reduction in the general mortality rate since 1900, social reasons may also be found, for such reduction rests mainly on the decrease in infant mortality, which, in turn, is due to the decrease in the birth rate. In Grotjahn's opinion, physicians should confine their ameliorative activities mainly to social hygiene.

### The Physiology of Sport Activities

From the report of Dr. Kohlrausch, in whose laboratory, connected with the German university school of physical culture, researches on sport activities are being conducted, to which I referred in a previous letter, I take the following items:

A comparison of the detailed findings secured at the beginning of the semester with the results obtained at the close of the semester yielded objective clinical evidence of over-fatigue due to participation in various sports. It was found that, in harmony with the subjective statements in regard to overexertion during the sport activities of the semester, acceleration of pulse, slower return to normal following exertion, and, in some instances, also changes in the heart sounds, could be noted. Pronounced overexertion was frequently followed by loss of weight. Of those examined at the beginning and at the end of the semester, 40 per cent. showed an increase of weight, 1.45 kg. (3 pounds), on the average. Fifty per cent. had decreased in weight, 1.58 kg. (3½ pounds), being the average amount. With a decrease of more than 2 kg. (4½ pounds) was associated, for the most part, an accelerated pulse and a slower return to normal after exertion. A loss of weight of more than 2 kg. in subjects weighing, say, 66 kg. (145 pounds), must, therefore, be regarded as excessive. The testing of lung capacity showed values that greatly exceeded the commonly recognized standards. Whereas the average lung capacity (vital capacity) for an adult is placed at 3,500 c.c., there was only one student who fell below this standard, while the average finding was 4,500 c.c., and 6,000 was exceeded in six instances. The increases in lung capacity were, in some cases, quite marked, ranging from 50 to 700 c.c. It is worthy of note that growth also could still be influenced. In 74 per cent. of the subjects, there was an average increase of 1 cm. (¾ inch) in size of the lungs. This increase may, it is true, be due to a better posture or a straightening of the spine. Chest expansion also increases. In 62 per cent., the increase was 1.7 cm. (1½ inch), on the average, from 7.05 up to 8.75 cm., denoting an increase of 24 per cent. In a number of students, there was an increase in the length of the leg; also in breadth of shoulders and depth of chest. The span of the arms was increased in about 70 per cent. by 2 cm. (2½ inch), on the average. This throws a sidelight on American observations to the effect that the arm-span of white workmen is greater than that of those who do not toil, and shows that growth is not necessarily completed with the twentieth or even the twenty-second year, provided these findings are confirmed by the results in larger series. The relative arm-span; that is, the arm-span in proportion to height, was 104.4 per cent., not materially greater than the average for Germany. However, the relative length of leg was 54.7 per cent. as compared with a normal of 53.8 per cent., which shows the importance of long legs in sport activities. A relative chest measurement of 53.7 per cent. as against a norm of 50 per cent. speaks well for the effect of physical exercises on chest development. The body fullness index of 1.28 testified to a good average state of nutrition.



Former observations were confirmed by an examination of the muscular development. Those who were engaging in sports requiring the exercise of great strength found that the circumference of the arm at the biceps had increased up to 4 cm. ( $1\frac{1}{16}$  inches), whereas, in lightweight athletes, there was a decrease. (Only changes of circumference of more than 1.2 cm. ( $1\frac{1}{32}$  inch) were recorded.) Swimmers showed, as a rule, an increase in upper-arm measurements, doubtless due to an accumulation of subcutaneous fatty tissue.

Studies were also made on the types of men who engaged in the several sports. Especially the swimmer type was studied in a number of excellent swimmers. They were found to have a long torso, long arms, a strong well-arched chest, and a firm skin well supported with adipose tissue.

#### Sixtieth Birthday Anniversary of Professor Bier

On November 24, Prof. August Bier celebrated his sixtieth birthday. His book "Ueber den Wert der künstlich aktiven und passiven Hyperämie," dealing with the so-called Bier hyperemia is known throughout the world.

#### Professor Haertel's Appointment

Professor Haertel, chief of the surgical clinic in Halle, has been called to the University of Osaka, Japan, as ordinaris and director of the surgical clinic. Haertel was formerly connected with the Berlin Pathologic Institute and while so engaged was associated with certain Japanese, which fact led to his present appointment.

### PRAGUE

(From Our Regular Correspondent)

Dec. 3, 1921.

#### The State Budget

The recent discussion of the state budget in parliament has shown that the ministry of public health and physical education has been strengthened by the appointment of a socialist to the position of minister of health. The budget of the ministry of health for 1922, which is nearly double the budget for 1921, has been warmly recommended to the parliament by socialistic deputies. This has been a surprise as under the régime of previous ministers, the socialists always defended the idea of combining the ministry of health with the ministry of social welfare. The budget of the ministry of health will form 1 per cent. of state expenditures for the year 1922. Of 149,000,000 crowns, 37,000,000 will be given for the nationalization of hospitals. The budget has encountered virtually no criticism and has been passed by parliament. This change of attitude on the part of socialistic parties toward the ministry makes it probable that the bills that the ministry submitted to the parliament some time ago will find the necessary majority. Interest lies chiefly in the venereal diseases bill, which has been pending in the parliament for more than six months. The bill which proposes to nationalize all health officers will probably be postponed because of the wave of economy that has flooded the country.

#### Popular Health Education

The league of Red Cross societies has undertaken a demonstration of popular health education in Czechoslovakia. The work was started early in the year, under the direction of Mr. Marshal C. Balfour. A unit has been organized along the lines of those used by the Rockefeller Foundation in France. The unit is using three full-time physicians, one of them a woman, as lecturers. The unit prepared its own educational material, pamphlets, postcards and posters. Lectures are given to school children, soldiers and the general public on the topics of tuberculosis, child hygiene and venereal disease. Since the time when it was started, the unit has

visited about sixty communities and has been received with great success everywhere. Recently, a demonstration was organized in a town near Prague for people prominent in the field of public health and for representatives of the press. All the leading papers have published sympathetic articles on the excellent work the unit is doing. The unit will be taken over at the end of the current year by the Czechoslovak Red Cross, which is considering the possibility of establishing another unit to work especially in Slovakia. It is also probable that the ministry of health will establish a permanent division for public health education.

#### Tuberculosis Survey

Dr. Jaroslav Hulka, former student of the Phipps Institute in Philadelphia and of the Trudeau School of Tuberculosis at Saranac Lake, has just finished a tuberculosis survey of Czechoslovakia. The work was entrusted to him by the ministry of public health. Based on five-year averages of tuberculosis mortality, he has found that Czechoslovakia occupies fifth place in the list of nineteen countries, arranged in a decreasing scale according to their tuberculosis mortalities. Czechoslovakia undoubtedly still belongs among the countries with high tuberculosis death rates; but at the same time, the author points out that it is a country in which tuberculosis has been rapidly decreasing for the last thirty years. The percentage of decrease in the Czech provinces of Czechoslovakia, Bohemia, Moravia and Silesia is about as great as that noted in England and Wales; but the decrease of England and Wales is of an earlier date, which explains the lower tuberculosis mortality of these countries. The tuberculosis death rate of the Czech provinces in 1913 was 285; but it increased 37 per cent. during the war. After the war, the tuberculosis death rate dropped rapidly, and the tuberculosis mortality curves in 1920 reached the point it might have been expected to reach when its antebellum downward trend is considered.

In Czechoslovakia, there was no well developed antituberculosis campaign before the war. But the hospitalization and national prosperity developed rapidly, and has had a good influence on the tuberculosis mortality.

The new republic created a division of social diseases in the ministry of public health, which handles the tuberculosis problems. A new antituberculosis association was organized, which, called after the name of the first president of the republic the Masaryk Antituberculosis League, has about 100 local branches and 20,000 members. There are seventy-two dispensaries, more than fifty of them having been established since the war. Nevertheless, there are at least seventy cities with a population of more than 10,000 in which dispensaries should be established if the antituberculosis fight is to comply with the needs of a country of 13,500,000 population.

There are fifty-one special establishments for the treatment of tuberculosis, including twenty-one hospitals, camps, and sanatoriums for children. There are also seventeen other sanatoriums for adults and thirteen pavilions connected with general hospitals. The total number of beds is, however, only 4,000, approximately. Dr. Hulka says that, considering the number of tuberculosis deaths occurring yearly, at least 20,000 tuberculosis beds should be provided in Czechoslovakia.

The chief criticism of Dr. Hulka concerns the tuberculosis nursing situation. He states that in the seventy-two dispensaries there are only sixteen nurses with professional training, the rest having had only short courses in nursing. He suggests a large plan for the training of tuberculosis workers, including nurses, secretaries of the local associations, and tuberculosis medical officers.

Professor S. M. Gunn, representative of the Rockefeller Foundation, assisted in the survey, which will be reported within a few months, with an abstract in English.



# THE REFERENDUM ON THE USE OF ALCOHOL IN THE PRACTICE OF MEDICINE

(Continued from page 2140)

On December 24, THE JOURNAL published the results of the referendum on the use of alcohol in the practice of medicine in Illinois and Indiana. Last week appeared the reports on Idaho, Kansas, Maine, Mississippi, Nebraska and Rhode Island. This week results are given for eleven states, viz.: Arizona, Colorado, Connecticut, Delaware, Georgia, Iowa, Michigan, Montana, North Dakota, Ohio and Pennsylvania. Under "Comments," in each state, are printed selections from some of the replies; lack of space prevents giving more than a few of these comments.

## ARIZONA

The prohibitory law in Arizona became effective on Jan. 1, 1915. There is no provision in it for the sale of alcoholic liquor or alcohol as a medicine either on prescription or otherwise.

Questionnaires were sent to 173 physicians in Arizona; 110, or 64 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 55; no, 53.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 29; no, 81.

## RESULTS IN ARIZONA

Number of physicians.....	380
Questionnaires sent .....	173
Questionnaires returned .....	110
Percentage of returns.....	64
General practitioners .....	94
Surgeons .....	7
Specialists .....	9
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	55
No .....	53
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	29
No .....	81
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	37
No .....	73
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	34
No .....	74
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable....	25
Number of physicians stating no times advisable..	42
Beer: Number of physicians stating times advisable.....	10
Number of physicians stating no times advisable....	53
Wine: Number of physicians stating times advisable.....	15
Number of physicians stating no times advisable....	54
Do you hold a federal permit?	
Yes .....	4
No .....	27
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	19
Restricted absolutely .....	12
1 to 50 prescriptions.....	11
51 to 100 prescriptions.....	11
More than 100 prescriptions.....	0
Total .....	53
No restriction .....	51
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	56
No .....	52

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 37; no, 73.

On the question whether physicians had witnessed cases of unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 34; no, 74.

On the question as to the number of times physicians had found it advisable to prescribe whisky, 25 had found it advisable, and 42 had not found it advisable; 10 had found it advisable to prescribe beer, and 53 had not found it advisable; 15 had found it advisable to prescribe wine, and 54 had not found it advisable.

Four physicians stated that they held federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 53 stated that they should be restricted, and 51 did not believe such restrictions necessary; 19 answered yes, but did not specify a limit; 12 believed in absolute prohibition; 11 believed from 1 to 50 prescriptions in three months sufficient; 11 believed from 51 to 100 sufficient, and none considered the amount required to be more than 100 in three months.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 56; no, 52.

## COMMENTS

As to restrictions—they are necessary, just as narcotics. True, there are many doctors willing to prostitute their profession for pecuniary gains. If they were restricted to prescribing in therapeutic doses it would be better than to restrict the number of prescriptions—theoretically, at least.—*Clemenceau*.

Since Arizona has gone dry, the working man's family is much better off and the doctor's bills more promptly paid. While there is plenty of bootleg it is not near as bad as when the state was wet. If prescribing whisky, wine or beer were permitted in this state I would be compelled to take out a permit in order to keep my friends and thus retain their legitimate practice. This would, of course, class me as a second rate bartender, which I have no desire to be.—*Globe*.

Having been connected with the care of indigent and criminal elements for the last twenty years, I am convinced that prohibition is the greatest step forward that the United States has made since the Declaration of Independence was signed; and that the manifold blessings in the form of social, mental, physical and financial betterment of all classes of our people, and especially the class likely to become indigent or criminal, cannot be measured. No argument in favor of the manufacture or use of intoxicating beverages can refute the silent argument of the statistics that have been gathered covering only two years of "semiprohibition."—*Cochise County*.

When I have occasion to recommend it, I tell the patient to use it, if he can get it. It is always obtainable, though of inferior quality. Mexican liquor—tequila—which is of high alcoholic content, and a distilled product, I presume would be classed under whisky.—*Tucson*.

In certain cases I do not hesitate to obtain whisky illegally and furnish it to certain patients gratis where it will save life. In certain cases of inoperable cancer, I conspire with judges, marshals, chiefs of police, sheriffs and others, and obtain it and furnish it gratis.—*Globe*.

In the past year I have seen perhaps twenty-five patients who would have, in my opinion, been helped considerably by alcohol in proper doses. However, the Arizona law does not recognize such a state of affairs. In the case of the twenty-five patients mentioned I either procured liquor for them through the sheriff's office or advised them to obtain it by illicit means; in each instance definite improvement followed.—*Phoenix*.

## CONNECTICUT

Connecticut, with the exception of a local option law, has no state legislation, except a provision that any physician holding a federal permit may prescribe liquor.

Questionnaires were sent to 714 physicians in Connecticut, and 394, or 55 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: New Haven, yes, 39; no, 32; Hartford, yes, 32; no, 28; Bridgeport, yes, 19; no, 13; Waterbury, yes, 18; no, 6; New Britain, yes, 5; no, 0. Total for cities: yes, 113; no, 79; for the rural districts, yes, 125; no, 77; for the state, yes 238; no, 156.

On the question "Is beer a necessary therapeutic agent?" the vote was: New Haven, yes, 22; no, 47; Hartford, yes, 14; no, 45; Bridgeport, yes, 11; no, 21; Waterbury, yes, 8; no, 16; New Britain, yes, 3; no, 2. Total for the cities: yes, 58;



no, 131; for the rural districts, yes, 61; no, 140; for the state, yes, 119; no, 271.

On the question "Is wine a necessary therapeutic agent?" the vote was: New Haven, yes, 24; no, 45; Hartford, yes, 19; no, 40; Bridgeport, yes, 13; no, 19; Waterbury, yes, 12; no, 12; New Britain, yes, 3; no, 2. Total for the cities: yes, 71; no, 118; for the rural districts, yes, 82; no, 117; for the state, yes, 153; no, 235.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of prohibition laws the replies were: yes, 96; no, 283.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 169 had found it advisable to prescribe whisky, and 130 had not found it advisable; 34 had found it advisable to prescribe beer, and 201 had not found it advisable; 82 had found it advisable to prescribe wine, and 173 had not found it advisable.

There is so much red tape connected with the prescribing of alcoholics that I have not taken out a permit.—*Stamford*.

Physicians have been slow in making application for permits to prescribe liquors, for the reason that up until very recently they could be obtained by patients without great difficulty because of the laxity in the enforcement of the prohibition law. But as enforcement becomes more of a reality we become conscious of the loss of a very valuable therapeutic agent. I have just applied for a permit.—*Branford*.

I don't like the idea of the laymen, in legislative halls or out, telling me how I shall practice medicine. I was supposed to have that in college under competent instructors.—*Danielson*.

In my experience, the inability to obtain grain alcohol, clean and pure, is a dreadful handicap in the administration of medication hypodermically, both to sterilize the site of injection and to clean the needle after use, after boiling to remove the water.—*Ridgefield*.

I had a pretty thorough and practical training in pharmacy. It has been my custom to make the majority of the liquid preparations that I dispense. I enjoy doing it and know, absolutely, that such preparations are properly made and that the ingredients are of good quality. The fact that I am unable to obtain pure alcohol for the above purpose compels me to give them up and employ others of uncertain quality.—*Tolland County*.

## RESULTS IN CONNECTICUT

CONNECTICUT	New Haven	Hartford	Bridgeport	Waterbury	New Britain	Total Cities	Rural	Grand Total
Number of physicians.....	318	286	174	109	51	938	791	1,729
Questionnaires sent .....	131	99	62	48	13	353	361	714
Questionnaires returned .....	71	60	32	24	5	192	202	394
Percentage of returns.....	54	61	52	50	38	54	56	55
General practitioners .....	45	35	21	14	5	120	177	297
Surgeons .....	13	11	5	7	..	36	7	43
Specialists .....	13	14	6	3	..	36	18	54
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?								
Yes.....	39	32	19	18	5	113	125	238
No.....	32	28	13	6	..	79	77	156
Do you regard beer as a necessary therapeutic agent in the practice of medicine?								
Yes.....	22	14	11	8	3	58	61	119
No.....	47	45	21	16	2	131	140	271
Do you regard wine as a necessary therapeutic agent in the practice of medicine?								
Yes.....	24	19	13	12	3	71	82	153
No.....	45	40	19	12	2	118	117	235
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?								
Yes.....	16	5	8	6	1	36	60	96
No.....	51	54	24	15	3	147	136	283
How many times have you found it advisable to prescribe these liquors in a month?								
Whisky: Number of physicians stating times advisable.....	26	23	14	16	1	80	89	169
Number of physicians stating no times advisable.....	30	21	15	4	3	73	57	130
Beer: Number of physicians stating times advisable.....	8	2	4	3	..	17	17	34
Number of physicians stating no times advisable.....	39	36	22	14	4	115	83	201
Wine: Number of physicians stating times advisable.....	13	12	3	11	..	39	43	82
Number of physicians stating no times advisable.....	36	31	23	7	4	101	72	173
Do you hold a federal permit?								
Yes.....	22	19	12	7	3	63	70	133
No.....	42	36	17	13	2	110	106	216
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?								
Yes (limit not specified).....	15	9	3	3	..	30	50	80
Restricted absolutely .....	3	3	3	1	..	10	3	13
1 to 50 prescriptions.....	4	3	..	2	..	9	9	18
51 to 100 prescriptions.....	6	17	8	2	..	33	20	53
More than 100 prescriptions.....	..	1	..	..	..	1	..	1
Total.....	28	33	14	8	..	83	82	165
No restriction .....	38	26	18	15	5	102	114	216
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?								
Yes.....	33	32	13	11	2	91	89	180
No.....	34	27	18	12	3	94	102	196

One hundred and thirty-three physicians stated that they held federal permits, and 216 of those replying stated that they did not hold federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 165 stated that they should be restricted, and 216 did not believe such restrictions necessary; 80 physicians answered yes, but did not specify a limit; 13 stated that no prescriptions of any kind should be allowed; 18 considered from 1 to 50 prescriptions in three months sufficient; 53 considered from 51 to 100 satisfactory, and 1 physician considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 180; no, 196.

### COMMENTS

I am in favor of regulation which would follow the lines of the Harrison act. The latter has been found to be fully able to indicate the dishonorable physician who has violated the intent of the law. It should be for the physician, not the politician, to decide the indications and the kind of alcoholic preparations to be prescribed. The number of prescriptions for liquor means very little. It indicates the number of times that liquor has been obtained legally and nothing else.—*Bridgeport*.

## COLORADO

The state prohibitory law in Colorado went into effect on Jan. 1, 1916. Under its provisions registered physicians may prescribe intoxicating liquor in an amount not to exceed 4 ounces, on blanks furnished by the secretary of state, which must be signed by the physician, giving his address and the date and hour on which they were issued, the disease or malady for which the prescription is given, the address of the patient and the number and date of the previous prescriptions for such person during the present year. All prescriptions must be filled within forty-eight hours of the time they were issued.

Questionnaires were sent to 615 physicians in Colorado; 370, or 60 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote in Denver was: yes, 53; no, 69; in the rural districts, yes, 101; no, 145; for the state, yes, 154; no, 214.

On the question "Is beer a necessary therapeutic agent?" the vote in Denver was: yes, 26; no, 97; in the rural districts, yes, 47; no, 195; for the state, yes, 73; no, 292.



On the question "Is wine a necessary therapeutic agent?" the vote in Denver was: yes, 32, no, 88; in the rural districts, yes, 51; no, 186; for the state, yes, 83; no, 274.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 63; no, 287.

## RESULTS IN COLORADO

COLORADO	Denver	Rural	Total
Number of physicians.....	786	1,031	1,817
Questionnaires sent.....	231	384	615
Total questionnaires received.....	123	247	370
Percentage of returns.....	53	64	60
General practitioners.....	81	215	296
Surgeons.....	20	11	31
Specialists.....	22	21	43
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes.....	53	101	154
No.....	69	145	214
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes.....	26	47	73
No.....	97	195	292
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes.....	32	51	83
No.....	88	186	274
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes.....	17	46	63
No.....	100	187	287
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable.....	40	72	112
Number of physicians stating no times advisable.....	59	128	187
Beer: Number of physicians stating times advisable.....	4	23	27
Number of physicians stating no times advisable.....	83	152	235
Wine: Number of physicians stating times advisable.....	11	30	41
Number of physicians stating no times advisable.....	76	148	224
Do you hold a federal permit?			
Yes.....	26	40	66
No.....	72	141	213
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	28	38	66
Restricted absolutely.....	13	38	51
1 to 50 prescriptions.....	7	19	26
51 to 100 prescriptions.....	21	41	62
More than 100 prescriptions.....	1	1	2
Total.....	70	137	207
No restriction.....	34	96	130
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes.....	74	143	217
No.....	46	92	138

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 112 had found it advisable to prescribe whisky, and 187 had not found it advisable; 27 had found it advisable to prescribe beer, and 235 had not found it advisable; 41 had found it advisable to prescribe wine, and 224 had not found it advisable.

Sixty-six physicians held federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 207 stated that they should be restricted, and 130 did not believe such restriction necessary; 66 physicians answered yes, but did not specify a limit; 51 believed that no prescribing should be allowed; 26 considered from 1 to 50 prescriptions in three months sufficient; 62 physicians considered from 51 to 100 satisfactory, and 2 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 217; no, 138.

## COMMENTS

I am firmly of the belief that the present prohibition laws are a farce and tend to cause more illness and fatalities than a properly framed license law. . . . If you know the history of this city, which is unique in the management of the liquor condition, you will have my idea of a method of controlling the whisky nuisance. In the original town site of Colorado Springs the town site company incorporated in every deed a clause prohibiting the manufacture or sale of alcoholics with a penalty that the property would revert to the original deeder if disobeyed. Property had reverted from this penalty and the act was sustained by decision of the U. S. Supreme Court.—*Colorado Springs*.

Were I to need 4 ounces of whisky for a patient in an emergency right now I would not know how to obtain it. No drugstore here will carry it because the risk of robbery is too great. At the time of the Pueblo disaster in June, 1921, none was available until it could be shipped in. Some people do obtain whisky in what they deem an emergency, and obtain it on their own responsibility. What they get is injurious.—*Colorado Springs*.

I have practiced medicine over forty years. In all that time I have not prescribed a half gallon. In some cases whisky would come in handy. I do not like the present way of handling the liquor question. It is outrageous.—*Denver*.

The present federal restrictions are sufficient, but our state law in Colorado goes to the extreme.—*Denver*.

I believe the present restrictions by federal license are desirable because without such there is too great a tendency to prescribe for beverage purposes under the guise of therapeutics. There is something radically wrong about a system which makes a barkeep of a physician.—*Denver*.

## DELAWARE

Prior to the national prohibition act, Delaware had been under prohibition for a number of years, with the exception of the city of Wilmington. Physicians in good standing are allowed under the state law to prescribe pure grain or ethyl alcohol only, for patients whom they have personally examined.

Questionnaires were sent to 113 physicians in Delaware, and 74, or 65 per cent., were returned.

## RESULTS IN DELAWARE

DELAWARE	Wilmington	Rural	Total
Number of physicians.....	140	122	262
Questionnaires sent.....	50	63	113
Questionnaires returned.....	34	40	74
Percentage of returns.....	68	63	65
General practitioners.....	22	40	62
Surgeons.....	7	..	7
Specialists.....	5	..	5
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes.....	25	22	47
No.....	8	18	26
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes.....	10	9	19
No.....	24	31	55
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes.....	10	9	19
No.....	24	31	55
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes.....	13	14	27
No.....	18	24	42
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable.....	10	6	16
Number of physicians stating no times advisable.....	12	20	32
Beer: Number of physicians stating times advisable.....	3	1	4
Number of physicians stating no times advisable.....	16	23	39
Wine: Number of physicians stating times advisable.....	4	1	5
Number of physicians stating no times advisable.....	17	21	38
Do you hold a federal permit?			
Yes.....	9	12	21
No.....	9	12	21
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	1	3	4
Restricted absolutely.....	3	8	11
1 to 50 prescriptions.....	4	3	7
51 to 100 prescriptions.....	5	3	8
More than 100 prescriptions.....	1	..	1
Total.....	14	17	31
No restriction.....	19	21	40
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes.....	15	20	35
No.....	19	19	38

On the question "Is whisky a necessary therapeutic agent?" the vote in Wilmington was: yes, 25; no, 8; in the rural districts, yes, 22; no, 18; a total for the state of yes, 47; no, 26.

On the question "Is beer a necessary therapeutic agent?" the vote in Wilmington was: yes, 10; no, 24; in the rural districts, yes, 9; no, 31; for the state, yes, 19; no, 55.



On the question "Is wine a necessary therapeutic agent?" the vote in Wilmington was: yes, 10; no, 24; in the rural districts, yes, 9; no, 31; for the state, yes, 19; no, 55.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 27; no, 42.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 16 had found it advisable to prescribe whisky, and 32 had not found it advisable; 4 had found it advisable to prescribe beer, and 39 had not found it advisable; 5 had found it advisable to prescribe wine, and 38 had not found it advisable. None of the physicians replying held a federal permit.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 31 stated that they should be restricted, and 40 did not believe such restrictions necessary; 4 physicians answered yes, but did not specify a limit; 11 believed in absolute prohibition; 7 believed from 1 to 50 in three months sufficient;

## GEORGIA

The Georgia prohibitory law became effective, Jan. 1, 1908. Under it physicians may prescribe pure alcohol, but it must be so medicated as to render it absolutely unfit for use as a beverage.

Questionnaires were sent to 1,040 physicians; 502, or 48 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: for Atlanta, yes, 36; no, 44; Savannah, yes, 14; no, 10; Augusta, yes, 11; no, 10; Macon, yes, 5; no, 10; a total for the cities over 50,000 in population of yes, 66; no, 74; for the rural districts, yes, 153; no, 207; total for the state, yes, 219; no, 281.

On the question "Is beer a necessary therapeutic agent," the vote was: for Atlanta, yes, 21; no, 59; Savannah, yes, 6; no, 18; Augusta, yes, 4; no, 17; Macon, yes, 3; no, 12; a total for the cities over 50,000 in population of yes, 34; no, 106; for the rural districts, yes, 80; no, 275; total for the state, yes, 114; no, 381.

## RESULTS IN GEORGIA

GEORGIA	Atlanta	Savannah	Augusta	Macon	Total Cities	Rural	Grand Total
Number of physicians.....	583	132	116	107	938	2,468	3,406
Questionnaires sent .....	167	62	56	48	333	707	1,040
Questionnaires returned .....	80	25	21	15	141	361	502
Percentage of returns.....	48	40	38	31	42	51	48
General practitioners .....	49	19	17	10	95	336	431
Surgeons .....	18	2	1	3	24	11	35
Specialists .....	13	4	3	2	22	14	36
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?							
Yes.....	36	14	11	5	66	153	219
No.....	44	10	10	10	74	207	281
Do you regard beer as a necessary therapeutic agent in the practice of medicine?							
Yes.....	21	6	4	3	34	80	114
No.....	59	18	17	12	106	275	381
Do you regard wine as a necessary therapeutic agent in the practice of medicine?							
Yes.....	23	5	4	4	36	76	112
No.....	56	19	17	11	103	277	380
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?							
Yes.....	5	5	4	3	17	77	94
No.....	63	17	16	11	107	270	377
How many times have you found it advisable to prescribe these liquors in a month?							
Whisky: Number of physicians stating times advisable.....	15	9	7	5	36	101	137
Number of physicians stating no times advisable.....	37	8	9	5	59	192	251
Beer: Number of physicians stating times advisable.....	7	2	2	2	13	37	50
Number of physicians stating no times advisable.....	45	11	12	6	74	221	295
Wine: Number of physicians stating times advisable.....	6	1	2	2	11	38	49
Number of physicians stating no times advisable.....	45	12	12	6	75	220	295
Do you hold a federal permit?							
Yes.....	2	..	..	..	2	6	8
No.....	23	11	9	6	49	155	204
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?							
Yes (limit not specified).....	21	2	8	1	32	54	86
Restricted absolutely .....	12	6	3	2	23	82	105
1 to 50 prescriptions.....	..	..	2	2	11	14	25
51 to 100 prescriptions.....	8	4	4	1	17	50	67
More than 100 prescriptions.....	..	..	..	..	..	1	1
Total.....	48	12	17	6	83	201	284
No restriction .....	26	11	4	7	48	141	189
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?							
Yes.....	49	13	19	8	89	220	309
No.....	27	11	2	6	46	127	173

8 believed from 51 to 100 sufficient, and 1 physician considered the amount required to be more than 100 in three months.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 35; no, 38.

### COMMENTS

I do not know what method should be used to prevent present abuses of prescriptions which are prevalent in large cities in the East. This state does not permit a physician or hospital to use or prescribe wine, whisky or beer. In a legislature composed entirely of laymen it is difficult to see why they permit a hospital to use any narcotic.—*Wilmington*.

Probably from 90 to 95 per cent. of my work is now done in institutions where I can secure whisky and brandy when prescribed, whether legally or not I do not know. I have never felt that the field for whisky, etc., in medicine was a wide one, but do feel that at times it is very necessary. My opposition to our present prohibition laws is so intense that for the past two years I have "scratched" the names of all candidates favorable to them.—*Wilmington*.

I am not a prohibitionist. Alcoholic liquors are bad enough to drink; worse for medicinal purposes. Why should you want to prescribe alcohol when you have access to aromatic spirit of ammonia, strychnin, etc.?—*Delmar*.

On the question "Is wine a necessary therapeutic agent?" the vote was: for Atlanta, yes, 23; no, 56; Savannah, yes, 5; no, 19; Augusta, yes, 4; no, 17; Macon, yes, 4; no, 11; a total for the cities over 50,000 in population of yes, 36; no, 103; for the rural districts, yes, 76; no, 277; total for the state, yes, 112; no, 380.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 94; no, 377.

One hundred and thirty-seven physicians stated that they had found it advisable to prescribe whisky, and 251 had not found it advisable; 50 had found it advisable to prescribe beer, and 295 had not found it advisable; 49 had found it advisable to prescribe wine, and 295 had not found it advisable.

Eight physicians stated that they held federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 284 stated that they should be restricted, and 189



considered no restrictions advisable: 86 physicians answered yes without specifying a limit; 105 believed that the restriction should be complete; 25 considered from 1 to 50 prescriptions in three months satisfactory; 67 considered from 51 to 100 sufficient, and 1 considered more than 100 prescriptions in three months necessary.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 309; no, 173.

COMMENTS

It is a medical proposition and should be handled by the medical profession. Have the secretary of each state medical association issue licenses to reputable physicians in the state. If a license is abused, have a state medical committee pass on the abuse and revoke the license if advisable. Have the state medical committee responsible to an A. M. A. committee created for this special purpose. Let the A. M. A. committee also serve as a final court of appeals from the state medical committee's ruling.—*Augusta.*

Even in innumerable cases when life cannot be saved by alcohol, the patient can be made more comfortable in the same way that opiates and anodynes may not save life but may assuage pain and make the patient more comfortable.—*Savannah.*

IOWA

The present state law became effective on Jan. 7, 1916. Under it physicians may procure intoxicating liquors, not including malt liquors, and may dispense them to patients who are actually sick. Such liquors must be purchased from a pharmacist holding a special permit to sell liquor for medicinal purposes. There are no provisions in the state law regarding prescribing but the commissioners of pharmacy of the state are empowered to make regulations on this subject.

Questionnaires were sent to 1,488 physicians in Iowa; 1,004, or 67 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: in Des Moines, Sioux City and Davenport, yes, 51; no, 44, for the rural districts, yes, 425; no, 478; for the state, yes, 476; no, 522.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 220; no, 775. In the three largest cities the vote was: yes, 20; no, 75; in the remainder of the state, yes, 200; no, 700.

RESULTS IN IOWA

IOWA	Des Moines	Sioux City	Davenport	Total Cities	Rural	Grand Total
Number of physicians.....	254	124	106	484	3,052	3,536
Questionnaires sent .....	95	58	43	196	1,292	1,488
Questionnaires returned .....	51	28	17	96	908	1,004
Percentage of returns.....	54	48	40	49	71	67
General practitioners .....	37	19	12	68	826	894
Surgeons .....	11	6	2	19	44	63
Specialists .....	3	3	3	9	38	47
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?						
Yes.....	25	16	10	51	425	476
No.....	25	12	7	44	478	522
Do you regard beer as a necessary therapeutic agent in the practice of medicine?						
Yes.....	8	7	5	20	200	220
No.....	42	21	12	75	700	775
Do you regard wine as a necessary therapeutic agent in the practice of medicine?						
Yes.....	10	11	6	27	215	242
No.....	39	17	11	67	684	751
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?						
Yes.....	8	6	5	22	191	213
No.....	42	19	11	72	688	760
How many times have you found it advisable to prescribe these liquors in a month?						
Whisky: Number of physicians stating times advisable.....	23	13	9	45	285	330
Number of physicians stating no times advisable....	20	10	7	37	457	494
Beer: Number of physicians stating times advisable.....	3	5	3	11	84	95
Number of physicians stating no times advisable.....	26	15	8	49	598	647
Wine: Number of physicians stating times advisable.....	5	5	3	13	82	95
Number of physicians stating no times advisable.....	26	15	8	49	602	651
Do you hold a federal permit?						
Yes.....	15	4	5	24	174	198
No.....	26	11	8	45	468	513
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?						
Yes (limit not specified).....	7	1	2	10	158	168
Restricted absolutely .....	9	4	2	15	135	150
1 to 50 prescriptions.....	5	2	1	8	108	116
51 to 100 prescriptions.....	12	8	8	28	146	174
More than 100 prescriptions.....	1	..	..	1	12	13
Total.....	34	15	13	62	559	621
No restriction .....	16	10	4	30	325	355
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?						
Yes.....	35	16	12	63	566	629
No.....	13	10	5	28	322	350

Its use should be permitted just as morphin, etc. If alcoholic preparations are placed under the same restrictions as prescribed in the Harrison Narcotic Law, the question will be settled.—*Atlanta.*

Georgia is by statute dry, and has been for several years. The law makes no provision whatever for the use of alcohol for internal administration. Therefore, owing to the absurd stringency of our dry law, nobody observes it. Whisky of a kind can be had at any time, by anyone.—*Blakely.*

I do not hold a permit, nor would I if prescriptions for alcoholics could be filled in this state. I do not propose to be worried and embarrassed by my fool friends.—*Warren County.*

It is unfair to the medical profession to attempt to use the physicians of this country as a subterfuge to evade the prohibition laws to secure alcoholic drinks. I am not a prohibitionist by any means. I would like to see the law modified; but until that is done, I don't think it is for the best interests of the medical profession for us to be allowed to prescribe—the opportunity for evil is greater than for good.—*Rome.*

Should be restricted to those who are perfectly honest, if Abderhalden or some other deeply learned chemist could discover some test to precipitate them.—*Macon.*

The only thing I wish is that we could get pure alcohol easier than we can for cleaning and sterilizing purposes. Although, if it takes this restriction on alcohol to put the "Ban" on alcoholics in general I am willing to suffer the present inconvenience.—*Ocilla.*

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 242; no, 751. In the three largest cities the vote was: yes, 27; no, 67; in the remainder of the state, yes, 215; no, 684.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 213; no, 760.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 330 had found it advisable to prescribe whisky, and 494 had not found it advisable; 95 had found it advisable to prescribe beer, and 647 had not found it advisable; 95 had found it advisable to prescribe wine, and 651 had not found it advisable. One hundred and ninety-eight physicians stated that they held federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 621 were in favor of some kind of restriction; 355 were opposed to any limit on the number of prescriptions which a



physician might write. Of these, 168 voted in favor of restriction without specifying any limit; 150 were in favor of absolute prohibition; 116 were in favor of allowing the physician to prescribe from 1 to 50 in three months; 174 favored a limit of from 51 to 100 prescriptions in three months, and 13 were in favor of allowing more than 100 prescriptions in three months.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 629; no, 350.

## COMMENTS

The liquor traffic cannot be controlled by placing limits on the amounts that a physician may prescribe and on the number of prescriptions. Liquors should be handled only by responsible persons who are government agents, so that the government may not be required to watch any one except its own employees to see that liquors intended for nonbeverage purposes are not unlawfully obtained or used.—*Cherokee.*

Physicians are now regulated entirely too much by federal and some state laws. The many suffer limitations on account of a few who will not be good.—*Polk County.*

I have refrained from asking for a federal permit for the reason that I feel a certain odium attaches under the present unsettled state of

## MICHIGAN

The prohibitory amendment to the state constitution went into effect on May 1, 1918. Under the state law any physician legally qualified to practice in the state may prescribe not to exceed 8 ounces of intoxicating liquors. The prescription must give the name and address of the patient, the number of prescriptions the physician has given the patient during the preceding year, the diagnosis of the condition for which the liquors are prescribed and a signed statement by the physician that the liquors are necessary for the health of the patient.

Questionnaires were sent to 1,751 physicians in Michigan, and 1,036, or 59 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Detroit, yes, 145; no, 140; Grand Rapids, yes, 13; no, 25; Flint, yes, 9; no, 14; Lansing, yes, 5; no, 14; Saginaw, yes, 6; no, 8. Total for the cities: yes, 178; no, 201; for the rural districts, yes, 292; no, 353; for the state, yes, 470; no, 554.

## RESULTS IN MICHIGAN

MICHIGAN	Detroit	Grand Rapids	Flint	Lansing	Saginaw	Total Cities	Rural	Grand Total
Number of physicians.....	1,551	273	115	102	72	2,113	2,480	4,593
Questionnaires sent.....	509	91	43	37	27	707	1,044	1,751
Questionnaires returned.....	288	39	24	19	14	384	652	1,036
Percentage of returns.....	55	43	56	51	52	54	62	59
General practitioners.....	214	23	18	15	10	280	589	869
Surgeons.....	34	8	3	2	2	49	28	77
Specialists.....	40	8	3	2	2	55	35	90
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?								
Yes.....	145	13	9	5	6	178	292	470
No.....	140	25	14	14	8	201	353	554
Do you regard beer as a necessary therapeutic agent in the practice of medicine?								
Yes.....	95	4	5	2	3	109	138	247
No.....	186	35	18	17	11	267	502	769
Do you regard wine as a necessary therapeutic agent in the practice of medicine?								
Yes.....	109	9	5	1	3	127	146	273
No.....	172	27	18	18	11	246	493	739
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?								
Yes.....	72	5	7	1	4	90	155	245
No.....	199	33	16	16	10	274	482	756
How many times have you found it advisable to prescribe these liquors in a month?								
Whisky: Number of physicians stating times advisable.....	89	8	7	3	7	114	196	310
Number of physicians stating no times advisable.....	143	27	14	12	5	207	369	576
Beer: Number of physicians stating times advisable.....	44	1	4	2	..	51	53	104
Number of physicians stating no times advisable.....	161	29	15	14	8	227	463	690
Wine: Number of physicians stating times advisable.....	54	1	4	1	1	61	60	121
Number of physicians stating no times advisable.....	157	29	15	15	7	223	453	676
Do you hold a federal permit?								
Yes.....	30	7	..	..	4	41	120	161
No.....	162	24	15	12	7	220	357	577
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?								
Yes (limit not specified).....	42	8	4	4	3	61	123	184
Restricted absolutely.....	25	5	1	6	2	39	80	119
1 to 50 prescriptions.....	35	6	2	3	2	48	78	126
51 to 100 prescriptions.....	45	7	6	3	2	63	120	183
More than 100 prescriptions.....	10	..	..	..	..	10	6	16
Total.....	157	26	13	16	9	221	407	628
No restriction.....	121	13	10	3	4	151	223	374
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?								
Yes.....	150	30	14	14	9	217	416	633
No.....	127	9	9	4	4	153	209	362

the whole question and the cynical attitude of the general public mind toward doctors in this whisky muddle. It does not know the sheep from the goats.—*Kossuth County.*

I am giving up practice on account of the restrictions and would not be at work now if I could collect my money.—*Page County.*

I would suggest that all prescriptions for alcoholic beverages be written in triplicate: one copy to be retained by the prescriber, the other two to be forwarded to the pharmacist, who, having filled the prescription, should file one copy and forward the second to the prohibition director. Each prescription should contain the name of doctor, patient and druggist. By this means the officers would have exact data as to how much each physician was prescribing, how much each person was getting and how much was being dispensed, so that if any one was disposing of an unusual amount it could be investigated. By this means I feel that the permits and an endless amount of red tape could be dispensed with and less alcohol beverage prescribed.—*Poweshiek County.*

In my opinion there should be some method whereby alcoholic liquors could be obtained for legitimate use. The present method allows the soak to obtain a very impure supply, but the man who desires liquor for reasonable legitimate use cannot obtain any. Small, illegitimate stills are numerous.—*Fayette County.*

On the question "Is beer a necessary therapeutic agent?" the vote was: Detroit, yes, 95; no, 186; Grand Rapids, yes, 4; no, 35; Flint, yes, 5; no, 18; Lansing, yes, 2; no, 17; Saginaw, yes, 3; no, 11. Total for the cities: yes, 109; no, 267; for the rural districts, yes, 138; no, 502; for the state, yes, 247; no, 769.

On the question "Is wine a necessary therapeutic agent?" the vote was: Detroit, yes, 109; no, 172; Grand Rapids, yes, 9; no, 27; Flint, yes, 5; no, 18; Lansing, yes, 1; no, 18; Saginaw, yes, 3; no, 11. Total for the cities: yes, 127; no, 246; for the rural districts, yes, 146; no, 493; for the state, yes, 273; no, 739.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 245; no, 756.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 310 had found it advisable to prescribe whisky, and 576 had not found it advisable; 104 had found it advisable to pre-



scribe beer, and 690 had not found it advisable; 121 had found it advisable to prescribe wine, and 676 had not found it advisable.

One hundred and sixty-one physicians of those replying stated that they held federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 628 stated that they should be restricted, and 374 did not believe such restrictions necessary; 184 physicians answered yes, but did not specify a limit; 119 stated that the number should be limited to absolutely none; 126 considered from 1 to 50 prescriptions in three months sufficient, 183 considered from 51 to 100 satisfactory, and 16 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 633; no, 362.

## COMMENTS

I regard the price of whisky at the retail drugstores in Michigan as more prohibitive in the past three years than the law is prohibitive. The druggist holding a permit to fill the prescriptions charges the patient from \$1.75 to \$2 for 8 ounces of whisky or brandy. It seems to me it might be better all around and cheaper if the government could handle it and sell it to the patients having a prescription, through the postoffice, the same as they handle money orders and postage stamps. This would save several middlemen's profits, a great deal of clerical work and red tape, and still the government could be collecting as much revenue as ever from traffic.—*Belding*.

British Columbia has the best liquor law I have any knowledge of. It does prevent the liquor habit.—*Detroit*.

The physician should be given a permit to prescribe such alcoholics (the burden of proof of which should be his) in amounts commensurate with the needs of his practice. He should not be permitted to prescribe them for one addicted to their use, nor for any one not under his professional treatment, in the usual acceptance of the term. Violations of these provisions I would make punishable by fine, or suspension of license to practice, or both.—*Plymouth*.

The state of Michigan a few years ago adopted an amendment to its constitution whereby I, a legally qualified physician practicing within the state, am not allowed one single drop of pure alcohol on my drug shelves in my office. I cannot compound a single medicine that requires the use or addition of alcohol in its preparation. If I wish to dispense together a few fluidextracts that will not mix together well without the addition of more alcohol, I am prohibited by law from doing so. I could secure a manufacturer's or a druggist's license and then do so.—*Lenawee County*.

I regard the law as now enforced an injustice to the American public. In this locality they are drinking moonshine or any other thing with a "kick." I would regard a government store as much preferred.—*Bay City*.

The doctor should have a license number such as we have for narcotic prescriptions and checked up in case of determined illegitimate use.—*Bay County*.

Personally, I am a total abstainer—voted for prohibition, little thinking I should be annoyed by the difficulties to be experienced in using an honest judgment as to prescribing alcoholics. The druggists have been surrounded with such difficulties that they have all, in this vicinity, stopped handling alcoholics.—*Houghton*.

It would seem that the whole question of dispensation of liquors and narcotics could be easily handled by a system of municipal depots which could be cheaply maintained, and the narcotics, etc., could be prescribed for by the physician and thereby have both the people and the physician under a closer surveillance. This would not necessitate any expensive complex unavailing legislation and would take the handling of these articles out of the hands of the doctor and drugstore, because I do not believe any self-respecting physician wishes to have the present responsibility of handling these articles.—*Kalamazoo*.

I voted for prohibition to eliminate the saloon. I do not believe in the widespread drinking of moonshine which prevails today throughout the country, not only by the laboring classes, but by a large majority of our people, especially the younger generation, who will be senile at 40.—*Marquette County*.

The present law in regard to prescribing liquor is a failure because the druggists, in general, do not care to handle liquor; consequently, physicians are unable to have their prescriptions filled. In all the eastern part of the upper peninsula, there is only one drugstore I know of filling prescriptions for liquor in Escanaba. It costs \$2 for the prescription and \$3 a pint for liquor, making a total of \$40 a gallon. On that basis, it is cheaper to drink moonshine whisky, and God knows the immense quantities consumed in the country, if I can judge by what is going around here in this town. In my opinion, the government itself should handle the liquor trade by establishing service stations in each township and distribute liquor by the measure, on prescription or not, to those people deserving it.—*Reyton*.

Only one household in ten does not have liquor when I have ordered it, and in the exception it is generally the poor patient who is without it. But neighbors are always willing to supply it when they learn it is for sickness. In prescribing whisky in Michigan we are limited to 8 ounces every ten days, which the druggists generally are unable to supply and do not want to carry it on account of the red tape. The bootlegger supplies it cheaper, and it is consistent in quality. This is a regrettable state of affairs for which there seems to be no hope.—*Detroit*.

## MONTANA

The prohibitory amendment to the state constitution became effective, Dec. 31, 1918. Legally qualified physicians holding permits from the federal government may record such permits with the secretary of state and may prescribe not more than 1 pint for one person within a period of ten days. Malt liquors containing more than one half of 1 per cent. of alcohol cannot be prescribed. Prescriptions must be written only after a personal examination or on the best information obtainable and the physician must state that the use of the liquor as a medicine is necessary.

Questionnaires were sent to 263 physicians in Montana; 192, or 73 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 109; no, 81.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 55; no, 133.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 82; no, 105.

## RESULTS IN MONTANA

Number of physicians.....	620
Questionnaires sent .....	263
Total questionnaires received.....	192
Percentage of returns.....	73
General practitioners .....	172
Surgeons .....	10
Specialists .....	10
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	109
No .....	81
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	55
No .....	133
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	82
No .....	105
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	48
No .....	135
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable....	91
Number of physicians stating no times advisable..	45
Beer: Number of physicians stating times advisable.....	28
Number of physicians stating no times advisable....	78
Wine: Number of physicians stating times advisable.....	61
Number of physicians stating no times advisable....	61
Do you hold a federal permit?	
Yes .....	98
No .....	71
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	48
Restricted absolutely .....	6
1 to 50 prescriptions.....	19
51 to 100 prescriptions.....	25
More than 100 prescriptions.....	
Total .....	98
No restriction .....	86
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	115
No .....	70

Forty-eight physicians had seen cases of unnecessary suffering or death resulting from prohibition laws, and 135 stated that they had not seen such cases.

On the question as to the number of times physicians had found it advisable to prescribe whisky, 91 had found it advisable, and 45 had not found it advisable; 28 had found it advisable to prescribe beer, and 78 had not found it advisable; 61 had found it advisable to prescribe wine, and 61 had not found it advisable. Ninety-eight of those replying held federal permits; 71 did not hold federal permits.

Ninety-eight physicians believed that prescribing of alcohol should be restricted, and 86 believed that it should not be restricted. Forty-eight answered yes, but did not specify a limit; 6 believed in absolute prohibition; 19 believed from 1 to 50 in three months sufficient; 25 believed from 51 to 100 sufficient, and none considered the amount required to be more than 100 in three months.

One hundred and fifteen physicians voted for restriction, and 70 voted for no restrictions.



## COMMENTS

The whole thing is beyond me. Out here if they don't get medicinal liquor they get moonshine. I tried to get along without a permit, but in case of sickness some of my patients thought they ought to have liquor and I would have to send them to my competitor to get their prescription. In a way the prescription work is a nice graft. It allows me to have an assistant. Two books a quarter for a year is 800 prescriptions, which at \$2 each equals \$1,600, nearly enough to pay his salary and allowing me to take postgraduate work, attend medical meetings and have more time for the enjoyment of the good things of life.—*Yellowstone County*.

The growing opinion in our community outside of the prohibition fanatics seems to be toward a system similar to the one in effect in Vancouver, where the government maintains a store where such liquors may be procured without the necessity of a prescription every ten days, thus eliminating the physician from the chance of abuse of privilege, providing a fund which will pay the war debt, and overcoming the bootlegger and the home brewer. No saloons or public drinking, but allowing every one the liberty they wish provided they are sane and wish to pay the bill.—*Bozeman*.

Hospitals should be permitted to have a definite quantity on hands for patients.—*Kalispell*.

Both the burden and the possibility of being asked to prescribe so that a householder may have a little whisky "in his house" should be removed by means of the householder being permitted to buy, say, a pint in six months or a year by personal visit to a government depot.—*Missoula*.

## NORTH DAKOTA

The state prohibitory law went into effect on Nov. 21, 1885, so that North Dakota has been under prohibition for over thirty years. A special law approved, Feb. 18, 1921, forbids the prescribing or sale of liquor except as permitted by the federal law.

## RESULTS IN NORTH DAKOTA

Number of physicians.....	556
Questionnaires sent.....	310
Questionnaires returned.....	193
Percentage of returns.....	62
General practitioners.....	170
Surgeons.....	10
Specialists.....	13
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes.....	92
No.....	98
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes.....	49
No.....	141
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes.....	56
No.....	134
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes.....	54
No.....	131
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable.....	49
Number of physicians stating no times advisable.....	102
Beer: Number of physicians stating times advisable.....	25
Number of physicians stating no times advisable.....	119
Wine: Number of physicians stating times advisable.....	31
Number of physicians stating no times advisable.....	114
Do you hold a federal permit?	
Yes.....	11
No.....	61
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	50
Restricted absolutely.....	2
1 to 50 prescriptions.....	18
50 to 100 prescriptions.....	35
More than 100 prescriptions.....	1
Total.....	106
No restriction.....	72
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes.....	103
No.....	76

Questionnaires were sent to 310 physicians; 193, or 62 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 92; no, 98.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 49; no, 141.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 56; no, 134.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 54; no, 131.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 49 had found it advisable to prescribe whisky, and 102 had not found it advisable; 25 had found it advisable to prescribe beer, and 119 had not found it advisable; 31 had found it advisable to prescribe wine, and 114 had not found it advisable.

Eleven physicians stated that they held federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 106 stated that they should be restricted, and 72 did not believe such restrictions necessary; 50 physicians answered yes, but did not specify a limit; 2 stated that the number should be limited to absolutely none; 18 considered from 1 to 50 prescriptions in three months sufficient; 35 physicians considered from 51 to 100 satisfactory, and 1 physician considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 103; no, 76.

## COMMENTS

Of course, the argument can be easily made that restrictions on the physician as to what he shall prescribe are impudent impositions; but the physician has other restrictions, as to the quality of his preparation for practice, and as to his conformity to certain social standards. If the consensus of enlightened medical opinion is that alcoholics are not indispensable, then, in the interests of society, the dissenting physician may justly be restrained from doing those things which society deems prejudicial. All orderly social progress demands conformity to major opinion until that opinion has been refuted by argument and scientific demonstration.—*Grand Forks*.

I am not in favor of the American saloon as it was running, but I think that light wines and beer served with meals under proper restrictions would do no harm. Whisky could be sold in sealed packages, as under the Gottenburg system. Why pass the buck to the medical profession?—*Grand Forks*.

I think that pure alcohol should be more readily available for laboratory uses, especially for drying pipets. Also that a good form of alcohol for external uses should be available, tax-free. The prices people have to pay now for "rubbing alcohol" are outrageous and almost criminal. The denaturing constituent should be such that the "rubbing alcohol" can also be used on the nipples and as a dressing for the cord in the new-born.—*Wells County*.

The physician should requisition the liquor from the U. S. bonded branch warehouse, and the physician should not charge for the prescription. The prescription should not be written until after a thorough physical examination of the patient, for which he should charge.—*Grand Forks*.

## OHIO

Ohio adopted a state constitutional amendment providing for state-wide prohibition, Nov. 5, 1918; it became operative, May 27, 1919. Under the present law a legally qualified physician holding a federal permit may, on filing a copy of the permit with the state commissioner of prohibition, prescribe alcohol or alcoholic liquors not to exceed one-half pint in ten days for the aged, infirm and known sick.

Questionnaires were sent to 2,732 physicians in Ohio, and 1,666, or 61 per cent., were returned.

To the question "Do you regard whisky as a necessary therapeutic agent in the practice of medicine?" the replies were: yes, 721; no, 931. These replies were thus distributed: Cleveland: yes, 116; no, 107; Cincinnati: yes, 62; no, 65; Columbus: yes, 49; no, 58; Toledo: yes, 43; no, 42; Dayton: yes, 19; no, 30; Akron: yes, 25; no, 31; Youngstown: yes, 19; no, 21; Canton: yes, 9; no, 18; Springfield: yes, 5; no, 10; towns less than 50,000 and rural: yes, 347; no, 549.

To the question "Do you regard beer as a necessary therapeutic agent?" the replies were: yes, 328; no, 1,316. The total replies from cities of 50,000 or more were: yes, 150; no, 574. The replies from the rest of the state were: yes, 178; no, 742.

To the question "Do you regard wine as a necessary therapeutic agent?" the replies were: yes, 418; no, 1,222. These replies were thus divided: cities of 50,000 or more: yes, 206; no, 517; remainder of the state: yes, 212; no, 705.

The question "Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?" was answered: yes, 324; no, 1,288.

The number of physicians who reported that they had found it advisable to prescribe liquor was: Whisky, 535 advisable; 954 not advisable. Beer, 139, advisable; 1,278 not advisable. Wine, 201 advisable; 1,210 not advisable.



To the question "Do you hold a federal permit?" the replies were: yes, 349; no, 982.

To the question whether there should be any limit to the number of prescriptions for alcoholic liquors that a physician should write, 979 replied that there should be, and 616, that there should not. There were 271 who failed to specify the limit; 213 would restrict prescribing absolutely; 177 would limit prescriptions to from 1 to 50 in three months; 312 placed the limit at from 51 to 100 in three months, and 6 placed the limit above 100 in that time.

Opinions on the question whether physicians should be restricted in prescribing alcoholic liquors showed 1,014 for restrictions and 583 against restrictions.

I am not a rabid prohibitionist, but, in more than forty years' practice, have not found any case where, in my opinion, alcohol was really necessary. 'Tis not a food; 'tis not a medicine, and it only stimulates as a poison stimulates.—*Stark County*.

An active state medical board or other unprejudiced body (not prohibition agents) should decide whether this or any other special privilege is being abused.—*Cleveland*.

I do not possess a book in my library which does not recommend alcohol in some form for some disease or condition, and when I purchased them I did not buy them because they recommended the use of alcohol. We are certainly at present in the hands of fanatics.—*Ottawa County*.

Reasons for not taking out permit: I cannot see under the present working of the system, from what I know of it, how you can be honest to your patient, the government and yourself at the same time. I have consequently left it alone.—*Cincinnati*.

## RESULTS IN OHIO

OHIO	Cleveland	Cincinnati	Columbus	Toledo	Dayton	Akron	Youngstown	Canton	Springfield	Total Cities	Rural	Grand Total
Number of physicians.....	1,246	863	546	433	284	274	173	101	86	4,066	4,086	8,092
Questionnaires sent.....	412	276	201	160	98	95	68	41	30	1,381	1,351	2,732
Questionnaires returned.....	226	128	107	85	50	56	40	27	15	734	932	1,666
Percentage of returns.....	55	46	53	53	51	59	59	66	50	53	69	61
General practitioners.....	164	80	66	58	37	39	29	19	11	503	858	1,361
Surgeons.....	21	14	10	12	6	6	4	4	1	78	26	104
Specialists.....	41	34	31	15	7	11	7	4	3	153	48	201
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?												
Yes.....	116	62	49	43	19	25	19	9	5	347	374	721
No.....	107	65	58	42	30	31	21	18	10	382	549	931
Do you regard beer as a necessary therapeutic agent in the practice of medicine?												
Yes.....	38	36	22	21	10	8	9	5	1	150	178	328
No.....	184	91	84	62	39	47	31	22	14	574	742	1,316
Do you regard wine as a necessary therapeutic agent in the practice of medicine?												
Yes.....	71	40	31	22	12	13	10	5	2	206	212	418
No.....	151	87	75	61	37	42	29	22	13	517	705	1,222
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?												
Yes.....	37	21	13	22	4	7	11	4	2	121	203	324
No.....	183	103	88	61	45	47	29	22	13	591	697	1,288
How many times have you found it advisable to prescribe these liquors in a month?												
Whisky: Number of physicians stating times advisable.....	105	39	38	32	15	12	18	7	3	269	266	535
Number of physicians stating no times advisable.....	90	70	57	48	31	37	20	20	11	384	570	954
Beer: Number of physicians stating times advisable.....	9	9	5	11	3	5	5	3	..	50	89	139
Number of physicians stating no times advisable.....	177	99	76	64	41	44	31	24	14	570	708	1,278
Wine: Number of physicians stating times advisable.....	25	12	14	12	7	8	6	2	1	87	114	201
Number of physicians stating no times advisable.....	157	93	68	63	38	41	30	25	13	528	682	1,210
Do you hold a federal permit?												
Yes.....	97	30	30	18	5	4	9	3	1	197	152	349
No.....	104	73	54	52	33	40	22	19	10	407	575	982
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?												
Yes (limit not specified).....	38	11	10	15	4	7	6	7	2	100	171	271
Restricted absolutely.....	11	8	11	8	6	6	6	5	..	61	152	213
1 to 50 prescriptions.....	27	12	14	5	3	8	3	4	..	76	101	177
51 to 100 prescriptions.....	57	29	22	21	14	9	9	3	2	166	146	312
More than 100 prescriptions.....	..	..	..	..	..	..	..	..	..	..	6	6
Total.....	133	60	57	49	27	30	24	19	4	403	576	979
No restriction.....	86	58	40	31	23	26	15	7	4	290	326	616
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?												
Yes.....	133	62	66	52	29	34	26	19	11	432	582	1,014
No.....	84	53	33	31	20	20	13	5	4	263	320	583

## COMMENTS

Whisky as a medicine is fine, as a beverage it is absolutely unnecessary.—*Butler County*.

I voted for prohibition and regret it now because it has caused, in many instances, the opposite of what had been hoped for.—*Columbus*.

I have not found it necessary to write prescriptions as it is easier for my patients to procure the liquor themselves.—*Trumbull County*.

I voted "dry" hoping for intelligent government and proper use of alcoholics. I regret the fanatic is in complete power.—*Columbus*.

The Ohio State Legislature passed a law limiting the amount of whisky to eight ounces every ten days. I considered this very inadequate, of no use to my patients, so I surrendered my permit.—*Cleveland*.

I am not a prohibitionist, and never refused a drink if I cared to, but my opinion is that liquor is hard enough on a well man and it is absolutely foolish to give it to a sick one.—*Erie County*.

After many years in the practice of medicine I have decided that the transient effect of alcoholic liquors in disease is a detriment rather than a benefit.—*Marion County*.

If I had a federal permit it would be of no use to me as there is no place within a hundred miles that I know of that alcohol or whisky could be obtained.—*Washington County*.

No greater injustice has been done the American physician than has resulted from this prohibition wave or what I deem the false interpretation of the Volstead Act. It was never intended that alcohol was to be denied the physicians and manufacturers of medicine for physicians' prescription.—*Wayne County*.

I consider the present prohibition law a failure. Although I have a federal permit I can not get a prescription filled at any of our drug-stores, but I can buy all the "boot-leg" whisky (not fit for medicinal use) I want for from \$4 to \$18 a quart. Our newspapers are advocating prohibition and advertising stills. [The doctor enclosed one of the advertisements.—Ed.]—*Ashtabula County*.

Let us not, as physicians, lower the standard of our profession by prescribing a remedy that does more harm than good.—*Gallia County*.

I have lost thousands of dollars because of prostituted lives caused by the open saloon; now the old booze gang would like to make a goat of the medical profession to atone for the loss to them of the saloon. They would like to produce an outlet for whisky, beer and wine by way of the medical profession, in spite of the Constitution and law and order. My children do not now need to pass an open saloon on their way to school. They used to be compelled to pass three in as many blocks. I am opposed to helping the liquor interests in any way, shape or form.—*Butler County*.



## PENNSYLVANIA

Pennsylvania has no state laws regarding the prescribing of alcoholic liquors.

Questionnaires were sent to 4,430 physicians in Pennsylvania, and 2,575, or 58 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Philadelphia, yes, 455; no, 221; Pittsburgh, yes, 177; no, 118. Total for the cities, yes, 766; no, 456; for the rural districts, yes, 648; no, 682; for the state, yes, 1,414; no, 1,138.

On the question "Is beer a necessary therapeutic agent?" the vote was: Philadelphia, yes, 215; no, 453; Pittsburgh, yes, 60; no, 235. Total for the cities, yes, 353; no, 861; for the rural districts, yes, 258; no, 1,069; for the state, yes, 611; no, 1,930.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic beverages, 1,226 stated that they should be restricted, and 1,246 did not believe such restriction necessary; 338 physicians answered yes, but did not specify a limit; 185 stated that the number should be limited to absolutely none; 228 considered from 1 to 50 prescriptions in three months sufficient; 451 considered from 51 to 100 satisfactory, and 24 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic beverages?" the vote was: yes, 1,221; no, 1,257.

## COMMENTS

Ten years ago I used whisky in septic cases. I stopped it and have noticed no difference in results. Alcohol has no place in medicine; it is simply a beverage.—*Pittsburgh*.

## RESULTS IN PENNSYLVANIA

PENNSYLVANIA															Grand Total
	Philadelphia	Pittsburgh	Scranton	Reading	Harrisburg	Wilkes-Barre	Erie	Allentown	Johnstown	Altoona	Lancaster	Chester	Bethlehem	Total Cities	
Number of physicians.....	3,467	1,231	208	162	159	147	147	112	103	85	80	70	63	6,034	11,348
Questionnaires sent .....	1,224	491	68	55	60	55	57	45	45	32	30	26	18	2,216	4,430
Questionnaires returned .....	681	298	32	23	29	28	37	22	25	17	15	18	10	1,235	2,575
Percentage of returns.....	56	61	47	42	48	51	65	49	56	53	50	69	56	56	58
General practitioners .....	500	226	23	20	21	19	31	18	17	9	9	16	10	919	2,143
Surgeons .....	65	32	5	1	2	2	2	3	4	3	2	1	..	122	157
Specialists .....	116	40	4	2	6	7	4	1	4	5	4	1	..	194	275
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?															
Yes .....	455	177	23	11	13	18	18	13	13	1	6	10	8	766	1,414
No .....	221	118	9	12	16	10	18	8	12	16	8	6	2	456	1,138
Do you regard beer as a necessary therapeutic agent in the practice of medicine?															
Yes .....	215	60	17	3	9	13	9	9	6	..	2	4	6	353	611
No .....	453	235	15	20	20	14	27	12	19	17	12	13	4	861	1,930
Do you regard wine as a necessary therapeutic agent in the practice of medicine?															
Yes .....	290	96	22	8	11	9	9	9	7	1	3	7	4	476	817
No .....	369	198	9	14	18	17	26	12	17	16	11	10	6	723	1,706
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?															
Yes .....	135	39	7	5	7	6	7	4	3	1	..	3	4	221	416
No .....	510	248	24	16	22	21	32	17	22	16	14	15	6	963	2,076
How many times have you found it advisable to prescribe these liquors in a month?															
Whisky: Number of physicians stating times advisable .....	363	145	20	7	8	12	16	8	7	4	4	7	5	606	1,132
Number of physicians stating no times advisable .....	194	110	6	13	15	11	15	10	13	13	8	9	3	420	1,024
Beer: Number of physicians stating times advisable .....	70	23	9	2	2	5	5	2	..	..	..	1	2	121	206
Number of physicians stating no times advisable .....	365	193	12	19	20	18	25	13	18	14	11	14	5	727	1,656
Wine: Number of physicians stating times advisable .....	140	52	12	5	4	2	7	15	1	..	..	2	..	240	394
Number of physicians stating no times advisable .....	315	171	12	16	18	21	24	11	17	14	11	13	7	650	1,523
Do you hold a federal permit?															
Yes .....	356	157	13	7	11	13	17	9	5	3	2	7	3	603	1,123
No .....	233	97	15	11	16	13	16	10	18	12	10	8	6	465	1,114
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?															
Yes (limit not specified).....	92	36	..	1	4	2	4	3	1	2	5	1	2	153	338
Restricted absolutely .....	18	9	..	2	2	1	7	2	3	..	1	1	..	46	185
1 to 50 prescriptions.....	34	21	3	1	3	2	3	1	..	7	..	2	..	77	228
51 to 100 prescriptions.....	115	68	6	6	6	4	6	3	3	3	2	4	1	227	451
More than 100 prescriptions.....	9	3	..	1	..	..	..	..	..	..	..	1	..	14	24
Total .....	268	137	9	11	15	9	20	9	7	12	8	9	3	517	1,226
No restriction .....	384	144	22	11	14	19	16	10	18	4	6	7	7	662	1,246
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?															
Yes .....	239	141	8	10	14	10	18	11	10	12	8	7	3	491	1,221
No .....	406	141	24	12	15	17	18	10	14	3	6	11	7	684	1,257

On the question "Is wine a necessary therapeutic agent?" the vote was: Philadelphia, yes, 290; no, 369; Pittsburgh, yes, 96; no, 198. Total for the cities, yes, 476; no, 723; for the rural districts, yes, 341; no, 983; for the state, yes, 817; no, 1,706.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 416; no, 2,076.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic beverages per month, 1,132 had found it advisable to prescribe whisky, and 1,024 had not found it advisable; 206 had found it advisable to prescribe beer, and 1,656 had not found it advisable; 394 had found it advisable to prescribe wine, and 1,523 had not found it advisable. In Pennsylvania, 1,123 physicians of those replying stated that they held federal permits.

Knowing the physiologic and toxicologic action of alcohol, I have always felt I served patients best without alcohol in any form as a therapeutic agent.—*Pittsburgh*.

Distilled liquor is a "necessity" and still more frequently "advisable." I do not think that a sufficient number of the medical profession are "crooked" to result in any important degree in the nullification of the intent of the Volstead Act.—*Philadelphia*.

The "privilege" (of prescribing alcohol) adds another to the many disagreeable duties imposed on the conscientious physician. It turns many of his patients to unscrupulous confrères. The physician who believes in the therapeutic merit of alcohol should be unrestricted in its use. He should, however, be required to submit a clinical report of those cases wherein alcohol is prescribed.—*Pittsburgh*.

Restrictions cannot be too strict for the good of the profession as well as the public, for the physician who practices for revenue rather than for the good of his patient. The physician who really thinks alcohol indicated in a certain case is not likely to be greatly handicapped. If all physicians were honest there would be no need for restrictions.



The more generally the profession assists in enforcement, the more reasonable will the restrictions become.—*Athens*.

It would be advisable to take liquor out of the druggists' hands entirely. Have it handled by the government. In this way if a patient needs liquor a better product at a more reasonable price could be secured and the government would have absolute control.—*Pittsburgh*.

The great majority of qualified physicians can be trusted to prescribe alcohol as they are trusted to prescribe other remedies, without restriction, but those who abuse such privilege should be taken care of by the law.—*Philadelphia*.

Therapeutics cannot and should not be regulated by law. Nor should scientific questions be discussed or decided upon other than scientific grounds. Men of criminal tendencies, or those who would prostitute their science in order to evade the law, should not be allowed to practice medicine. Men who appreciate their responsibilities to their patients, to the public health, to the profession, and to the science of medicine, should not be hampered in their use of any and every agent or method that may to them seem desirable in any particular instance, whether for the treatment of the sick or for the prevention of disease.—*Philadelphia*.

I have never seen a single instance where alcohol was required in the treatment of disease. Personally, I would favor laws prohibiting the manufacture of alcohol in any form for internal use. I do not, however, favor any law unless provisions are made and executed for their enforcement.—*Clark's Summit*.

I am a teetotaler. However, I recognize that alcohol is a good servant but a bad master, and this can be said of other habit-producing drugs.—*Montgomery County*.

I am now 81 years of age. I have been in the active practice of medicine ever since 1866 (55 years). Have not found it necessary to use alcoholic or brewed liquors in any case. I answer No to Questions 8 and 9 because I think no reputable physician should be restricted in what he believes to be necessary to relieve sickness or prevent death.—*Meyersdale*.

For more than twenty years I have never permitted my patients to take any form of alcoholic liquor. I greatly disapprove of its employment both from observation and theoretically. It is an evil, and no conscientious and consistent physician who takes time to consider the subject or has at heart the all round good of his patients and community can do other than resent the assumption that he might believe it in any way other than harmful.—*Kane*.

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## Marriages

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WALLACE L. ORCUTT, West Newbury, Mass., to Miss Ora E. Drake of Haverhill, Mass., at Boston, December 15.

JAMES P. WARREN, San Francisco, to Miss Beatrice McClaskey of Berkeley, Calif., December 20.

WILLARD ALONZO CHIPMAN, Madison, Wis., to Miss Isabel Arnold of Dorchester, Mass., December 13.

BENJAMIN D. LUCK, Pine Bluff, Ark., to Miss Wordna Clements of Little Rock, November 15.

EDWIN VARNER LONG to Miss Jessie Crawford, both of Sunnyside, Utah, December 12.

JOHN HENRY GOSNELL to Miss Marie Lammer, both of Seattle, October 24.

REX F. SWARTZ to Miss Prudence Plummer, both of Seattle, recently.

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## Deaths

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James Magee Dentley ☉ Cincinnati; University of Cincinnati College of Medicine, Cincinnati, 1911; member of the Central States Pediatric Society; served in Mexico as captain of the First Ohio Field Hospital Corps and during the World War; formerly assistant professor in pediatrics, University of Cincinnati; member of the faculty of the College of Pharmacy; member of the Cincinnati Academy of Medicine; member of the Association of Military Surgeons; served in the pediatric department of the Cincinnati General Hospital; died, December 12, at Baltimore, aged 34.

Eugene Woodbury Hill, Taholah, Wash.; University of Maryland School of Medicine, and the College of Physicians and Surgeons, Baltimore, 1886; formerly government physician on the Cocur d'Alene, Blackfoot and Quinault Indian reservations; was given the Roosevelt bronze medal for service in Panama; at one time vice president of the Medical Association of the Isthmian Canal Zone; formerly on the staff of the Chinese Detention Hospital, Malone, N. Y.; died, December 14, at Tacoma, Wash., aged 56.

James Cowper Shelton ☉ Chillicothe, Mo.; St. Louis College of Physicians and Surgeons, St. Louis, 1889; specialized in ophthalmology, otology, laryngology and rhinology; at one time president of the city board of education; secretary-treasurer of the Livingston County Medical Society; state examiner for the blind; was taken ill in his automobile, December 5, and died at the Chillicothe Hospital, from chronic nephritis and uremia, aged 59.

Albert Carl Kimberlin ☉ Indianapolis; Medical College of Indiana, Indianapolis, 1888; professor of clinical medicine, Indiana University School of Medicine, Indianapolis; at one time president of the Indiana State Medical Association and the Marion County Medical Association; died, December 14, when he was accidentally shot through the temple while on a hunting expedition, near Osgood, Ind., aged 58.

William M. Knapp, Hope, Idaho; St. Louis Medical College (Washington University), St. Louis, 1872; practitioner for nearly half a century; Civil War Veteran; former member of the Nebraska state legislature; for four years professor of medicine, University of Nebraska; formerly superintendent of the Nebraska Hospital for the Insane, Lincoln; died, November 16, from senility, aged 74.

Erwin George Linkman, Milwaukee; Marquette University School of Medicine, Milwaukee, 1913; member of the State Medical Society of Wisconsin; served as lieutenant, M. C., U. S. Army, during the World War; member of the staff of the Emergency Hospital, Milwaukee, where he died, December 14, from injuries received in an automobile accident, December 11, aged 29.

Leander Morton Farrington, Manchester, N. H.; Medical School of Harvard University, Boston, 1894; member of the Massachusetts Medical Society; member of the medical advisory board during the late war; assistant, clinical medicine, Tufts College Medical School, Boston; dropped dead in his office, December 11, from heart disease, aged 48.

Andrew J. Simpson, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University, Cleveland, 1898; health officer of South Newburg; formerly house physician, St. Alexis Hospital, and superintendent of the Detention Hospital; died, December 7, after a lingering illness, aged 44.

William Card Harmount, Pittsburgh; Atlantic Medical College, Baltimore, 1909; senior staff surgeon of the Homeopathic Hospital; served with the British expeditionary forces in France as regimental surgeon during the late war, with rank of captain, received the British Military Cross; died suddenly, December 8, aged 37.

Nathaniel L. Rogers, Wickliffe, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1890; member of the Kentucky State Medical Association; county health officer; at one time president of the Ballard County board of health; died, December 16, from chronic nephritis, aged 58.

John D. Tucker, Newcastle, Pa.; Jefferson Medical College, Philadelphia, 1900; member of the Medical Society of the State of Pennsylvania; affiliated with the State Tuberculosis Dispensary since its establishment; died, December 11, from strangulated hernia, aged 48.

Henry John Bergold, Brooklyn; New York University Medical College, New York City, 1871; practitioner for half a century; for twenty-five years visiting physician to St. Mark's Hospital, Manhattan; died, December 20, from arteriosclerosis, aged 72.

John J. Rinehardt, Chaonia, Mo.; Barnes Medical College, St. Louis, 1903; member of the Missouri State Medical Association; died, December 8, at the St. Francis Hospital, Cape Girardeau, Mo., from septicemia, following the extraction of three teeth, aged 44.

Clarence G. Wilson, St. Mary's, Pa.; Jefferson Medical College, Philadelphia, 1873; practitioner for nearly half a century; member of the Medical Society of the State of Pennsylvania; county coroner; died, December 11, from influenza, aged 73.

Herbert Lee Constable, New York City; Medical Department of the University of the City of New York, 1889; member of the Medical Society of the State of New York; died suddenly, December 18, from heart disease, aged 55.

Oscar B. Kirkpatrick, Cherry Fork, Ohio; Miami Medical College, Cincinnati, 1886; member of the Ohio State Medical Association; president of the county board of health; died, November 18, from nephrolithiasis, aged 65.

☉ Indicates "Fellow" of the American Medical Association.



**Jacob G. Michael**, Mobile, Ala.; Medical College of Virginia, Richmond, 1860; practitioner for nearly half a century; proprietor of the Hygeia Hotel, Citronelle; died, December 12, following a long illness, aged 81.

**William Simonton Pack**, Greenville, S. C.; Medical College of the State of South Carolina, Charleston, 1889; member of the South Carolina Medical Association; died, December 12, following a long illness, aged 60.

**George Washington Foster**, Georgetown, Texas; Tulane University of Louisiana, New Orleans, 1869; practitioner for more than half a century; died, November 28, from disease of the prostate gland, aged 87.

**Alexander David McCrackin**, Kellogg, Idaho; University of Michigan, Ann Arbor, 1909; member of the Idaho State Medical Association; died, November 11, from a self-inflicted gunshot wound, aged 38.

**Charles Asbury Roark**, Hagerstown, Ind.; Medical College of Indiana, Indianapolis, 1903; died, December 13, at the Reid Memorial Hospital, Richmond, Ind., following an operation for gallstones, aged 51.

**William Orpheus Catron**, Pekin, Ill.; Hahnemann Medical College and Hospital of Chicago, 1876; member of the Illinois State Medical Society; died, December 8, following an attack of hiccup, aged 69.

**Richard Henry Hanson**, Hartville, Mo. (license, Missouri, 1883); formerly a clergyman; died, November 28, from injuries received when he was struck by an automobile, aged 79.

**Charles Lewis Beach**, Hartford, Conn.; New York Homeopathic Medical College and Flower Hospital, New York City, 1872; died, December 15, after a lingering illness, aged 73.

**Benjamin H. Markle**, Reading, Pa. (license, Pennsylvania, 1893); practitioner for nearly half a century; veteran of the Civil War; died December 11, from senility, aged 83.

**Lynn Keen Blakeslee**, Pendleton, Ore.; Hahnemann Medical College and Hospital of Chicago, 1883; died, in November, at St. Anthony's Hospital, Pendleton, aged 64.

**Charles Bradley Doane**, Boston; Dartmouth Medical School, Hanover, N. H., 1895; died, December 19, at the Massachusetts General Hospital, Boston, aged 50.

**Marvin W. Vandenburg**, Mount Vernon, N. Y.; New York University Medical College, New York City, 1879; veteran of the Civil War; died, December 8, aged 78.

**John S. Jenkins**, Lima, Ohio; Eclectic Medical Institute, Cincinnati, 1875; died suddenly from heart disease, while driving his automobile, December 8, aged 71.

**Oscar Krueger**, San Antonio, Texas; Louisville (Ky.) Medical College, 1907; member of the State Medical Association of Texas; died, December 9, aged 40.

**Harry S. Martin** ☉ Spokane, Wash.; Victoria University Medical Department, Toronto, Ont., Canada, 1884; died, December 11, after a long illness, aged 65.

**Samuel A. Henderson** ☉ Jackson, Tenn.; Vanderbilt University Medical Department, Nashville, 1884; died, December 14, from septicemia and malaria, aged 59.

**Edward E. Kerr**, Chattanooga, Tenn.; Northwestern University Medical College, Chicago, 1887; died, December 6, from hemorrhage of the stomach, aged 66.

**Ashley Scovel**, Yonkers, N. Y.; Medical College of the State of South Carolina, Charleston, 1885; died, December 10, at St. John's Hospital, Yonkers, aged 60.

**Hiram F. Abbott**, Rumford Point, Me.; Bowdoin Medical School, Portland, Me., 1864; died recently, at the Augusta State Hospital for the Insane, aged 86.

**Morton A. Pratt**, Wichita, Kan. (license, Kansas, 1901); died, November 28, in a local hospital, from injuries received in an automobile accident, aged 80.

**Charles B. Johnson** ☉ Batavia, Ill.; Rush Medical College, Chicago, 1892; also a druggist; died, December 13, from asthma and lung trouble, aged 54.

**John D. Wolfe**, Mount Vernon, Iowa; State University of Iowa, College of Medicine, Iowa City, 1889; died, October 4, at Cedar Rapids, Iowa, aged 60.

**Irving P. Truman**, Skaneateles, N. Y.; Homeopathic Hospital College, Cleveland, 1870; died, December 3, at Lakeland, Fla.

**Adelbert D. Puterbaugh**, Branford, Fla.; Kentucky School of Medicine, Louisville, 1893; died, November 11, aged 57.

## Correspondence

### "CAMPHORATED OIL" TUMORS

*To the Editor:*—Enough has been written of late to acquaint the profession with the fact that the injection of liquid petrolatum into tissues is sometimes followed by "tumors," and that since it has been camphor that is most commonly incorporated with the liquid petrolatum, such tumors have come to be known as "camphorated oil tumors." It is perfectly obvious, however, that injections of other substances similarly incorporated could be followed by the same sort of lesion.

That it is the liquid petrolatum and not the medicament that is responsible for the tumors can be inferred from the fact that the histology of the liquid petrolatum tumors is almost identical with those that have long been known as paraffinomas. Nevertheless, Miss Marjorie S. Jeffries has taken the pains recently to produce experimentally in the University of Pennsylvania Laboratory of Dermatological Research liquid petrolatum tumors in two monkeys, running control injections. That is, some injections were of liquid petrolatum only, whereas others in the same animal were of liquid petrolatum containing camphor. The result in the two cases was the same: development in eight months of tumors in both positions, the size in some cases of soup beans. The histology of these was the same as that which has been already fully described by several authors.

My real purpose here is to point out that oil is being extensively used today intramuscularly as a vehicle for mercuric salicylate and perhaps other insoluble drugs. I do not wish to be an alarmist, and cannot submit any experimental or clinically proved data on actual mercury injection cases; but such do not seem necessary after what has been already experienced in the matter of the camphor oil tumors. Of course it would appear to be the logical thing to attempt the experimental production of tumors in the lower animals by injection of a liquid petrolatum suspension of mercury salts; but it takes a long time to produce the tumors, and in the meanwhile the oil is being injected into hundreds of patients daily. The proper course under the circumstances would seem to be meanwhile to use some other vehicle for the mercury, and insist that the proprietary drug house specify that "no paraffin or petrolatum product is contained in this ampule." In the case I have in mind all the information given on the wrapper in this respect was that the vehicle was a "bland, nonirritating base," and on correspondence that it was an "oil of animal origin." I centrifuged the mercuric salicylate from one of the ampules, and the oil is optically identical with liquid petrolatum. It does not react to osmic acid, and I can guarantee that there was no olive oil in the mixture that I tested.

It will, of course, at once occur that after all these years of insoluble mercury salts injection, some of these tumors ought to have cropped out. But it must be recalled that it is not always liquid petrolatum that has been used as a vehicle, and that even when it is used, not every person will develop liquid petrolatum tumors. There is no doubt that many more liquid petrolatum-camphor injections have been given than have camphorated oil tumors developed, and we have confirmed this in our experimental monkeys. One of the monkeys showed only three or four tumors out of a dozen or more foci injected. With the other monkey, every one of the twelve foci into which liquid petrolatum was injected was followed by the development of a "tumor." There must be a certain individual factor determining whether these "tumors" shall or shall not develop.



Be all this as it may, there must still remain a smaller or larger residue of patients liable to these tumors; why they have not been complained of in the buttocks I cannot say. Maybe they have. But, as stated above, when there are other available "suspenders," it is logical for the physician to decline to use any preparation unless it is specified that it contains no paraffin or petrolatum product.

FRED D. WEIDMAN, M.D., Philadelphia.

### QUINIDIN TREATMENT OF AURICULAR FIBRILLATION

*To the Editor:*—The three interesting papers on the quinidin treatment of auricular fibrillation, together with the editorial (*THE JOURNAL*, Dec. 3, 1921), will probably stimulate the wide use of the drug, in spite of your editorial cautions and Hamburger's "warning against the use of quinidin as a general therapeutic procedure for the treatment of various types of disorderly heart rhythm." Hewlett and Sweeney, in discussing the sudden death of one patient in fairly good compensation shortly after the establishment of a normal rhythm, say, "Should further deaths of this type be reported, the field of usefulness of quinidin will be restricted." And in a footnote they add: "Since this article was written, a patient in fairly good compensation was treated with quinidin and died suddenly shortly after his heart had become regular."

Apropos of this, the following case may be cited: A man, aged 50, vaguely ill for six months, suddenly developed palpitation and marked shortness of breath, June 6, 1921. He was admitted to the Hahnemann Hospital, June 8, in a state of cardiac decompensation and auricular fibrillation. The heart was excessively irregular and about 130 a minute. The pulse deficit was 14. June 9, he received a preliminary dose of 0.4 gm. (6 grains) of quinidin sulphate. June 10, 11 and 12, he was given 0.4 gm. of quinidin three times a day. In the afternoon of June 12, his heart was beating regularly and normally at 81 a minute. On the morning of June 13, his apex beat was 81 and his radial pulse 78, due apparently to extrasystoles. He was given three more doses of 0.4 gm. of quinidin that day. The total amount of quinidin taken was 5.2 gm. (80 grains). At 5 p. m., the intern, Dr. Guillian, made the following notes: "Patient comfortable this afternoon; apparently no adverse symptoms. Pulse strong but not as full as June 11. Extrasystoles about 8 in a minute, but they get through and there is no pulse deficit. Pulse 80." At 6:30 p. m., the patient, propped up by two pillows, was comfortably reading the evening paper. Suddenly he dropped the paper and began kicking and twitching. The intern, arriving in a few minutes, found him unconscious with heart very slow and weak. Six minutes after the beginning of the seizure he was dead. Necropsy was not obtainable.

The terminal clinical phenomena impressed us as those of cerebral embolism, and the death certificate was made out accordingly. It was with considerable interest, therefore, that we read the letters (referred to by Hamburger) of J. Mackenzie and J. Orr warning of the tendency to embolism in auricular fibrillation and flutter, especially on resumption of normal rhythm. Mackenzie refers to three or four instances in which the restoration of normal rhythm was succeeded by the discharge of clots from the normally contracting auricle and fatal cerebral embolism. Their patients had not received quinidin. Whether this was true in our case is not certain, but in the use of a new remedy such occurrences should be recorded so that an accurate estimate of the drug's usefulness and dangers may be speedily reached.

S. W. SAPPINGTON, M.D., Philadelphia.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### NUFORAL

*To the Editor:*—Would you kindly give me your opinion upon Nuforal, a pamphlet on which is being circulated under the heading "A New Treatment for Tuberculosis," from the Nuforal Laboratories, 686 Lexington Avenue, New York. Is this an ethical concern?

WILLIAM C. VOORSANGER, M.D.,  
The Oaks Sanitarium, Los Gatos, Calif.

*To the Editor:*—Enclosed please find literature from Nuforal Laboratories, Inc. Since they give the impression that the Department of Health of the City of New York recognizes their treatment I shall be glad to know where this firm and their product really stand.

J. P. KANE, M.D., Tacoma, Wash.

*To the Editor:*—I am just in receipt of some literature from "Nuforal Laboratories, Inc., 686 Lexington Ave., New York City." I presume it will not be long before some of this literature comes to the hands of our patients and I will be beset by inquiries from them as to this alleged remedy for tuberculosis. This literature includes what is said to be a reprint of an article published in the September number of *American Medicine*, which journal we do not take. The article was written by Dr. Euthimios H. L. Tchou-Baj-Oglu. I assume you are familiar with the propaganda being carried on with the Nuforal outfit, and I wish you would kindly give me such information as you have concerning their alleged remedy, themselves and their doings.

J. G. PACE, M.D., Medical Director and Superintendent,  
Modern Woodmen Sanatorium for Tuberculosis, Woodmen, Colorado.

ANSWER.—From the information in our files it seems evident that the use of "Nuforal" as a treatment for tuberculosis is a commercial proposition, and that the treatment is distinctly in the experimental stage. The Nuforal Laboratories, Inc., has not requested an examination of its product by the Council on Pharmacy and Chemistry, nor has the Council so far given consideration to "Nuforal."

So far as the medicament is concerned, the only statement of composition which appears to have been given out is to the effect that the "ingredients contained in the product are formic acid, nucleinic acid and allyl sulphate." As no quantities are given the statement is meaningless.

### LOCAL TREATMENT IN DIPHTHERIA

*To the Editor:*—What is the latest, approved, local treatment for diphtheria affecting the throat (a) when there is only an infection from the Klebs-Loeffler bacillus and (b) when there is a mixed infection?

B. J. READ, M.D., Red Jacket, W. Va.

ANSWER.—There is no approved treatment of diphtheria through local measures alone. The only treatment generally approved is by diphtheria antitoxin. Local measures may be used to add to the patient's comfort and to combat secondary infections. Irrigations, gargles, etc., may be employed to wash away decomposing secretions and fragments of pseudo-membrane which may obstruct the pharynx and nasopharynx. They should be unirritating. For this purpose, physiologic solution of sodium chlorid is as good as any. Hot gargles of sodium bicarbonate solution, about 1 dram to a pint (8 gm. to a liter) seem to reduce the swelling and so give some relief to the patient. Solutions of antiseptic substances in sufficient strength to be bactericidal appear to be of doubtful value either in the active stage of diphtheria or in getting rid of the bacilli during convalescence.

### DEFINITION OF MORON

*To the Editor:*—Kindly inform me of the derivation of the term "moron," when first used and recent literature regarding same.

EDWARD A. FOLEY, M.D., Chicago.

ANSWER.—Moron is derived from *μωρός*, dull, stupid, the same word that appears in the second half of the familiar word "sophomore." In 1910, the American Association for the Study of the Feeble-minded adopted as authoritative this terminology: Feeble-minded: idiots, mental age below 2; imbeciles, between 2 and 7; morons, between 7 and 12. Nearly a thousand titles to articles on feeble-mindedness in its social aspects are given by L. W. Crafts in the *Journal of Psycho-Asthenics*, Monograph Supplements, Volume 1, No. 3, March, 1917, published by the Minnesota School for Feeble-Minded and Colony for Epileptics, Faribault, Minn.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALABAMA: Montgomery, Jan. 10. Chairman, Dr. Samuel W. Welch, Montgomery.  
 CALIFORNIA: Los Angeles, Feb. 13-16. Sec., Dr. Charles B. Pinkham, 342 Flood Bldg., San Francisco.  
 DISTRICT OF COLUMBIA: Washington, Jan. 10. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.  
 HAWAII: Honolulu, Jan. 9. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.  
 ILLINOIS: Chicago, Jan. 10-12. Director, Mr. W. H. H. Miller, Springfield.  
 INDIANA: Indianapolis, Jan. 10. Sec., Dr. Wm. T. Gott, Crawfordsville.  
 KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.  
 NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools, Part I, Feb. 15-17; Part II, Feb. 20-21. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia.  
 NEW MEXICO: Santa Fe, Jan. 9-10. Sec., Dr. R. E. McBride, Las Cruces.  
 NEW YORK: Albany, Buffalo, Syracuse and New York City, Jan. 23-26. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.  
 OKLAHOMA: Oklahoma City, Jan. 10-11. Sec., Dr. J. M. Byrum, Shawnee.  
 SOUTH DAKOTA: Pierre, Jan. 17. Director, Dr. H. R. Kenaston, Bonsteel.  
 VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.  
 WASHINGTON: Olympia, Jan. 10. Director, Mr. Fred J. Dibble, Olympia.  
 WEST VIRGINIA: Charleston, Jan. 10. Sec., Dr. W. T. Henshaw, Charleston.  
 WISCONSIN: Madison, Jan. 10-12. Sec., Dr. John M. Dodd, 220 E. Second St., Ashland.

### A VISIT TO A CHIROPRACTIC SCHOOL

GEORGE DOCK, M.D.  
 ST. LOUIS

Criticism of medical sects or medical sectarians by a physician is of dubious value. Sectarians will accuse him of bias, of working "pro domo," and many disinterested persons will do the same. Few in the profession have an opportunity of seeing the work of sectarians, and so I have prepared this article, based on a visit I made in the spring of 1921, as well as on a rather thorough study of catalogues.

Certain important facts seem not sufficiently realized. The details of belief in or practice of a medical dogma form the smallest part of the problem of sectarian medicine. A much more serious thing is the possibility of developing schools and graduating low grade practitioners of medicine in large numbers; of carrying a great but insidious advertising campaign; of giving a large part of the population false but attractive ideas of physiology and hygiene; of complicating and corrupting medical practice laws, already sufficiently handicapped.

An essential feature, often overlooked, is the fact that, no matter how pure a dogma any irregular school may have in the beginning, it rapidly takes up all the methods of medical practice so far as its means permit. Yet the students and graduates of such schools are not counted in estimating the number of students and physicians for statistical purposes. If the reader thinks I am mistaken as to the future of these schools, I would point out that the homeopaths, within a few years and when their dogmas have been forgotten, now have all the standing of regular graduates, including admission to the government services. Osteopaths have some schools that compare favorably in equipment and course with those of the lower grade medical schools of a few years ago. The reader should not forget that we need more good medical schools, but not more poor ones. Chiropractic remains as a comparatively pure dogma, but there can be little doubt that in a few years it will take up the equipment and methods of the regular schools as far as it is able and have nothing but the prestige of the name, the separate licensing bodies, the considerable body of alumni and the peculiar methods of advertising to differentiate it from regular schools.

The misunderstandings about the situation were impressed on me during the campaign for a separate chiropractic examining board in Missouri in the legislative session of 1921. In the hearing before the Senate committee it was depressing but also amusing to hear the sectarian misstatements. The legislators were assured that chiropractors did not practice medicine, but in the next breath were told how they cure all kinds of diseases in very large numbers of patients. The misstatements about comparatively elementary facts that were made would hardly be believed by any one who did not hear them, and yet such was the skill of the advocates of chiropractic that it was the impression of a number besides myself that if the matter had been put to a vote of the large and representative audience, the chiropractors would have won by a great majority. The common misunderstanding was again revealed when a number of us went to a hearing before the governor. The question was seriously asked by intelligent people whether osteopaths and chiropractors should not be allowed to practice in cases for which they have a special capacity. I had known before how hard it is for people to understand that none of the practitioners of these sects possess any therapeutic secret by reason of their training, and while some individuals among them may have skill in some line, it is purely individual and not the result of sectarian teaching or practice. Contrary to a common belief, the osteopath is not likely to be a good masseur or bone setter, or to perform miracles, and still less the chiropractor.

My experience with sick persons who had been in the hands of chiropractors had given me a very poor impression of that sect; but with the intention of getting a more definite idea of the subject I visited the "fountain head" of chiropractic, "the mother school"; namely, the Palmer School, of Davenport, Iowa, in the spring of 1921. I went without announcing myself, in company with a friend very familiar with medical study and medical schools, and I will give as accurate a picture as possible of what we saw and heard. I do not wish to convey the idea that I consider myself an authority on chiropractic study or teaching, but wish to give a truthful account of a very large source of supply for those who appear like physicians. It is true, in a sense, that the method of study followed and the methods of practice inculcated are not worth the consideration of intelligent people; yet the fact that more than 3,000 potential voters spend a number of months and several hundred dollars apiece in getting the so-called training in a single school is a matter worth the consideration not only of physicians, but also of hygienists, economists, psychologists and jurists.

### BUILDINGS AND EQUIPMENT

The buildings of the school are modest in comparison to the size of the classes, but are rapidly expanding. The home of the president is the first thing one sees on approaching the institution. The house looks as if it might have been built originally for a Davenport magnate in the seventies, with a recent addition around the side, giving it a very spacious and comfortable appearance. In the rear is a frame garage, originally no doubt a stable, with some Japanese bronze storks, looking rather incongruous, at the entrance. Next to a neat "memorial building" used for classes are the headquarters of the school, in an old building, partitioned off into numerous small rooms and narrow corridors, with a glass-fronted addition, which serves as a lobby. In the latter is a news stand, conducted by a blind man, who also sells bones, especially vertebrae, for from \$20 a set up. In the middle of the day, part of the space is occupied by a number of women, who sell cakes and sandwiches. Beyond this is a large building containing a cafeteria, with a roof garden seating 1,500, and next to it a concrete building said to have 7 acres of floor space.



The secretary's office, just inside the old building, is hardly large enough to turn around in; but the secretary, a very genial and energetic man, gives an air of expansiveness and hospitality to the premises. Nearby is a small room used as a book store, but with very few books for sale.

At certain times in the day a tour of the institution is conducted by a very enthusiastic guide. The main demonstration is the "osteological laboratory," a small room almost filled with cases containing many remarkably fine specimens of bone lesions, especially kyphosis, scoliosis, spondylitis deformans, caries and repair of diseased or broken vertebrae, ribs and other bones, and a few comparative anatomic specimens. The guide explains the theory of chiropractic by means of the narrowed foramina in the scoliotic specimens, showing how the "vital force" that should go through the nerves has difficulties. He also talked much about the "innate mind," which he was confident was wholly independent of the body.

The cafeteria, which is said to be capable of feeding 1,200 people in an hour, has many individual effects in construction, such as a well with an "old oaken bucket," rustic trimmings and many mottoes of the same kind that ornament some other parts of the buildings. They preach a Hubbardesque philosophy in rather wearisome aphorisms. Another striking effect is produced by colossal busts of the founder, D. D. Palmer, of the son "B. J.," and of the wife of the latter, often spoken of as "Mabel," who introduces a much needed pulchritude into the scheme.

There are many class-rooms. These are for the most part large, seating from 300 to 500. Some of them are in a loft building, and the class-rooms open into one another so that one may have to go through one or two classes to get to the one desired. These rooms are all flat, with low ceilings. The seats are numbered, and the attendance of each class is checked up by girls who go from row to row and note empty places, very few as a matter of fact.

In a room on the ground floor are machines for practicing the "chiropractic thrust." These are made of pieces of gas-pipe with a cap on top and a fairly strong spring inside them. The machines are used at odd times as well as by classes, and one can see many students through the day getting the "form" that is the essential part of the treatment. The "thrust," "a quick spontaneous (!) thrust, with the hand upon the bony process of misaligned vertebrae," is made by placing the pisiform bone of one hand over the cap, or vertebra, in the patient, then putting the other hand around the wrist, with as much care as one sees in young golf players, and then pushing down the hand with a vigorous thrust. The only other thing that could be considered a laboratory is a small roentgen-ray installation labeled "Spinograph Department," where a special course is given for one month, at a charge of \$50.

In one of the buildings is a printing establishment, "The Prettiest Printing Plant in America," and there is also a "Private Branch Post-Office and Express Service."

#### STUDENT BODY

In speaking before the Senate committee, Dr. Palmer claimed 3,000 students. At my visit in April the usual statement was 3,200, with the frequent addition that within a few months there would be 5,000. These are said to come from all over the world, including such diverse countries as Bulgaria and New Zealand. "With one exception, its doors are open to all races" (catalogue). The large majority look as if they had come from the smaller towns or villages of the Middle West, and vary greatly in age. While the majority are young men and young women, there are not a few middle aged men and a considerable number of women, not merely of certain age, but certainly aged. One striking

thing about these students is the friendliness, earnestness and conviction of all. They show no objection to the appearance of a stranger; speak enthusiastically of the work; recommend treatment; answer questions freely, and are as attractive a body of students as I have ever encountered. It was not difficult to discover, however, that most of them had not bridged the stage between the grammar school and the course that in medicine leads to the doctor's degree. The farm, the barber-shop and the hotel dining-room or kitchen would seem to be the more natural work places for a great many. Some, however, seem to have come from the teacher's platform, and a few from normal schools or small colleges.

#### TEACHERS AND TEACHING

"About one hundred and fifty regular full-time, salaried employes" are "engaged in the work of our many departments" (catalogue).

I went from class-room to class-room, and from these one would never realize that the chiropractor had anything to do with medicine as a biologic science. There is no laboratory study or teaching. The nearest approach to medical study probably is in the anatomic lecture room, so-called. This is conducted by Mrs. Palmer, "pleasantly styled his Better Two-Thirds, the wife of Dr. Palmer" (catalogue). In her class-room were at least 300 students as counted by seats, all filled. Much might be said of Mrs. Palmer personally. She commands the class through her presence and personality, and is urbane but energetic in manner. The exercise of the day consisted in a parrot-like recitation of the names of all the veins from the toes to the heart. Questions were put to one student after another in the numbered seats. Rather more than half of them indicated that they could not answer the questions, and sometimes half a dozen in a row would miss the same question. There was no thought of anatomic relations, function or anything more than names. Although the teacher evidently had memorized the names without omission of any, no matter how unimportant, she gave the impression of being either self-taught or taught by an inexperienced teacher. Her pronunciation was quite lawless, so that she might begin pronouncing words like posterior, saphenous or azygos in a conventional manner, but if a student mispronounced it she would then take up the new way—"Oh yes, 'saph' enous, 'pösterior.'" etc. She would frequently help out the answers when the responses were too slow by repeating a lot of names, such as: "O yes! then, muscular, cutaneous and articular." The catalogue states that work in dissection may be taken at times, but members of the class said they had never seen it, and some said that dissection was illegal in Iowa (not a fact).

A great feature in the school is the "pit lecture," so-called, given by the head, familiarly spoken of as "B. J." The lecture room, which has about 600 seats, was filled, with a large part of the standing room occupied. There is a stage running across one end on which were a number of patients and assistants. The exercise was extremely interesting. A patient would be brought to the front of the stage and the history read. This gave about as much as is included in the primary complaint in an ordinary history, for example: "sour stomach, deafness, insomnia"; "rheumatism of shoulder"; (a young man) "mentally exhausted and physically rotten, has to take exercise to keep from getting worse." The diagnosis was announced without any further examination; sometimes by a member of the audience, and consisted in a rapid-fire statement of a given vertebral dislocation. Sometimes, when the professor announced the diagnosis, a voice from the rear would say, "Why not such and such vertebrae?" "Why so?" inquired the teacher. "Because it gives so and so." The teacher would good naturedly add this to the diagnosis.



The spirit in all classes was very interesting to see. Great good nature and hilarity were displayed in all the rooms. Even in the pit lecture there was much noise and coughing and laughing and even talking. The manner of the president was usually jocular, sometimes quite familiar. After a bad but pardonable guess at an old woman's age he gave the next one correctly, at which a voice from the audience called, "Did you see the paper, B. J.?"

Another interesting exercise was a treatment clinic. This was also in a very large room with a stage, and on the stage and front part of the floor were chiropractor treatment tables. These are so arranged that there is an open space between the two parts of the table; the patient lying with the chest on the upper one and the hips on the lower one. At the Senate hearing I understood Dr. Palmer to say that they had 3,000 patients in the clinic daily. In Davenport, however, the number was usually given as 1,700. Many of these are members of the class. The names and apparently the diagnoses are entered in books, and the clinic treatment is the whole thing in most cases; but in a few, a fleeting palpation of the spine was made. Out of several hundred people the day I was there, there was only one who looked as if he might be sick—a man with a severe kyphosis and paraplegia. Many of the "patients" looked remarkably well, having very much the appearance of the people one can see at Christian Science meetings plus the pink skin and plump panniculus revealed at the treatment clinic and quite different from those in any outpatient department. That the treatment gives a certain satisfaction one could note by the expressions of many of the patients, who had an appearance almost of ecstasy from the moment of lying down on the table.

While the actual method of chiropractic treatment may be well known, I will describe what I saw. The patients come prepared to have the back exposed. The men have their shirts on backward. To the women, with the present style of dress, it was a simple matter to expose the part of the back necessary: in some cases all from the lumbar region up. On certain days so-called "coccygeal adjustments" are given. I happened to be there on the off day, but can imagine the situation.

The patient lying down, a rapid palpation is sometimes made, very often in fact none at all, as the site to be treated is already known; then the left hand is arranged for the thrust, the other hand fastened around the wrist, and a rapid push downward is made, the whole thing taking much less time than it takes to describe. A girl student sitting next to me, who said she had often been adjusted, said the palpation and thrust had no particular local effect, such as tickling. Those who imagine that the treatment is used only for local diseases should hear the recommendation of the effects in general malaise, as from being up too late at night; the value of the treatment for workmen, and its use in blindness, deafness, cancer of the stomach and liver, smallpox, measles, influenza, etc.

#### INCONSISTENCIES

There is a curious contradiction between political statements about the course and the facts. Before the Senate committee it was frequently stated that the course was one of three years of six months each. In Missouri House Bill No. 113, providing for a state board of chiropractic examiners, it is stated that the candidate must be "a graduate of a chiropractic school or college which teaches a course of not less than three years of six months each, or its equivalent." Many wondered what the students did in the intervening six months' period. As a matter of fact, there is no such period; the session is eighteen months continuously, but new terms begin every four months. According to the Palmer catalogue, students get from "six to twelve months'

actual practice." The catalogue, p. 33, says: "The course is divided into eighteen consecutive calendar months comprising three collegiate years of six months each, all of which are continuous, there being no vacation periods." This somewhat original treatment of time extends to the school hours. There are said to be 4,103½ class hours in the scientific course, or with the spinographic course of 1,189 hours and the salesmanship course, 5,335 class hours. This would seem to exceed the hours in a four year medical course, except that a chiropractic hour is not an hour, but a half hour.

The freshman course is four months. "After two months in sophomore class they are entered as sophomore adjusters, and at the end of eight months are promoted to junior class and entered as junior adjusters. . . . After being promoted to junior adjusters, students are granted permission to solicit patients outside of clinic, which cases they may adjust for pay" (catalogue, p. 19).

Before the Senate committee it was stated that chiropractors do not treat obstetric cases, and in House Bill 113 obstetrics is not named among the subjects taught. The catalogue states (p. 23) that "obstetrics is taught sufficiently to qualify the student to pass any of the state examining board's examinations in midwifery in any state where this is required. . . . Antiseptic precautions" are taught, yet much was said in the Senate hearing about the time wasted by medical students in learning about poisonous drugs, which chiropractors never use.

Gynecology is taught, though not provided for in House Bill 113, and it is said (catalogue, p. 27) that a great proportion of cases of this character enter into the average chiropractor's practice.

A course in salesmanship is included in the course, for "despite the merit of an offering, the individual may not be successful because of his personal inability to sell it" (catalogue, p. 31). The synopsis of this course is interesting, but too long to quote (catalogue, p. 32).

#### FINANCIAL ASPECTS

As the fee for the course for a single person is \$350 "spot cash," \$400 for deferred payment (not less than \$150 initial payment, the balance at interest), or husband and wife \$437.50 and \$500, respectively, it can be seen that the industry is an important one from the financial standpoint. This is not mentioned as essentially bad, but it must have some bearing on the whole movement for organizing irregular schools.

How precarious the business may be appeared from a visit to another chiropractic school in Davenport, with a beggarly array of empty benches. I have mentioned in another place<sup>1</sup> the tendency for such institutions to move between two days to another town, sometimes another state. But one institution with 3,000 students paying large fees can easily carry on an extensive propaganda, as by full page advertisements in city papers, meetings, defense of chiropractors tried for breaking practice laws by corps of attorneys, and in hearings before legislatures.

#### CONCLUSION

So one must question, whether, as stated in a court decision, chiropractic is an innocent business. No one can object if a healthy or sick star, either of the opera, stage or screen, a novelist, a critic or an editor, a banker, a merchant, a physician, a society leader or an athlete wishes to be adjusted. The case is different in a child with measles, diphtheria or meningitis, a pregnant woman, or a patient with a malignant tumor. When we think of this it seems important that up to last winter chiropractors claimed that fifteen states and one territory have chiropractic boards, not insisting on med-

1. Dock, George: Physicians and Healers, South. M. J. 11:1 (Jan.) 1918.



ical training; that eight states give legal recognition, and that twelve supreme courts hold that "drugless healers" are not practitioners of medicine. But, as I intimated in the beginning, the matter is not one to be settled by physicians, so I shall omit further discussion.

### Kansas October Examination

Dr. Albert S. Ross, secretary, Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Oct. 11-12, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. Seventeen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Washington University.....	(1920)	89.7, (1921)	90.1
University of Vienna.....	(1902)*		86.2
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgia College of Eclectic Medicine & Surgery....	(1914)		Missouri
Kentucky University Medical Department.....	(1903)		Missouri
University of Louisville Medical Department.....	(1900)		Colorado
(1912) Kentucky			
Johns Hopkins University.....	(1915)		Virginia
Barnes Medical College.....	(1909)		Missouri
Central Medical College of St. Joseph.....	(1899)		Missouri
Ensworth Medical College.....	(1905)		Oklahoma
St. Louis University School of Medicine.....	(1912), (1917), (1918), (1920)		Missouri
Washington University.....	(1920)		Missouri
John A. Creighton Medical College.....	(1920)		Nebraska
Woman's Medical College of Pennsylvania.....	(1910)		Penna.
Mcharry Medical College.....	(1909)		Texas
Vanderbilt University.....	(1919)		Tennessee

\* Graduation not verified.

### New Hampshire September Examination

Dr. Charles Duncan, secretary, New Hampshire State Medical Board, reports the written examination held at Concord, Sept. 8-9, 1921. The examination covered 11 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 3 passed and 2 failed. Ten candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College.....	(1921)*		89.7
Tufts College Medical School.....	(1921)		75.2
University of Pennsylvania.....	(1920)		83.2
College	FAILED	Year Grad.	Per Cent.
Laval University.....	(1916)		41.7
Osteopath.....			67
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Medical School of Maine.....	(1905)		Maine
Boston University.....	(1898)		Mass.
Harvard University.....	(1912)		Mass.
Tufts College Medical School.....	(1898)		R. Island
(1908), (1919) Massachusetts			
Columbia University.....	(1901)		New York
Jefferson Medical College.....	(1913)		Vermont
University of Vermont.....	(1910)		Vermont
Laval University.....	(1919)		Maine

\* This candidate has finished the medical course, and will obtain the M.D. degree after he has completed a year's internship in a hospital.

### Pennsylvania July Examination

Miss Mary Y. McReynolds, director, Bureau of Medical Education and Licensure of Pennsylvania, reports the written and practical examination held at Philadelphia and Pittsburgh, July 5-9, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 255 candidates examined, 238 passed and 17 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University.....	(1920)		84
Howard University.....	(1919)	75, (1920)	75, 77.6
Chicago College of Medicine and Surgery.....	(1917)		79
Rush Medical College.....	(1886)		77.5
Bowdoin Medical School.....	(1918)		83.6
Johns Hopkins University.....	(1920)		81.2
University of Maryland.....	(1920)		84.8
Boston University.....	(1918)		77.5
Harvard Univ....	(1900) 85, (1918) 78.6, (1919) 81.2, (1920)		86.2
University of Michigan Medical School.....	(1920)	75, 78.6,	83.8
Columbia University.....	(1910)	77.5, (1917)	78.6
Cornell University.....	(1911)		82.5

New York Medical College and Hospital for Women...	(1917)	84.4	
University Bellevue Hosp. Med. College..	(1919)	87.2, (1920)	84.6
Western Reserve University.....	(1920)	79.8	
Hahnemann Medical Coll. and Hosp. of Philadelphia..	(1917)	77.2,	
(1920)	75, 75, 75.4, 77.2, 77.4, 77.4, 78.6, 79, 79.2,		
	80.4, 80.4, 80.8, 81, 81, 81.6, 81.8, 82, 82.4, 82.6,		
	83.4, 83.8, 85		
Jefferson Medical College.....	(1916) 75, (1917) 75, (1919)	75,	
	75.6, 76, 77.2, 82.4, 83.4, 83.4, 88.8, (1920) 75,		
	75, 75, 75, 75, 75.2, 75.8, 76.2, 76.4, 76.4, 76.8, 77,		
	77, 77, 77.2, 77.6, 77.6, 77.6, 77.6, 77.8, 77.8, 77.8,		
	77.8, 78.4, 78.4, 78.4, 78.6, 78.8, 79, 79.2, 79.4,		
	79.4, 79.4, 79.6, 79.8, 80.2, 80.2, 80.6, 80.8, 81,		
	81.2, 81.6, 81.8, 82, 82, 82.4, 82.4, 82.8, 82.8, 83.2,		
	83.6, 83.8, 83.8, 83.8, 83.8, 83.8, 83.8, 84.8,		
	85.2, 85.2, 85.8, 86.2, 86.4, 86.4		
Temple University.....	(1917) 83, (1918) 75.4, (1919)	75,	
	76.8, 80.2, (1920) 75, 75.4, 78.2, 78.6, 79, 80.2,		
	80.4, 80.8, 81, 81.6, 81.8, 82.2, 85.4		
University of Pennsylvania.....	(1918)	85.2,	
	87.6, (1919) 76.2, 81, 81.4, 83.2, 85.4, 85.6, 87.8,		
	88.2, (1920) 76.8, 76.8, 77.2, 77.6, 78, 78.2, 78.4,		
	78.4, 78.6, 79, 79, 79.2, 79.2, 79.2, 79.6, 79.6, 80.4,		
	80.4, 80.8, 80.8, 81, 81.2, 81.2, 81.2, 81.2, 81.4,		
	82, 82.8, 83.2, 83.6, 83.8, 84, 84, 84.2, 84.2, 84.4,		
	84.4, 85, 85.2, 85.4, 87, 87.4, 87.6, 87.8, 88, 88.2,		
	89.6		
University of Pittsburgh.....	(1920)	76.2,	
	76.6, 77, 77.6, 78.8, 79.6, 79.8, 80.2, 81.4, 81.4,		
	81.6, 81.8, 82, 82.2, 82.2, 82.4, 82.6, 82.8, 83, 83.2,		
	83.4, 84.6, 84.8, 84.8, 85.4, 85.4, 85.6, 86.6,		
	87.2, 88.4		
Woman's Medical College of Pennsylvania.....	(1919)	83,	
(1920)	81.6, 82.2, 82.4, 83.4, 86		
Vanderbilt University .....	(1913)	77.8	
University of Texas.....	(1919) 79.4, (1920)	84.6, 85.8	
University of Naples.....	(1911)*	75	
University of Rome.....	†	75	

College	FAILED	Year Grad.	Number Failed
Kentucky School of Medicine.....	(1893)		1
University of Louisville Medical Department.....	(1911)		1
Leonard Medical School.....	(1909)		1
Cleveland Medical College.....	(1895)		1
Pulte Medical College.....	(1900)		1
Jefferson Medical College.....	(1920)		4
Medico-Chirurgical College of Philadelphia.....	(1915)		1
Temple University..... (1919, 2), (1920, 2)			4
University of Naples..... (1917)*			1
University of Padua..... (1917)*			1
University of Central Spain..... (1916)*			1

\* Graduation not verified.

† No year of graduation given.

### Michigan October Examination

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports the written examination held at Lansing, Oct. 11-13, 1921. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Fourteen candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University.....	(1921)		78.7
Chicago College of Medicine and Surgery.....	(1917)		79.4
Loyola University.....	(1918)		78.9
Northwestern University.....	(1921)	80.9, 82.8*	
Johns Hopkins University.....	(1921)		85.9
University of Pennsylvania.....	(1913)		83.9
University of Pittsburgh.....	(1920)		83.1
McGill University.....	(1920)		83.7
University of Toronto.....	(1920)		82.8
University of Vienna.....	(1914)†		81.7
University of Budapest.....	(1917)†		76.8
University of Rome.....	(1920)†		76.8
Medical School of the American Univ. of Beirut.....	(1907)†		80.5

\* This candidate has finished the medical course, and will obtain the M.D. degree after he has completed a year's internship in a hospital.

† Graduation not verified.

### Montana October Examination

Dr. S. A. Cooney, secretary, Montana State Board of Medical Examiners, reports the written examination held at Helena, Oct. 4-6, 1921. The examination covered 10 subjects and included 50 questions. An average of 75 per cent. was required to pass. Of the 10 candidates examined, 9 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University.....	(1921)		83.1
Rush Medical College.....	(1917)		82.6
State University of Iowa College of Homeo. Med.....	(1903)		78.4
University of Louisville Medical Dept.....	(1921)		77.5
University of Maryland.....	(1920)		82.8
University of Minnesota.....	(1921)		80.2
St. Louis University School of Medicine.....	(1921)	77.6, 80.1	
John A. Creighton Medical College.....	(1919)		83
College	FAILED	Year Grad.	Per Cent.
Medical College of Virginia.....	(1918)		68.3



## Book Notices

**ATLAS FOR ELECTRO-DIAGNOSIS AND THERAPEUTICS.** By F. Miramond de Laroquette, M.D., Médecin Principal, Chef des Services d'Electro-Radiologie de l'Afrique du Nord à Alger. Authorized Translation by Mary Gregson Cheetham, Dame Infirmière Militaire. Foreword by Robert Knox, M.D., Hon. Radiographer King's College Hospital. Cloth. Price, \$4.50. Pp. 180, with 52 illustrations. New York: Paul B. Hoeber, 1921.

First, the translation of the title is wrong. It should be "Atlas of Electrodiagnosis and Physiotherapy." There is considerable space given to matter not pertaining to electricity; e. g., fifty-eight pages on articulations. The book is made up of plates, fifty-two of them, with descriptive text. Some of the plates are purely anatomic, having nothing directly to do with electrodiagnosis or physiotherapy, and are mere repetitions of standard anatomic illustrations. Many are excellent cuts of muscles and nerves, showing the motor points of muscles and where the nerves are most accessible. There is a very good table of the electric excitability of nerves and muscles, but the faradic excitability is expressed in terms of centimeters on a standard French machine and is consequently of little practical value, except in relativity. The figures and text on the joints are of no especial value to a physician with a library, and are useless for a layman. The illustrations are handy for quick reference, but the work is too limited in scope for the general practitioner, who will be better served by one of the several manuals on electrodiagnosis and electrotherapy already in circulation. For the nurse or layman doing electric work it will serve as a reliable and very useful guide—under proper supervision. The translation is only fairly well done. It shows lack of medical knowledge and of familiarity with the English equivalents of anatomic and electric terms.

**APPLIED COLLOID CHEMISTRY. General Theory.** By Wilder D. Bancroft, Professor of Physical Chemistry at Cornell University. Cloth. Price, \$3. Pp. 245. New York: McGraw-Hill Book Company, Inc., 1921.

This book is the first of a proposed series on colloidal chemistry, and deals specifically with the general theories rather than with their application in industries and sciences. The nature and laws of absorption, surface tension, colloidal solution, emulsion and foam formation are discussed in a clear, brief manner, with a minimum of mathematics and a maximum of elucidation. Most of the cases selected for illustration are taken from industrial chemistry, but many are from everyday life, and they help maintain the reader's interest. The biologic and medical applications receive no special consideration. As a statement of the general theories of colloidal chemistry, which is all it pretends to be, this book is a reliable and altogether readable exposition. An equally well prepared and up-to-date companion volume on colloid chemistry in biology and medicine would be an invaluable addition to the literature of these sciences. We hope it may follow soon.

**PRACTICE OF MEDICINE.** Edited by Frederick Tice, M.D., Professor of Medicine and Clinical Medicine, and Head of the Department of Medicine, University of Illinois, College of Medicine. In ten volumes. Volumes V, VI and VII. Leather. Price, \$115 per set. Hagerstown, Maryland: W. F. Prior Company, Inc., 1921.

The incomplete fifth volume contains articles by Wolfer on rat-bite fever and glanders, and by Woody on anthrax, Bartley on tetanus, Fricks on Rocky Mountain spotted fever, Bass on hookworm disease, Byfield on Hodgkin's disease and Whitman on diseases due to nemathelminths and arthropods. Cooke treats of allergic coryza and bronchial asthma, Jermain of diseases of the lung, and C. P. Emerson of diseases of the pleura. The articles as a whole seem to us somewhat above the standard of those that have appeared in previous volumes. We have been especially attracted by the articles on Rocky Mountain fever, Hodgkin's disease and hookworm disease, though more critical examination might show that others were fully as deserving of praise.

The sixth volume is incomplete. It contains a good article by Warfield on diseases of the arteries—arteriosclerosis, thrombo-angiitis obliterans, aortitis, aneurysm, coronary thrombosis, etc. There is a brief but comprehensive and

practical discussion of clinical blood pressure. Acute endocarditis is discussed by H. G. Webster. The picture of the malignant type is none too clearly drawn. The table showing the characteristics of the principal endocardial murmurs is fragmentary and would be more suitably placed in the chapter on chronic valvular disease where, in fact, all these points are repeated. T. F. Reilly handles the subject of chronic valvular disease of the heart and handles it well. We are pleased to note that under the head of treatment he prescribes hope for his patients. He truthfully says: "It is one of the best medicines. . . . It is surprising what a beneficial effect hopeful announcements have on the cardiac patient." There is a short chapter on heat exhaustion by L. C. Johnson, and a full consideration by Schereschewsky of morbid conditions due to changes in barometric pressure—compressed air illness and mountain sickness. Seventy-five pages are devoted to a discussion by Soutter of diseases of the bones and joints. The chapter can hardly be regarded as satisfying whether considered from the standpoint of internal medicine, general surgery or orthopedics, because the descriptions are of such a meager, quiz-compend character. About half the space of this chapter is taken up by illustrations, many of them, however, quite helpful. Hoover has a short article devoted to diseases of the muscles. He cites several illustrative cases from his own experience.

The seventh volume is likewise incomplete. There is a short chapter on diseases of the salivary glands by Joachim, and one on stomatitis by J. S. Davis. Joachim also writes on diseases of the pancreas. A long chapter, but no longer than the subject warrants, on diseases of the liver, gallbladder and biliary ducts is by John and W. Ewart Ferguson. A good article on jaundice by C. A. Elliott makes unnecessary the ten pages devoted to the same subject by the Fergusons.

**A MANUAL OF SELECTED BIOCHEMICAL METHODS, AS APPLIED TO URINE, BLOOD AND GASTRIC ANALYSIS.** By Frank P. Underhill, Ph.D., Professor of Pharmacology and Toxicology, School of Medicine, Yale University. Cloth. Price, \$3 net. Pp. 232. New York: John Wiley & Sons, Inc., 1921.

This manual is the outgrowth of a course in biochemical methods given by the author in the Yale University School of Medicine. It makes no claim to originality, the methods having been compiled from various sources. The fields of urine, blood and gastric chemical analysis are completely covered, the methods selected being admirable and those generally adopted by the best workers in these fields. It is pleasing to note that practically all of these methods have been originated in the United States. The descriptions of the methods follows those of the original literature. The arrangement of the methods is excellent, and the make-up of the book good. This work should find wide adoption in medical schools, by physicians and by general laboratory workers.

**DIE PHYSIKALISCHEN UND TECHNISCHEN GRUNDLAGEN DER MESSUNG UND DOSIERUNG DER RÖNTGENSTRAHLEN.** Von Dr. rer. nat. et phil. Friedrich Voltz, physikalischer Assistent der Strahlenabteilung der Universitätsfrauenklinik, München. Paper. Price, 96 marks. Pp. 300, with illustrations. Berlin: Urban & Schwarzenberg, 1921.

This is an exceedingly technical presentation of the problem of physics of the roentgen ray. The book is filled with minute descriptions of many of the phases of this subject. It will be of greatest value to the engineer engaged in roentgen-ray work. It is so technical that the average roentgen worker will find it difficult to follow. Its technical value is unquestioned, but as a practical treatise it can hardly be said to offer much to the average roentgenologist.

**A LABORATORY HANDBOOK FOR DIETETICS.** By Mary Swartz Rose, Ph.D., Associate Professor Department of Nutrition, Teachers College, Columbia University. Revised edition. Cloth. Price, \$2.10. Pp. 156. New York: The Macmillan Company, 1921.

The revised edition of this well known dietetic manual reflects the advances that have been made in the science of feeding during the last ten years; the book is well arranged and serves its purpose as a laboratory textbook excellently. It may well be used as a textbook in training medical students in the art of feeding patients, as this particular phase of teaching has been rendered more difficult than necessary because of the difficulties in comprehending the fundamental scientific basis of diets.



## Medicolegal

### Roentgenograms as the Best Evidence

(*Daniels v. Iowa City (Iowa)*, 183 N. W. R. 415)

The Supreme Court of Iowa, in affirming a judgment in favor of the plaintiff for damages for personal injuries, says that error was assigned on the refusal of the trial court to permit the defendant's expert to testify as to what appeared in the roentgen-ray photographs of the plaintiff's injured leg. The photographs themselves were the best evidence of what appeared on them. To sustain the defendant's contention as to the roentgen-ray photographs in question, the supreme court would necessarily reverse its holding in *Elzig v. Bales*, 135 Iowa, 208, 112 N. W. 540, and *Lang v. Light, Power & Ry. Co.*, 185 Iowa, 940, 170 N. W. 463. Whatever criticism may be directed against the rule announced in the foregoing cases, the record showed that this expert was permitted to testify as to what roentgen-ray photographs show, how they are taken, how things are indicated thereon, and his physical examination of the plaintiff. The supreme court appreciates that too strict an application of the best evidence rule as applied to roentgen-ray photographs is not desirable, but it could not be said under the instant record that any prejudice resulted in sustaining the objections to the questions propounded. It is proper for an expert to explain a roentgen-ray photograph in such particulars that are not understood by a layman. What the jury could see and understand about the matter is not the subject of expert testimony, and this the supreme court understands to be the effect of its prior decision. A roentgenogram may be used for purposes of demonstration by an expert as if he had the object itself before the jury for explanation. That the bone can be distinguished from the flesh in a roentgen-ray photograph, and that the bone would make a heavier shade than the muscle is proper expert testimony. Such scientific facts would not be known by the average layman.

### Liability for Burns from Fluoroscopic Exposures— Care Required

(*Evans v. Clapp et al. (Mo.)*, 231 S. W. R. 79)

The Kansas City (Mo.) Court of Appeals affirms a judgment for \$5,000 damages for the plaintiff, against the defendants, a physician and a hospital company, for alleged malpractice in the use of a fluoroscope, resulting in a burning of the plaintiff, who claimed that twenty exposures were made within eight days, while the physician insisted there were only eight exposures. The plaintiff had gone to him to ascertain the cause of headaches from which she suffered, and on the first examination with the fluoroscope he found it to be a fallen or low-lying stomach. Because the roentgen rays were not applied in this case for purposes of treatment, but merely to ascertain the cause of the plaintiff's headaches, which was disclosed at the first examination, the court says, that there was no room for the application of any theory of mere honest mistake in the careful application of a treatment intended to be applied in the accomplishment of a result similar to the one produced but not to the extent thereof. On the contrary, the roentgen ray was to be used only to discover a condition which was at once shown, and the many other exposures were not made in the interest of the patient, but for other purposes, some of them being made for a young physician and others to see.

Examinations, when carefully and properly made, do not produce burns; hence when a burn is produced, this fact is of itself some evidence from which the jury may find that the degree of care and skill ordinarily exercised by persons of like profession and using such agencies was not exercised in that particular case.

Of course, the rules governing the duty and liability of physicians and surgeons in the performance of professional services are applicable to them in the use and manipulation of a roentgen-ray machine. In applying this dangerous agency, they must use such reasonable and ordinary care,

skill and diligence as is ordinarily possessed by others in the same line of practice and work in similar localities. It would seem that the ordinary care required in the use of the roentgen-ray agency, a dangerous thing if not properly used, would not be quite subject to the distinction usually made between ordinary medical practice in a rural and in a city community, for the standard of care in the use of roentgen-ray machines must be derived from among the users thereof, and the term "similar localities" must, in this connection, have a somewhat general and relative meaning so as to include other users of such machines who possess the ordinary proficiency in, and acquaintanceship with, the use of that agency which obtains in similar localities or in the same section of country.

The court cannot see how the defendants were harmed by an instruction that by the phrase "reasonable skill, care and prudence" was meant that degree of skill, care and prudence that an ordinarily capable physician would use in the same or like situation and condition of circumstances. That stated the degree of care and skill which has been approved. The court fails to see any material distinction between the skill, care and prudence of "an ordinarily capable doctor," and the "ordinary skill, care and prudence used by the average members of the profession," which was approved in two cases. Of course the jury could not have failed to understand that it meant an ordinarily capable doctor, ordinarily skilled in the use of such a machine.

### Requirements for Practicing the Art of Healing

(*Williams et al. v. Scudder et al. (Ohio)*, 131 N. E. R. 481)

The Supreme Court of Ohio says that notwithstanding it had before sustained the constitutionality of the medical practice act, both general and limited, it decided on another review of these constitutional questions, as though they were originally before the court; and it says that it gave unusual research and consideration to the questions herein involved. The action was one in injunction, brought by the plaintiffs for themselves and all others similarly situated, some 300 in number. The petition in substance declared that the acts of April 27, 1915, and March 11, 1919, both violated the federal and state constitutions, and that arbitrary discriminations had been made by the defendants against the practitioners of chiropractic. The supreme court, however, affirms a judgment of the court of appeals dissolving an injunction that was granted and dismissing the petition at the cost of the plaintiffs. It particularly holds that the statutory qualifications defined by Section 1270 of the General Code, as preliminary to taking an examination of persons desiring to secure a license to practice the art of healing in Ohio, are reasonable and valid statutory provisions, and are in full force and effect in the limited practice act, until lowered by any rule or regulation of the Ohio state medical board, pursuant to the statute. The act passed April 27, 1915, further regulating the practice of medicine and surgery, by authorizing the examination and registration of practitioners in the limited branches thereof, is a constitutional and valid exercise of legislative power. If it be constitutional for the general assembly generally to regulate the practice of medicine and surgery in the state, it would seem to follow that it had the same right to regulate any part and to provide in that regulation for a limited practice act.

Of late years the doctrine of conservation, the supreme court says, has received a new impetus in our American system of government. Originally, this doctrine was applied largely to mines, forests, water power and our natural resources. Later it was extended to hogs, cattle, buffaloes and wild animals generally and, strange to say, lastly it was applied to human beings. In primitive life every man was his own dentist, doctor, lawyer. Why? Because there were no specialists, and one man was about as smart as another. In the course of our civilization and education we came to realize that in many departments of life special knowledge and training were highly necessary, and that the time had gone by when any person had the right to assume that he could skilfully exercise the healing art, advertise to such effect, and induce the public to believe he was so qualified, without the slightest evidence of such qualification.



It is surely only elementary to say that before one can treat a disease intelligently and efficiently he must know much about the nature and extent of that disease, the organs and parts affected, and even the cause of that disease. As the body politic is sometimes found to be in possession of undesirables, foreign to our government and inimical to our public welfare, that require immediate and drastic deportation to other shores, so the physical body is not infrequently found to be in the possession of some foreign growth whose immediate removal is indispensable to the health and life of the patient. To say that such knowledge in no way pertains to the chiropractor is sheerest nonsense, even to a layman. Hot and cold applications are ordinarily most efficacious for temporary relief, and very seldom harmful; but merely because they are generally harmless is scarcely a reason why they should be resorted to in all cases to furnish relief. The failure to give the natural and necessary relief called for by the condition of the patient, in the shape of some positive or affirmative action by way of treatment, may be as harmful as the giving of a treatment that is harmful per se, or in and of itself. What the patient often needs immediately is helpful treatment, and not merely harmless treatment. It matters not that the conditions or qualifications required by the law may be rigorous and exacting; the sole question is as to whether or not they are attainable by reasonable study and application.

#### Court Ordering Granting of License—Sufficient Hearing—Board Findings

(*State Board of Medical Examiners v. Brown (Colo.)*, 198 Pac. R. 274)

The Supreme Court of Colorado holds that it was error for the district court, in considering this case on a writ of certiorari after the state board of medical examiners had refused petitioner Brown a license to practice chiropractic, to order the board to issue him a license. The supreme court says it was stated the court held the petitioner entitled to a license because the allegations of his petition as to his qualifications were not denied. In this there was error for two reasons: First, the petition required no answer; it had served its purpose when the writ issued, and its allegations were not to be taken as tendering an issue. Second, the review extends only to a determination, from the record alone, of the question whether the inferior tribunal regularly pursued its authority, and thereupon pronounced judgment accordingly. A cause heard on certiorari cannot be heard on its merits. Section 331 of the Code of Civil Procedure of Colorado provides that the writ shall be granted when an inferior tribunal, board, or officer exercising judicial functions has exceeded or greatly abused the discretion of such tribunal, board or officer, and there is no appeal, etc. By "abuse of discretion" is meant a failure of the tribunal regularly to pursue its authority. This does not include the commission of errors of law, or mistakes in the findings of facts.

The petitioner contended that he was entitled to a thirty days' notice of an adverse finding, and an opportunity to present additional evidence; and that failure to give him such notice constituted, on the part of the board, an abuse of its discretion. It appeared that his application was filed, March 7, and that on April 3 consideration of the application was deferred for further investigation. July 5, the applicant appeared before the board and submitted evidence in support of his application, which was dismissed "on the ground that the board was not satisfied that he possessed the qualifications required by the statute to entitle him to a license." As he appeared in person, and introduced his evidence on the hearing four months after the filing of his application, he was not entitled to have a further hearing on a thirty days' notice, or otherwise.

Complaint was made, also, that the board did not specifically find that the applicant did not possess the required qualifications. The dismissal of the application, on the grounds stated, after hearing had, was, in effect, a finding that the applicant did not have the required qualifications. The requirement is that the board find, i. e., reach a conclusion on the matter, not that it make findings in due form. While it would undoubtedly be better for the board to make formal findings, and make them a matter of record, the failure

so to do was not to the prejudice of the petitioner. This disposed, also, of the claim that the petitioner was entitled to be advised as to which of the requirements for a license he was lacking.

The cases cited by the petitioner involving questions arising on mandamus were not applicable in this proceeding. In no event could the district court, on a proceeding of this kind, direct the granting of a license. If it found that the board had exceeded its jurisdiction, or failed regularly to pursue its authority, the duty of the court was to remand the cause to the board for a rehearing. The judgment rendered in this case is reversed and the cause remanded to the district court, with directions to dismiss the writ.

#### Courts May Order More Than One Physical Examination

(*City of Valparaiso v. Kinney (Ind.)*, 131 N. E. R. 237)

The Appellate Court of Indiana, in reversing a judgment for \$2,500 damages obtained by plaintiff Kinney for alleged permanent injuries to her left arm, elbow and shoulder, holds that there was an abuse of discretion in the trial court's refusal to order a second physical examination of the plaintiff by a physician or physicians to be appointed by the court. The appellate court says that the only physical examination that had theretofore been made under an order of court was had about eleven months after the plaintiff had received her injuries, and nineteen months before the trial of the cause. The injuries were of such a character that Nature would probably work a great change for the better in the course of time, even if a substantial cure was not effected. Under such circumstances it must be evident that knowledge of the plaintiff's condition at the time of the trial, which occurred about two and one-half years after the injuries were received, would have been very helpful to the court or jury trying the cause, in meting out justice between the parties.

It is well settled in Indiana that a motion to require a plaintiff to submit to a physical examination in actions of this kind is addressed to the sound discretion of the trial court, and that the exercise of such discretion is reviewable on appeal, and correctable in case of abuse; and it is clear to the appellate court that courts have authority to order more than one physical examination of a plaintiff in an action for damages on account of personal injuries. It is apparent that under certain circumstances a single physical examination may not fully accomplish, and possibly could not fully accomplish, the purpose sought, which is to enable the courts to obtain, as nearly as possible, the exact and full truth concerning the matters in controversy, in order that they may bestow on litigants equal and exact justice. When such circumstances exist, the reasons which lead courts to assume authority to order physical examinations in the first instance afford ample justification for a further exercise of authority in that regard. The amendment of a complaint, after a physical examination has been had, which alleges injuries not mentioned in the original complaint, a refusal to submit fully to a reasonable examination in the first instance, deception practiced by the plaintiff with reference thereto, a claim that unusual developments of a serious nature have resulted from such injuries, a long period of time intervening between the date of the first examination and the trial of the cause, the death of the physician who made the first examination under order of the court, or the inability of the defendant to procure his attendance at the trial, or to secure his deposition as a witness, may be cited as circumstances of the kind mentioned.

In holding that more than one physical examination of a plaintiff may be ordered under certain circumstances, this court, however, does not mean to imply that a defendant may demand either a first or a subsequent examination under an order of court as a matter of right, or that the making of such an order is not within the sound discretion of the court, subject to review on appeal for abuse in the exercise thereof, or that a physical examination should ever be ordered without sufficient cause, or so frequently as to annoy the plaintiff unduly, or at such times and places as to cause unnecessary embarrassment. On the other hand, this court holds that courts, in the exercise of their discretion, should fully protect plaintiffs in that regard.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Obstetrics and Gynecology, St. Louis

October, 1921, 2, No. 4

- Pneumoperitoneum and Roentgenology as Aids to More Accurate Obstetric and Gynecologic Diagnosis. R. Peterson, Ann Arbor, Mich.—p. 349.
- \*Vaginal Supracervical Hysterectomy with Interposition of Cervical Stump for Cystocele and Procidentia Associated with Enlargement of Uterus. H. N. Vineberg, New York.—p. 368.
- Interpretation of Vesical Symptoms in Gynecologic Diagnosis. F. E. Keene, Philadelphia.—p. 375.
- Certain Dietary Factors in Causation of Sterility in Rats. E. Reynolds and D. Macomber, Boston.—p. 379.
- \*Management of Large Cystocele When Associated with Nonmalignant Disease of Cervix and Myomata Uteri. L. K. P. Farrar, New York.—p. 395.
- Sterility Studies. Simplified Methods in Diagnosis. W. H. Cary, Brooklyn.—p. 406.
- Treatment of Syphilis Complicating Pregnancy. A. C. Beck, Brooklyn.—p. 416.

**Vaginal Supracervical Hysterectomy.**—In more than one third of the cases of procidentia and cystocele the uterus is found too large to be adapted for interposition. Decreasing the size of the uterus by excising a portion of the anterior wall or fundus has been found unsatisfactory on account of the rarity of obtaining primary union of the thickened and diseased walls of the uterus and the consequent high morbidity and mortality. A much more advantageous procedure, Vineberg asserts, consists in amputating the body of the uterus at the level of the internal os or higher up (if the patient be under 40 years of age) and interposing the cervical stump.

**Management of Large Cystocele.**—The technic of Farrar's operation so far as it pertains to the vaginal work, follows closely the method laid down by Ward and in the freeing and elevating of the bladder from within the abdominal cavity and the suturing of round and uterosacral ligaments to the stump of the cervix, is very similar to the technic of Polk. The bladder is completely freed from its vaginal attachments. Supravaginal hysterectomy is done and the round ligaments (and the tubes and ovaries if not removed) are fastened anteriorly to the stump of the cervix at the same level and to the uterosacral ligaments posteriorly to form a platform on which to spread out the bladder. Two stitches tack the bladder to the anterior part of the platform.

#### American Journal of Psychiatry, Baltimore

October, 1921, 1, No. 2

- Social Service and Outpatient Relations. J. B. Macdonald, Hathorne, Mass.—p. 141.
- How State Hospital Cooperated with University to Meet a Community Need. H. I. Klopp, Allentown, Pa.—p. 159.
- Extra-Institutional Activities for Mental Defectives in New York State. W. C. Sandy.—p. 167.
- What Happened to Discharged Patients. G. K. Butterfield, Hathorne, Mass.—p. 177.
- Neuropsychiatric Wards of the United States Government; Their Housing and Other Problems. J. J. Kindred, Queensborough, N. Y.—p. 183.
- Diagnosis and Treatment of Dementia Praecox. W. A. White.—p. 193.
- Study of "X": Psychometric and Otherwise. L. H. Ziegler, Washington, D. C.—p. 199.

#### American Journal of Roentgenology, New York

November, 1921, 8, No. 11

- \*Effects of Roentgen Rays on Gastric Hyperacidity. L. Bryan and H. F. Dormody, San Francisco.—p. 623.
- \*Treatment of Leukemia. H. B. Thompson, Seattle.—p. 629.
- Suboccipital Pott's Disease. C. M. Richards, San Jose Calif.—p. 632.
- \*Roentgen-Ray Treatment of Toxic Goiter. R. G. Allison, A. H. Beard and G. A. McKinley, Minneapolis.—p. 635.
- Cases of Genito-Urinary Pathology. L. B. Groeschel, New York.—p. 641.
- Developmental Rests in Cecum and Ascending Colon and Their Roentgen-Ray Diagnosis. R. A. Payne and F. C. Trahar, Portland, Ore.—p. 643.
- Roentgenologic Aspect of Sprengel's Deformity. E. S. Blaine, Chicago.—p. 654.
- Modification of Technic for Roentgenographing Upper Molars. C. A. Le Master, St. Louis.—p. 659.

- \*Radium Combined with Roentgen-Ray Treatment in Carcinoma of Breast. G. E. Pfahler, Philadelphia.—p. 661.
- \*Radium in Treatment of Carcinoma of Breast as Adjunct to Surgery. B. R. Kirkendall, Columbus, Ohio.—p. 668.
- Dosage in Radium Therapy. G. Failla, New York.—p. 674.

**Effect of Roentgen Rays on Gastric Hyperacidity.**—Bryan and Dormody report favorable results from the use of the roentgen ray in the treatment of gastric hyperacidity; several patients have been free from symptoms from three to six months.

**Treatment of Myelogenous Leukemia.**—Two cases of myelogenous leukemia are reported by Thompson which have shown the usual very marked improvement following roentgen-ray therapy.

**Roentgenotherapy of Exophthalmic Goiter.**—Of twenty-seven cases of exophthalmic goiter without complications, subjected to roentgen-ray treatment, but not operated, twenty-four patients are well, both from the clinical and laboratory standpoint. The treatment has been complete for nearly eight months. The remaining three cases came to operation. One patient was definitely improved before operation, the other two patients were normal a few months after operation. Of six cases of postoperative hyperthyroidism, which had relapsed, one showed a definite cure. The other five showed no improvement. Of three cases of thyrotoxic adenoma none showed any response to roentgen-ray therapy. No bad results or complications, which could be attributed to the treatment, have occurred in any case.

**Roentgen Ray and Radium Treatment of Breast Cancer.**—Pfahler says the best procedure for the treatment of primary carcinoma of the breast will probably consist of anteoperative roentgen-ray treatment followed promptly by an operation, and again promptly by postoperative roentgen-ray treatment. For inoperable primary carcinoma of the breast a reasonable hope of success can be entertained as a result of radiation treatment by roentgen rays and by radium, providing it is skilfully and thoroughly used; and the earlier it is applied the greater will be the success. Recurrent and metastatic carcinoma from carcinoma of the breast can frequently be made to disappear completely by thorough and skilful application of either radium or roentgen ray, but probably better by a combination of both, and success can be hoped for providing the disease is localized to the area treated.

**Radium and Surgery in Treatment of Breast Cancer.**—Kirkendall is convinced that radium therapy, after a radical operation for cancer of the breast, greatly lessens the chances of recurrence. In local recurrences of breast cancer, its use often meets with success. In the nonoperative cases—those which were inoperable, and those which would not submit to surgery—the results obtained by radium treatment alone encourage one to its continued use. The preoperative and postoperative use of radium in cancer of the breast, is highly recommended, particularly in the virulent cases.

#### Annals of Surgery, Philadelphia

November, 1921, 74, No. 5

- \*Results of Twenty-One Cases of Surgical Treatment of Aneurysm. W. O. Ott, Rochester, Minn.—p. 513.
- \*Transorbital Puncture of Gasserian Ganglion. C. M. Van Allen, New Haven, Conn.—p. 525.
- \*Methods of Procedure in Resection of Esophagus. C. Y. Bidgood, Baltimore.—p. 546.
- Surgery of Lung. S. Lloyd, New York.—p. 557.
- Gangrene of Extremity as Complication of Pneumonia. W. D. Wise and E. E. Mayer, Baltimore.—p. 565.
- \*Central Bone Abscess (Brodie's Abscess). C. A. McWilliams, New York.—p. 568.
- Peptic Ulcer, Primary and Secondary. J. B. Deaver, Philadelphia.—p. 579.
- Experimental Intestinal Obstruction. H. B. Eisberg, New York.—p. 584.
- \*Fundamentally New Technic for Inguinal Herniotomy. M. Pitzman, St. Louis.—p. 610.
- Incomplete Rupture of Axillary Artery. J. Eaves and P. Campiche, San Francisco.—p. 620.
- Arterial Hematoma Following Traumatic Rupture of Popliteal Artery. A. H. Harrigan, New York.—p. 625.
- Fragilitas Ossium. E. A. Vander Veer and A. M. Dickinson, Albany, N. Y.—p. 629.
- \*Technic for Leg Amputation. T. G. Orb, Kansas City, Mo.—p. 633.

**Surgical Treatment of Aneurysm.**—The results in the cases reported on by Ott seem to indicate that double ligation and excision of the sac is the method of choice in cases of



aneurysm of the small arteries, since shutting off their blood supply is not followed by untoward results. The method of gradual occlusion with clamps gave only indifferent or poor results in the cases in which it was tried.

**Puncture of Gasserian Ganglion to Secure Anesthesia.**—Transorbital puncture of the Gasserian ganglion, Van Allen asserts, furnishes a relatively simple means of securing block anesthesia for operations in the territory supplied by the trigeminus, and is fully justified in cases where general anesthesia is contraindicated.

**Resection of Esophagus.**—The skin-tube method, Bidgood says, should be the method employed in case of carcinoma and stricture of the esophagus, when cure by dilatation with bougies is not possible.

**Central Bone Abscess.**—Given a tender swelling of a bone in which traumatic periostitis, cyst, new growth and syphilis (negative Wassermann) can be ruled out, when associated with intermittent night pains, such a swelling according to McWilliams should always be explored and the medullary cavity opened.

**New Inguinal Herniotomy.**—The essential step in Pitzman's operation is to suture the transverse fascia and aponeurosis down to Poupart's inguinal before the peritoneal cavity has been closed. This technic is said to be universally applicable to all inguinal hernias, and is especially advocated for medium and large-necked hernias.

**Technic for Leg Amputation.**—Orr makes long anterior and short posterior flaps. From the edge of the posterior flap the skin and fat are dissected downward and a flap of fascia freed of sufficient length to turn upward over the cut end of the stump. The muscles are then divided 2 or 3 cm. below the point at which the tibia is to be amputated. The fibula is cut at least 1 cm. shorter than the tibia. Either before or after the bones are severed the periosteum is carefully removed about the cut ends for a distance of 0.5 cm. and the marrow is scooped out. The tibial crest is then removed for 2 to 3 cm., so that there will be no sharp points or edges beneath the anterior flap. Sharp or rough edges, if there be any, are made smooth by rongeur or coarse file. The nerves are then carefully freed, drawn out of the stump as far as possible, and injected with absolute alcohol. The nerve is then divided just below the injected point. All bleeding vessels are ligated. The entire mass of muscle is grouped together with one strong purse-string chromic suture, which suture crosses over the anterior beveled portion of the tibia. Additional sutures may be placed when necessary to properly fix the muscles together. If the mass of muscle appears too bulky and is likely to produce a bulbous stump, small portions of it may be excised. The already formed posterior fascial flap (which may have with it some of the thinned-out portion of the calf muscle tendons) is turned forward and sutured over the end of the entire stump. The anterior flap is then turned down and the fascia sutured in a few places. This gives two layers of fascia over the end of the bone. The skin is then very carefully closed, shaping the flaps to fit.

### Boston Medical and Surgical Journal

Nov. 24, 1921, 185, No. 21

- Puerperal Sepsis and Its Prophylaxis. L. V. Friedman, Boston.—p. 617.  
 Diagnosis and Treatment of Neurosyphilis. L. H. Spooner, Boston.—p. 622.  
 Graded Effort in Convalescence. H. J. Hall, Marblehead, Mass.—p. 625.  
 \*Effect of *B. Acidophilus* Milk on Cases of Chronic Constipation. H. A. Cheplin, Syracuse, N. Y., and J. I. Wiseman, Middletown, Conn.—p. 627.  
 \*Measles, Study of Epidemic in Watertown, N. Y. I. W. Brewer, Watertown, N. Y.—p. 630.

**Feeding Bacillus Acidophilus Milk in Constipation.**—The chief object of the investigation reported on by Cheplin and Wiseman was to study the therapeutic value of the oral administration of *B. acidophilus* milk in cases of chronic constipation. The *B. acidophilus* was prepared in accordance with the method advocated by Cheplin and Rettger. Living twenty-four hour cultures were administered daily to the patients. With but few exceptions 500 c.c. of the milk product reenforced with 100 gm. lactose were ingested by the patients

each day in two equal doses. At no time during the investigation were any special or modified diets prescribed, and the sour milk was consumed regularly in addition to the ordinary daily dietary regimen. No cathartics or laxatives were taken by any patient throughout the entire experimental period. In the eight cases studied the favorable effects of the *B. acidophilus* lactose milk feeding on chronic constipation was quite apparent. In most of the cases the response was prompt and daily evacuations were recorded. Although in some cases the influence of the ingestion of the *B. acidophilus* milk in 500 c.c. quantities was less pronounced at the start, quite an appreciable difference in the effect on the bowel movements was noted when the amounts of the *B. acidophilus* milk and added lactose were doubled. Within a few days after the ingestion of the sour milk and added lactose, daily stools were obtained and a transformation of the flora took place in which the usual mixed bacterial types gave way to a more simplified flora largely represented by *B. acidophilus*.

**Control of Measles.**—Brewer is convinced that until such time as a satisfactory vaccine is developed and the public educated to its use, the crux of the situation is the control of the "common cold." The isolation of "colds" will, without doubt, prevent measles and whooping cough, and will also be the means of bringing many cases of tuberculosis under treatment at a time when they have a good prospect of being cured.

### Illinois Medical Journal, Oak Park

December, 1921, 40, No. 6

- Determination of Dental Focal Infections by Means of Radiogram. M. J. Hubeny, Chicago.—p. 433.  
 Plea for Phototherapy in Surgical Tuberculosis. E. Hoff, Seattle.—p. 435.  
 Several Important Points in Diagnosis of Pulmonary Tuberculosis. R. T. Pettit, Ottawa, Ill.—p. 437.  
 Diagnosis and Treatment of Cancer of Large Bowel. C. B. Davis, Chicago.—p. 441.  
 Factors Determining Efficiency of Operations on Stomach. W. W. Babcock, Philadelphia.—p. 444.  
 Use of Double Snares in Tonsil Operations. J. S. Clark, Freeport, Ill.—p. 448.  
 Influenza Bacillus of Pfeiffer; Its Nutrition and Its Relation to Respiratory Infection. D. J. Davis, Chicago.—p. 448.  
 Ex-Service Cardiopath. J. M. Patton, Chicago.—p. 451.  
 Subphrenic Abscess. J. N. Hall, Denver.—p. 454.  
 Immunization Against Diphtheria with Toxin-Antitoxin Mixtures. G. H. Weaver, Chicago.—p. 459.  
 \*Relation That Exists Between Hypertension, Myocarditis and Nephritis. H. A. Christian, Boston.—p. 462.  
 President Harding Taken to Task for His Attitude on Sheppard-Towner Maternity Bill. M. G. Kilbreth, Washington, D. C.—p. 466.

**Relation Between Hypertension, Myocarditis and Nephritis.**—Christian emphasizes that today we know of no one final cause of hypertension. As to the mechanism, it seems pretty certain that it is caused by a disturbance in the small blood vessels, arterioles and smaller, of the body. There is observational evidence that in some patients hypertension bears some, even though an indirect, causal relation to nephritis and that both in hypertension and in some types of nephritis a lesion of small blood vessels is an important part of the causative mechanism of the processes. Very similar causative factors are operative in the production of myocarditis. In all three conditions disturbance in the small arteries constitutes an important part of the lesion.

### Indiana State Medical Association Journal, Fort Wayne

Nov. 15, 1921, 14, No. 11

- Medicine and State Control. D. Ross, Indianapolis.—p. 371.  
 Lessen Anesthetic Risk. F. N. Shipp, Crawfordsville.—p. 374.  
 Acidosis. M. W. Lyon, Jr., South Bend.—p. 376.  
 "The Physician"—Relation of Profession to Some Disease Habits. F. B. Wynn, Indianapolis.—p. 380.

### Iowa State Medical Society Journal, Des Moines

December, 1921, 11, No. 12

- Analysis of First One Hundred Admissions to Iowa State Psychopathic Hospital. L. G. Lowrey, Iowa City.—p. 453.  
 Standardization of Methods of Treatment in Orthopedic Surgery and in Industrial Surgery of Extremities and Spinal Column. R. B. Osgood, Boston.—p. 462.  
 Use of Digitalis. J. G. Carr, Chicago.—p. 472.  
 \*Lesions of Cervical Sympathetic: Report of Three Cases. T. B. Throckmorton, Des Moines.—p. 479.



**Lesions of Cervical Sympathetic.**—Throckmorton cites three cases: in one the paralysis was due to malignancy; in the second case it was due to toxemia of pregnancy, and in the third the paralysis was caused by an irritation due to an enlarged thymus.

### Journal of Orthopaedic Surgery, Boston

December, 1921, 3, No. 12

- Operative Methods and End Results of Disabilities of Shoulder and Arm. A. Steindler, Iowa City, Iowa.—p. 652.  
Present Tendencies in Treatment of Congenital Club Foot. E. W. Fiske, Pittsburgh.—p. 668.  
End Results in Operative Procedures for Infantile Paralysis, with Special Reference to Tendon Transplantation at Widener Training School for Crippled Children. A. B. Gill, Philadelphia.—p. 677.  
Immobilization Treatment of Septic Knee Joints. F. R. Ober, Boston.—p. 689.  
Removal of Meniscus from Knee Joint. A. H. Freiberg, Cincinnati.—p. 697.  
\*Myeloma of Vertebrae. W. G. Turner, Montreal.—p. 698.  
Cause of Coxa Plana. M. Jansen, Leiden.—p. 706.

**Myeloma of Vertebrae.**—In the two cases reported by Turner pain in the back was the dominant complaint; one patient was 75 and the other 40 years of age. In the first case the pain was referred chiefly to the lumbar region, third and fourth vertebrae, also to the dorsal region, sixth, seventh, eighth and ninth vertebrae and to the right about 4 inches along the sixth, seventh and eighth ribs. No deformity of the column was present. Dorsal decubitus gave some ease, ventral decubitus increased the pain. The tenderness was over the same regions but varied in intensity when tried three or four times. No girdle pain. Reflexes normal; no sensory change; abdomen and thorax negative. The patient failed gradually and died in coma. Superficial examination of the vertebral column revealed only slight enlargement of the lumbar vertebrae without any deformity. On longitudinal section only a peripheral shell—very thin—of bone remained. The vertebrae were replaced by a soft reddish brown (myeloid) tissue. The intervertebral disks were relatively intact and these, with the external shell of bone, held the column together. A similar but less extensive process involved the ribs. The clinical cause and pathology of the second case was similar to that of the first case.

### Kansas Medical Society Journal, Topeka

December, 1921, 21, No. 12

- \*What Is Dementia Praecox? K. A. Menninger, Topeka.—p. 381.  
\*Sterility in Women with Particular Reference to Endocrine Causation and Treatment. J. Rotter, Parsons.—p. 384.  
"Do We Profit by Our Mistakes?" W. E. Mowery, Salina.—p. 387.  
Vitamins. L. C. Axtell, Newton.—p. 390.  
Law for Doctor. L. Childs. Liability for Failure to Diagnose Dislocation or Fracture.—p. 394.

**What Is Dementia Praecox?**—Three points are emphasized by Menninger: (1) cases of the incipient dementia praecox are constantly occurring unrecognized; (2) the practical thing to do in these cases is, the diagnosis once made, the patient should be committed; (3) more facilities and opportunities for and interest in the subjects of research in mental diseases particularly in the matter of dementia praecox.

**Cause of Sterility in Women.**—Rotter cites three examples of sterility due to endocrine disturbances: (1) a case of primary sterility, due to a hypofunction of the posterior part of the pituitary and ovaries; (2) a case of acquired sterility, due to a disturbance of the ovarian, thyroid, and pituitary functions; and (3) an example of hyperactivity of part of the posterior pituitary gland and ovaries as shown by too much trophic and stimulating influence on the endometrium, thus interfering with the imbedding and retaining of the fecundated ovum. That the diagnosis made in the cases cited were correct was shown by the results obtained by the treatment.

### Kentucky Medical Journal, Bowling Green

December, 1921, 19, No. 12

- Cancer of Breast. J. G. Sherrill, Louisville.—p. 761.  
Malignancy of Uterus. L. Frank, Louisville.—p. 765.  
Treatment of Malignant Uterine Conditions with Radium. W. Barrow, Lexington.—p. 770.

- Necessity for Early Recognition of Cancer of Gastro-Intestinal Tract. J. H. Blackburn, Bowling Green.—p. 772.  
Malignancy of Rectum. B. Asman, Louisville.—p. 775.  
Treatment of Malignant Conditions with Radium. W. J. Young, Louisville.—p. 778.  
Aids to Diagnosis in Medicine. H. E. Tuley, Louisville.—p. 790.  
Pericarditis: Pneumonia: Case Report. J. W. Moore, Louisville.—p. 800.  
Penetrating Wounds of Eyeball. C. W. Reynolds, Covington.—p. 804.  
Necessity of Early Diagnosis in Cancer. G. Aud, Louisville.—p. 806.  
Cancer from Standpoint of Internist. W. F. Boggess, Louisville.—p. 808.  
Cancer from Surgeon's Standpoint. C. G. Forsee, Louisville.—p. 811.  
Roentgen-Ray and Radium Treatment of Cancer. W. J. Young, Louisville.—p. 812.  
Ectopic Gestation: Probably Ovarian. Case Report. L. W. Frank, Louisville.—p. 821.  
Case of Cardiospasm in Three-Year-Old Child. J. W. Bruce, Louisville.—p. 824.  
Imperforate Anus: Case Report. J. R. Wathen, Louisville.—p. 827.  
Some Causes of Headache and Their Treatment. W. J. Thomasson, Newport.—p. 829.  
Case of Psoas Abscess Complicated by Appendicitis with Report of Case. W. F. Gardner, Carrsville.—p. 833.

### Laryngoscope, St. Louis

November, 1921, 31, No. 11

- \*Efficiency of Some Artificial Aids to Hearing. P. E. Sabine, Geneva, Ill.—p. 819.  
Complete Spheno-Ethmoid Operation. S. Yankauer, New York.—p. 831.  
Gangosa. H. Aarrowsmith, Brooklyn.—p. 843.  
Septicemia and Death Following Streptococcus Tonsillitis. M. C. Myerson, Brooklyn.—p. 847.  
Pulmonary Complications Following Nose and Throat Operations. C. R. C. Borden, Boston.—p. 851.  
Relation of Internist to Diseases of Middle Ear and Mastoid Process. W. B. Chamberlin, Cleveland.—p. 862.  
Direct-View, Self-Retaining Laryngoscope. M. Unger, New York.—p. 866.  
Case of Traumatic Abducens Paralysis. J. Friedman and S. D. Greenfield, Brooklyn.—p. 868.  
Radium in Cancer of Larynx with Particular Reference to Dosage and Dangers in Its Employment. T. J. Harris, New York.—p. 872.  
Modified Septum Speculum. G. D. Wolf, New York.—p. 877.  
Improved Head Lamp. H. M. Hays, New York.—p. 878.

**Efficiency of Artificial Aids to Hearing.**—Viewed in the light of our present attainments in artificial aids to hearing, Sabine believes that the immediate prospects for the alleviation of extreme deafness by such means are not bright. However, recent developments in telephony, notably in the use of the thermionic vacuum tube as a means of amplifying telephone currents afford considerable grounds for hope of securing the necessary increase of intensity. The problems of securing increased amplitude without increased distortion of the wave form is one that presents many physical difficulties. It is essential, at the same time, to know the distortions of sound produced by the defects in the mechanism of hearing. It is obvious, therefore, that the general problem is one calling for highly specialized knowledge and skill in the fields of both otology and physics.

### Missouri State Medical Association Journal, St. Louis

December, 1921, 18, No. 12

- Necessity for Popular Medical Education in Missouri and Some Methods by Which It May Be Secured. F. G. Nifong, Columbia, Mo.—p. 425.  
Hospital and Medical Service in Rural Missouri. G. L. Noyes, Columbia, Mo.—p. 430.  
\*Treatment of Bronchial Asthma with Autogenous Defibrinated Blood. A. C. Henske, St. Louis.—p. 431.  
Neuropsychoses of War and Peace. G. W. Robinson, Kansas City, Mo.—p. 435.  
Roentgen-Ray Findings in Cases of Painful Back. A. O'Reilly, St. Louis.—p. 440.  
Medical Ethics and Ideals. N. M. Wetzel, Jameson, Mo.—p. 444.  
Pithiatric (Hysterical) Mask. F. R. Fry, St. Louis.—p. 448.  
Some Factors in Tuberculosis. F. T. Fahlen, Silver City, N. Mex.—p. 450.

**Autogenous Defibrinated Blood in Bronchial Asthma.**—In the sixteen cases reported on by Henske no attempt was made at trying to identify the causative protein. All the patients gave a clear history of asthmatic attacks extending over a period of six months to thirteen years. Two of these patients were found to have syphilis, in one case hereditary in the other acquired. Both patients made complete recoveries after being placed on antisyphilitic treatment. In both, however, the treatment for asthma seemed to diminish the frequency and severity of the attacks. In each case ten injections of 25 c.c.



of autogenous defibrinated blood were made subcutaneously in the interscapular space. The results have been satisfactory and better than any other method that Henske has used. It has given permanent relief in 56 per cent., temporary relief in 25 per cent., and was of no benefit at all in 19 per cent.

### Oklahoma State Medical Association Journal, Muskogee

November, 1921, 14, No. 11.

- Clinical Nephritis. L. A. Riely, Oklahoma City.—p. 289.  
Kidney Function Tests in Renal Disease. W. Langston, Oklahoma City.—p. 291.  
Pathology of Nephropathy. L. A. Turley, Norman.—p. 295.  
Treatment of Oblique Inguinal Hernia. H. Reed, Oklahoma City.—p. 300.  
Treatment of Paralysis Attending Minor Nerve Injuries. R. V. Smith, Tulsa.—p. 302.  
Functional Disturbances of Nervous System Due to Pelvic Reflexes and Anomalies of Internal Secretions. R. Grosshart, Tulsa.—p. 303.  
\*Case of Strangulated Hernia in Infancy. R. I. Allen, Nowata.—p. 305.

**Strangulated Hernia in Infant.**—Allen's patient was 4 weeks old. The hernia was of the direct inguinal variety; the loop of intestine involved was "dangerously dark" but after being released from the constriction of the external ring began to show signs of recuperation. All symptoms subsided following operation, and the convalescence was without consequences.

### Philippine Journal of Science, Manila

July, 1921, 19, No. 1

- Expression of Octet Theory of Valence in Structural Formulas. G. A. Perkins, Manila.—p. 1.  
Philippine Termites, II. S. F. Light.—p. 23.  
New Species of Vincentia from Philippines. O. Staff, Kew, England.—p. 65.  
\*Preparation of Tikitiki Extract for Treatment of Beriberi. A. H. Wells, Manila.—p. 67.  
Philippine Wasps of Subfamilies Scholiine and Elidine. S. A. Rohwer.—p. 75.  
Higher Basidiomycetes from Philippines and Their Hosts. V. O. A. Reinking, Los Baños.—p. 91.  
Permeability of Citrus Leaves to Water. F. T. McLean, Los Baños.—p. 115.

**Tikitiki Extract in Beriberi.**—By the method described by Wells, which is in use by the Bureau of Science, a clear thick syrup of good flavor is obtained. One mil of this tikitiki extract represents the active constituents of 20 gm. tikitiki, or rice polishings. There are two grades of tikitiki; that from the light-colored or white rice, and that from the dark or red rice. Experimentation with the tikitiki from the red rice did not give satisfactory results; the inactive substances were not easily precipitated nor wholly separable by centrifuge, and the extract obtained was of a very dark color and harsh in flavor. Tikitiki extract is demonstrating by its therapeutic action that it possesses a high percentage of neuritis-preventing substances and that it is a cure for infantile beriberi. The public welfare board requires 10,000 bottles of this extract monthly.

### Tennessee State Medical Association Journal, Nashville

November, 1921, 14, No. 7

- Treatment of Neurosyphilis. W. H. Leake, Nashville.—p. 245.  
Laceration of Cervix. L. E. Burch, Nashville.—p. 256.  
\*Case of Extraperitoneal Pyosalpinx. P. H. Wood, Memphis.—p. 259.  
Negligence in Care of Cross-Eyed Children. A. C. Lewis, Memphis.—p. 262.  
Unseen in Medicine and Surgery. G. W. Quilian, Atlanta, Ga.—p. 264.  
Conservation of Menstrual Function. J. B. Haskins, Chattanooga.—p. 269.

**Extraperitoneal Pyosalpinx.**—The patient whose case is cited by Wood had been operated on previously for dysmenorrhea. A ventral suspension was done. She came to Wood complaining of pain and frequency of urination, with severe cramplike pains in the lower abdomen. On incising the abdomen Wood found an extraperitoneal pus pocket. A modified Gilliam operation had been performed, but the fallopian tubes were used as guy ropes instead of the round ligaments. The left tube was almost entirely outside of the peritoneal cavity, lying between the posterior portion of the left rectus and its deep fascia.

### Texas State Journal of Medicine, Fort Worth

December, 1921, 17, No. 8

- Compression of Lung in Treatment of Pulmonary Tuberculosis. H. F. Gammons, Dallas.—p. 383.  
Spontaneous Pneumothorax. I. S. Kahn, San Antonio.—p. 384.  
Pregnancy in Tuberculosis. S. E. Thompson, Kerrville.—p. 387.  
Treatment of Mild and Convalescent Tuberculous Patients with Limited Means. E. T. Shields, New York.—p. 390.  
Sixty Years' Résumé in Treatment of Pneumonia. I. L. Van Zandt, Fort Worth.—p. 393.  
Chronic Appendicitis in Women and Its Differential Diagnosis from Other Abdominal Conditions. J. E. Gilcrest, Ennis.—p. 398.  
Some Practical Points in Differential Diagnosis Between Acute Salpingitis and Acute Appendicitis. B. A. Hayes, Lott.—p. 399.

### West Virginia Medical Journal, Huntington

November, 1921, 16, No. 5

- Palliative and Radical Treatment of Uterine Fibroids. R. J. Reed, Wheeling.—p. 167.  
Cholecystectomy Increasingly Frequent Operation of Choice in Dealing with Gallbladder Disease. W. H. St. Clair, Bluefield.—p. 170.  
Blood Transfusion. L. D. Covert, Moundsville.—p. 175.  
\*Two Abdominal Pregnancies in Same Patient Following Supravaginal Hysterectomy. W. A. McMillan and R. H. Dunn, Charleston.—p. 183.  
Anesthesia. R. McMaster, Huntington.—p. 186.  
Nephritis. E. R. Logan, David.—p. 191.  
Physical Diagnosis. C. E. Watson, Coketon.—p. 193.

**Two Abdominal Pregnancies After Hysterectomy.**—Because of a double pyosalpinx McMillan and Dunn removed the tubes, uterus and diseased ovaries of a woman aged 18. The right ovary, with about 1½ inches of the fimbriated end of the tube, being healthy in part was stitched up to the right fold of mucous membrane. The patient became pregnant and was seen again sixteen months afterward. On opening the peritoneum the first thing that presented itself was the thin amniotic sac filled with its fluid and unruptured. Directly above this and over toward the left abdominal wall was a thick wall of clotted blood that came from the separating placenta. The amniotic sac was snipped open. The baby was dead. It weighed 8½ pounds. It was believed to be a 7½ months pregnancy. Fourteen months after this second operation the patient again became pregnant. In the sixth month of pregnancy symptoms of acute abdomen appeared and the patient was again subjected to operation. The fetus was floating unattached in the abdominal cavity, but was about two-thirds enclosed on the right wall by what appeared as normal uterine tissue with the short distal end of the right tube, and about one half a normal appearing ovary on the right side. At the left side of this mass was the protruding amniotic sac with a bulging mass of bleeding placental tissue that had a strong attachment to the sigmoid flexure of the rectum. The baby weighed 4 pounds. The patient did not recover from the exereime loss of blood.

### FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Sing's case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

Dec. 3, 1921, 2, No. 3179

- \*Varicocele in Female. W. E. Fothergill.—p. 925.  
Forecasting: Prognostics of Some Anomalies of Heart and of Urine. W. P. S. Branson.—p. 926.  
Relation of Carcinoma to Infection. W. F. Robertson.—p. 929.  
\*Pathology of Gastric and Duodenal Ulcer. A. G. Gibson.—p. 933.  
Bone Graft. M. Mamourian.—p. 934.  
General Anesthesia and Atmosphere in Operation Theater. J. R. Mackenzie and G. H. Colt.—p. 938.  
\*Decapsulation of Kidneys in Bright's Disease. T. H. Sanderson-Wells.—p. 940.  
Pasteurization of Milk Supply. S. G. Moore.—p. 941.  
Erythema Scarlatiniforme. M. O. Raven.—p. 942.  
Inguinal Hysterocelc. C. C. R. Downing.—p. 942.  
Case Quadruplet Pregnancy. H. Batson.—p. 943.

**Varicocele of Broad Ligament.**—Bunches of varicose veins in the broad ligaments Fothergill says are a familiar sight to all who are in the habit of exploring the pelvis. Varicose veins in the pelvis are often seen in connection with fibroids and other new growths, in cases of old pelvic infection and also in cases of marked retroversion. Like other varicose veins, those in the broad ligaments are made worse by pregnancy and by occupations that keep the patient standing



during long hours. Congestion and edema of the ovaries are constantly observed in these cases, and numerous small cysts are often seen after prolonged venous congestion, as well as overgrowth of fibrous tissue if the congestion is excessive. In some cases the internal secretion of the ovary would seem to be increased, at least for a time, for menorrhagia is a common symptom. But in other cases there is relative amenorrhea, which suggests sclerosis of the ovaries and atrophy of their essential tissue. The leading symptom is dull aching pain in the left side low down; it is often felt on both sides, and sometimes is confined to the right side. Young girls do not complain of this pain, but its onset is often preceded by a few years of congestive dysmenorrhea. The premenstrual and menstrual aching prolongs itself into the intermenstrual period, until the gnawing pain is practically continuous, except when the patient is lying down. The natural cure of the condition comes, in many cases, with the menopause, for there is then a marked reduction of the pelvic blood supply, often accompanied with the deposition of much fat, which may support the veins in some degree. If bimanual examination shows the pelvic organs to be normal in size, shape, consistency, and position, the leading symptom is sufficient to establish the diagnosis if there is no history of venereal or septic pelvic infection. The patient should be told to keep her bowels loose and to avoid standing, but to take plenty of active exercise—work or play. The most useful drugs are two old-fashioned mixtures—cascara, belladonna and strychnin; and quinin, iron and Epsom salt. Many patients find peace by taking a small saline aperient every morning. A change of employment often works like a charm.

**Streptothrix as Cause of Gastric and Duodenal Ulcer.**—A broth culture of a streptothrix of the species *actinomyces*, obtained from a case of acholuric jaundice, was injected intraperitoneally into a monkey. The animal preserved its condition and kept up its weight for seven months, after which it quickly failed, and was killed thirty-two weeks after the first injection. During the period of observation the animal was more apathetic than the controls, and for the last four months sat crouched in one corner of the cage. On palpation of the abdomen tenderness was first noticed six weeks after the first injection, and, except on one occasion, could always be elicited, more usually over the spleen, sometimes over the liver, and once or twice elsewhere. The spleen was felt throughout, but could never be said to be enlarged. At the necropsy it was found that an inflammation of the spleen with thrombophlebitis gave rise to infective emboli, evident in their effects in the stomach, producing ulcers and hemorrhage, in the liver and lungs producing hemorrhagic lesions; that in splenic anemia, and more rarely in acholuric jaundice, the gastric hemorrhage may be due in a proportion of cases to septic embolism and consequent inflammation of the branches of the vasa brevia.

**Decapsulation of Kidney.**—Wells maintains that this operation deserves consideration under two conditions: (1) as an emergency in eclampsia, uremia, suppression of urine, etc.; (2) in chronic cases, when medical treatment has failed after a thorough trial.

### Journal of Neurology and Psychopathology, Bristol

November, 1921, 2, No. 7

Relation of Psychoneuroses to Mental Deficiency. E. Prideaux.—p. 209.

\*Incidence of Sclerosis of Cornu Ammonis and Convulsions in General Paresis. A. E. Taft, Boston.—p. 221.

Expiation Process in Case of Schizophrenia. H. Devine.—p. 224.

Case of Insomnia Following Encephalitis Lethargica. M. Coburn.—p. 249.

Case of Premature Senility (Progeria). C. Farran-Ridge.—p. 254.

**Sclerosis of Cornu Ammonis in General Paresis.**—Of fifty cases of general paresis, examined histologically by Taft, a history of convulsions was given in nineteen. Of these nineteen, all but one showed extreme loss of large pyramidal cells of the cornu ammonis; particularly those within the corpus dentatum. In some instances the cell degeneration extended into the presubiculum. The cell loss was accompanied by proliferation of large glia cells. In the entire group of cases there was one contrasting case with loss of cells in the cornu ammonis without a history of convulsions. In this instance there was no disappearance of cells within

the corpus dentatum; only from a portion of the pre-subiculum. Thus, in the histologic material examined, there was found an almost exact parallel between the occurrence of convulsions and the presence of marked cell degeneration of the cornu ammonis in fifty cases of general paresis.

### Lancet, London

Dec. 3, 1921, 2, 5127

\*Study of Aphasia. S. A. K. Wilson.—p. 1143.

\*Eclampsia and Its Incidence. R. H. Paramore.—p. 1147.

\*Value and Comparisons of Renal Efficiency Tests. J. D. Comrie.—p. 1150.

"Twilight Sleep" and General Practitioner. C. H. S. Horwitz.—p. 1154.  
Domiciliary Treatment of Bone and Joint Tubercle. W. C. Rivers.—p. 1155.

\*Guelpa's Method in Treatment of Gout and Glycosuria by Fasting and Purging. H. Lunn.—p. 1157.

\*Case of Suppurative Monarticular Arthritis in Infant. A. Langwill.—p. 1158.

Case of Strangulated Obturator Hernia. A. E. Sawday.—p. 1159.

Case of Discharge from Umbilicus. F. Johnson.—p. 1159.

**Aphasia.**—Wilson is of the opinion that aphasia is part of a wider cerebral syndrome, namely, that of apraxia and agnosia. If aphasia is to be considered a disorder of symbolic thinking, it is important to grasp the fact that such disorder may reveal itself where no words, as such, come into the question at all. Yet unless some explanation such as that provided by the conception of apraxia and agnosia is offered, the limits of aphasia proper will be stretched unjustifiably. A patient who dresses himself wrongly or makes mistakes or "short-circuits" in performing any act, such as lighting his pipe, shows a disturbance which cannot by any legitimate means be regarded as aphasia; the disorder is certainly one of agnosia or of apraxia. By the utilization of these modern conceptions the way is paved for a more comprehensive insight into cerebral activities, both on the receptive and on the executive side.

**Nature of Eclampsia.**—Paramore's conception is that the maternal visceral lesions explain the toxemia in eclampsia. Such visceral lesions precede eclampsia. They cannot be merely terminal events in the disease. Sometimes there are no fits, and the case ends with coma; but coma cannot cause the visceral lesions. In the albuminuria, the presence of casts, vomiting, and manifestations of hepatic derangement we have evidence that a change in the kidneys and liver often occurs long before eclampsia supervenes. If the liver is not working sufficiently, a rise of amino-compounds (and allied bodies) in the blood must occur; and if simultaneously the kidneys are inactive, the percentage increase must become great. Such substances come largely from the intestine; and the importance of food, especially of protein food, in the rise of toxemia is well known, and in the treatment of these cases relative or complete starvation holds a high place. The toxemia which ends in eclampsia; Paramore says, is simply an aberration of normal metabolism, and eclampsia simply a uremia, distinguishable from other acute uremias only in the method of its production. The condition of the blood and urine in the preeclamptic state supports this view. Intra-abdominal pressure is intimately related with general metabolism, and its increase in pregnancy has been demonstrated. It is not surprising that if the intra-abdominal pressure is related to visceral metabolism, if its undue increase can cause metabolic aberrations, that such should show themselves more commonly in primigravidae, and especially in strongly muscular primigravidae. The proneness of such women to eclampsia is itself evidence that the toxemia is a physical, not a chemical disturbance.

**Value of Renal Efficiency Tests.**—The combination of the estimation of blood urea, of urea concentration in the urine, and of phenolsulphonephthalein excretion, Comrie says, gives reliable information as to the functional efficiency of the kidneys. The blood urea estimation should form a preliminary investigation. If it rises above 50 mg. per hundred c.c. of blood the condition is serious. If it is found to be persistently over 100 mg. recovery is not likely, and death will probably take place within a year. In uremia it may exceed 200 or 300 mg. before death. The blood urea may be normal while a marked degree of renal impairment exists; but in such cases the immediate prognosis is usually favorable. The



blood pressure shows no constant relation to the amount of blood urea; though when blood urea is permanently high the blood pressure is usually high. The phenolsulphonephthalein test, in Comrie's experience, is the most valuable individual test. An excretion, which takes place chiefly in the first hour and which in two hours reaches 70 per cent. or over, gives a good prognosis so far as the kidney function is concerned. An excretion of 50 per cent. for two hours in either renal or cardiac cases is compatible with complete restoration of health. An excretion of about 30 per cent. is compatible with prolonged life, though on a low plane of vitality. When the excretion does not rise above 20 per cent. in spite of treatment, death within a year may be expected. The urea concentration in the urine test is simple, harmless, and gives valuable information. The amount fluctuates more in individual cases than does the phenolsulphonephthalein excretion. A urica concentration over 3.5 per cent. indicates a satisfactory renal function; over 2 per cent. it is compatible with a fair degree of health; if it persists below 2 per cent., in spite of treatment, it is unsatisfactory.

**Guelpa's Treatment of Gout.**—Lunn is confident that the adoption of Guelpa's method of combining rather free purgation with fasting will prove of great benefit to patients suffering from diabetes, gout, colitis, and arthritis if the treatment be applied under medical care and direction. The importance of constant watching on the part of the medical attendant arises from the possibility of the development or increase of acidosis during the fast, as in my own case this year. In that event the fast should be discontinued when the acidosis is detected, and resumed after a few days. After a week of light diet the fasting can be resumed with a diminishing tendency to acidosis.

**Suppurative Monarticular Arthritis in Infant.**—Langwill's patient was aged 11 months. The left shoulder joint was distended with fluid; fluctuation well marked. On incising the joint capsule about an ounce of a thick yellow pus was allowed to escape. *B. paratyphosus* C was found in the pus.

### Medical Journal of Australia, Sydney

Nov. 5, 1921, 2, No. 19

Subacute Bacterial Endocarditis. D. M. McWhae.—p. 393.

Mr. Pepys. C. MacLaurin.—p. 395.

\*Simple Operative Method of Reducing Obstinate Malposition in Colles' Fracture and in Supracondylar Fractures of Humerus. C. E. Corlette.—p. 397.

Note on Finding of Anchylostoma Duodenale in Intestines of Pig. J. Legg and J. A. Rheuben.—p. 398.

Reminiscences of Plague. E. H. Binney.—p. 398.

\*Rare Type of Intracranial Tumor. T. H. R. Mathewson.—p. 400.

Imperforate Hymen. J. Allan.—p. 402.

**Reduction by Operation of Colles' Fracture.**—In the method described by Corlette an incision is made over the seat of fracture, and the tissues separated so that the distal fragment can be reached at the fracture line. A strong, sharp hook, or occasionally two hooks, are inserted, so that the points catch on the edge of the distal fragment, and traction is made in such a direction as to undo impaction and restore position. An assistant is required to manipulate the hand. Reduction having been achieved, the wound is closed and the patient is treated otherwise as in simple fracture. In supracondylar fractures of the humerus with backward displacement of the lower fragment and of the elbow, a very small wound was made with a tenotomy knife through the skin over each condyle, the wounds being only large enough to admit the hooks. Two strong, sharp hooks were inserted through the wounds and adjusted carefully so that the points engaged the proximal surface of the condylar fragment. An assistant counterextended at the shoulder and a second assistant slowly brought the forearm up into full flexion, while strong tension was exerted on the condylar fragment by the hooks on either side. The tractors were then removed and the limb put up in full flexion under the anesthetic.

**Intracranial Tumor.**—In Mathewson's case the brain was resting on a large, thin-walled cyst, which contained about 120 c.c. of straw-colored fluid. The wall of the cyst was continuous with the soft tissue of a new growth hanging down into the interpeduncular space and apparently replacing the infundibulum and tuber cinereum. The author does not state what the nature of the tumor was.

### Archives des Maladies du Cœur, etc., Paris

September, 1921, 14, No. 9

\*Mechanism of Musical Heart Murmurs. L. Bard.—p. 385.

Roentgenoscopy of Heart from Left Side. Laubry et al.—p. 394.

**Musical Heart Murmurs.**—Bard discusses the conditions responsible for and the mechanism of the murmurs which resemble the cheeping sounds made by small chickens, *bruits de pialement*.

### Bulletin de l'Académie de Médecine, Paris

Nov. 8, 1921, 86, No. 36

\*"Traumatic" Pleuropulmonary Tuberculosis. G. Brouardel and L. Giroux.—p. 238.

\*Colon Bacillus Septicemia. H. Méry.—p. 241.

\*Regeneration of Nerve Tissue. Nathan and Madier.—p. 243.

Prophylaxis of Mushroom Poisoning. L. Azoulay.—p. 246.

\*Epidemic Hiccup. Ducamp et al.—p. 249.

**Traumatic Pleuropulmonary Tuberculosis.**—Brouardel and Giroux are rather skeptical in regard to a traumatic origin of tuberculosis of lung or pleura, except when it has developed after a violent contusion of the chest which has roused to action some latent tuberculous focus which might never have been heard from otherwise. They urge supervision of persons known to have suffered from contusion of the chest, to learn what proportion develop pulmonary tuberculosis later.

**Colon Bacillus Septicemia.**—Méry comments on the prolonged course of the septicemia for which the colon bacillus is responsible, dragging along for months, with irregular waves of temperature suggesting malaria. The colon bacilli may pass into the urine, and the patient's serum may agglutinate isolated colon bacilli. An autogenous vaccine is often useful, as in a case described in which for five months there had been eleven or twelve day periods of fever followed by normal temperature for similar periods.

**Regeneration of Nerve Tissue.**—Nathan and Madier relate that a regenerating nerve is liable to send fibers into the interstices of a strip of loose connective tissue serving as a guide. The fibers from the two stumps may thus meet and the regeneration of the nerve be complete, even over a long gap. In one dog the experiment was a success, bridging a long gap, while in the second dog the end of the creeping nerve fiber had been turned back on itself by some obstacle.

**Epidemic Hiccup.**—The young woman died eighteen days after she developed intense hiccup with myoclonic movements of legs and abdominal muscles. Necropsy showed proliferation of neuroglia and degeneration of cells, mainly in the cervical spinal cord and vagospinal nucleus.

### Bulletin Médical, Paris

Nov. 19, 1921, 35, No. 47

\*The Gap in Auscultation. Molle.—p. 925.

**The Gap in Auscultation.**—Molle explains the mechanism of the silent interval in auscultating the systolic and diastolic pressures. Instead of the normal auscultation curve, there is a silent gap in or near the center in certain conditions. In five cases described it was unilateral and he is inclined to regard it as due to spasm of the artery.

### Encéphale, Paris

November, 1921, 16, No. 9

Pathogenesis of Amaurotic Idiocy. G. Marinesco.—p. 481.

Abortive Forms of So-Called Suprarenal Virilism. H. Claude.—p. 491.

Chorea. C. I. Urechia.—p. 496.

The Syndrome of Lilliputian Hallucinations. R. Leroy.—p. 504.

Genital Phobias and Psychoanalysis. A. Hesnard.—p. 510.

Chronic Mania. J. Hamel and P. Vernet.—p. 515. Cont'd.

Edema from Undernourishment. M. A. Prinée.—p. 526.

### Journal de Médecine de Bordeaux

Nov. 10, 1921, 92, No. 16

\*Physical Training. A. Hesnard.—p. 465. Idem. Id.—p. 469.

Physical and Physiologic Education. Pierre-Nadal.—p. 473.

Psychologic Study of the Horse. G. Rouhet.—p. 475.

Nov. 25, 1921, 92, No. 17

Introduction to Study of Phthysiology. E. Leuret.—p. 501.

The Hemorrhagic Syndromes in Course of Typhoid. Tamalet.—p. 511.

Motor and Mental Sequelae of Epidemic Encephalitis. L. Massé and G. Le Bourgo.—p. 513.



**Physical Training in France.**—Hesnard gives an illustrated description of the methods of physical training in vogue at the Joinville school, the national center of physical instruction. He also describes the Lorient similar school for the navy. Nadal discusses the training for teachers in this line.

### Journal de Radiologie et d'Electrologie, Paris

October, 1921, 5, No. 10

\*Radiology at Recent Congress. J. Belot.—p. 433. Cont'd.

\*Radiologic Treatment of Uterine Fibromas. A. Bécélère.—p. 449.

**Radiology at Congress.**—This is the first instalment of the addresses on roentgenology delivered at the annual meeting of the French Association for the Advancement of Science.

**Roentgen-Ray Treatment of Uterine Fibromas.**—Reviewed in these columns, Nov. 19, 1921, p. 1687, when published elsewhere.

### Nourrisson, Paris

November, 1921, 9, No. 6

\*Pyloric Stenosis in Infants. Péhu and X. Pinel.—p. 337.

\*Reducing Substance in Infants' Stools. A. B. Marfan and H. Dorlencourt.—p. 382.

Visiting Nurses in Child Welfare Work. P. Chatin.—p. 390.

**Pyloric Disease in Infants.**—Péhu and Pinel recall that pyloric stenosis in infants is a well defined clinical entity with a settled course. It is curable by operative measures, but it may terminate in a spontaneous cure, complete and definitive. Some ascribe the *maladie pylorique* to hypertrophy of the pylorus; others to a congenital malformation; others to hyperplasia of inflammatory nature; others to spasm alone. They give a long list of clinicians who have advocated medical measures only, but the Fredet-Rammstedt operation is simple, rapid, effectual, and harmless, and has thrown light on the pathogenesis of the condition. Nearly seven pages of bibliography, the titles set solid, are appended.

**Reductase in Infants' Stools.**—Marfan and Dorlencourt found the reducing substance most abundant the more alkaline the stools. There is much to sustain the assumption that the reductase is produced in the main by proteolytic micro-organisms. It does not seem to exert a reducing action on bilirubin, and hence it is not responsible for putty colored stools; insufficiency of the liver must be incriminated for this.

### Paris Médical

Nov. 12, 1921, 11, No. 46

The Serologic Tests for Syphilis. Rubinstein.—p. 377.

\*Treatment of Shock Phenomena. W. Kopaczewski.—p. 379.

The Hemorrhagic Incidents of Normal Childbirths in Primiparas. Barbillion.—p. 384.

\*Arsphenamin Myopia. G. Milian and Périn.—p. 388.

Nov. 19, 1921, 11, No. 47

Surgery for Children and Orthopedics in 1921. A. Mouchet and C. Roederer.—p. 393.

Tuberculosis of First Metatarsal Bone in Children. Sorrel and Bouquier.—p. 399.

**Phenomena of Shock by Contact.**—Kopaczewski comments on the light thrown on many pathologic conditions by the conception of shock as a physical phenomenon. There is (1) the cell shock, or anaphylaxis; (2) the humoral shock, from sudden flocculation in the blood or lysis of the formed elements; (3) the thromboplastic shock, the solid elements in the blood acting like a glass wall to form centers for coagulation, intravascular thromboplastic phenomena. The shock reaction in all its forms is colloidal and the modification of the colloidal balance which constitutes the sudden reaction in all these types is responsible for the clinical and histologic manifestations. Treatment should vary for each type: It should aim to prevent or arrest flocculation in the cellular type, which includes serum sickness, asthma, the reaction to tuberculin, etc. In the humoral type—which includes arsphenamin shock, shock from peptone, from anti-serums, etc.—treatment should aim to be antilytic. In the thromboplastic type—which includes the shock from suspensions of micro-organisms and collobiases—treatment should aim to impede coagulation. He adds that there are plenty of old and tried measures in our arsenal to fight flocculation, lysis and coagulation.

**Transient Myopia During Arsphenamin Treatment.**—The woman of 27 developed nitritoid crises at the third series of

neo-arsphenamin injections. Each injection induced a typical nitritoid crisis, accompanied for a day or two by intense albuminuria and transient myopia: 3 D for one eye and 3½ for the other. Vision was clear provided the fine print was held at the proper distance. Syphilis may affect the eyes in this way but generally only one eye. Epidemic encephalitis is also capable of producing it, but with this there are pupil changes as well.

### Presse Médicale, Paris

Nov. 12, 1921, 29, No. 91

\*Action of Organ Extracts on Blood Pressure. H. Roger.—p. 901.

Arsphenamin Eruptions and Course of Syphilis. Benveniste.—p. 904.

**Action of Organ Extracts on the Blood Pressure.**—Among the results of Roger's research in this line is the discovery that an autolysate of kidney tissue contains a substance which seems to act on the pneumogastric as epinephrin acts on the sympathetic. Under the kidney extract the blood pressure drops, and the systoles become very slow and strong. He describes the technic used and the action of the extract on rabbits. The blood pressure curve after its injection resembled that with electric stimulation of the pneumogastric. The drop in pressure is as pronounced as with the latter, but it is definitive; there is no recuperation. With electric excitation, in normal animals, the diastole may be very protracted but the heart always recovers and goes on beating. The animals under the influence of the kidney extract were liable to develop fatal syncope, the heart action stopping abruptly in diastole, the respiration keeping up a little longer. He calls attention to this as possibly explaining sudden death in kidney disease, some kidney substance or product acting on the vagus, causing the fatal outcome. His experiments showed further that atropin was able to suppress this hypotensive action of the kidney extract, just as it suppresses the effect of faradic stimulation of the pneumogastric nerve.

### Revue de Médecine, Paris

April, 1921, 38, No. 4

\*Meningeal Manifestations of Typhoid Origin. E. Cottin and C. Saloz.—p. 191.

\*Differential Diagnosis of True Duodenal Ulcer, Without Complications. G. Parturier.—p. 214. Conc'n in No. 6, p. 340.

**Meningeal Manifestations of Typhoid Origin.**—Cottin and Saloz describe four types of meningeal involvement in typhoid: the cases in which the cerebrospinal fluid is clear and sterile; those with typhoid bacilli in the fluid; those with associated infection with the typhoid bacteria, the fluid purulent, and those in which the typhoid meningitis is primary and isolated, the only manifestation of the disease. They report a case of this latter type, the previously healthy woman of 35 being taken suddenly with agonizing headache, vomiting and syncope. Acute delirium followed, with fever of 104 F. and pulse of 100. Lumbar puncture gave relief and revealed the typhoid bacilli in the fluid. The blood was constantly sterile and did not give the agglutination reaction, but this was pronounced with the spinal fluid even late into convalescence. Recovery was complete in about seven weeks; there were no symptoms at any time from the intestines and no septicemia. The meningeal manifestations with typhoid usually precede the classic clinical picture of the disease, or follow it, or they may accompany typhoid septicemia without involvement of the bowel. They cite instances from the literature of each of these forms. The extra-intestinal lesions in typhoid generally locate at points damaged by old infection or other cause, in a goiter, in a gallbladder with calculi, in a malarial spleen, and in experimental lesions. In the case of isolated typhoid meningitis they report, the woman had had a needle break off in the spinal canal during an attempt at spinal anesthesia three years before.

**Differential Diagnosis of True Duodenal Ulcer.**—A similar article by Parturier, shorter than this comprehensive monograph, was summarized Dec. 17, 1921, p. 2005. He cites among other instances of unrecognized duodenal ulcer remote from the pylorus, a case in which the clinical picture was mistaken for Pott's disease, and the patient kept in a plaster cast for two years. In other cases an operation for gallstones was planned, or the disturbances were ascribed to angina pectoris. The clinical picture of ulcer in the second portion of the



duodenum differs from that near the pylorus, and he compares the symptoms in his twenty cases of the kind with those of other pathologic conditions which might lead to confusion, such as lead poisoning, kidney colic, nephroptosis, tabes, neuralgia, aortitis, and gastro-intestinal uremia, as well as gastric ulcer, appendicitis, pancreatitis, etc. He recapitulates in conclusion that the intervals of good health are the most characteristic feature of true duodenal ulcer. Other features are the good appetite, the nocturnal pain originating and spreading in the right hypochondrium, not accompanied by vomiting and not impairing much the general health; the pain sometimes, but not always, is relieved by eating; contracture of the right rectus muscle; blood in the stool, sometimes visible but usually revealed only by the chemical reactions of hematin; roentgenoscopy showing rapid evacuation of the stomach; a tender point in the duodenum—the latter may be normal in outline or show an indentation or residual spot—pronounced hyperchlorhydria; the tender point in the neck; the one in the duodenum; the relief of pain with a deep inspiration, and the lack of relief from antipyrin and laudanum under which pain from the gallbladder and celiacgia subside. The prognosis is graver the lower the location of the ulcer. Even after the most careful investigation and weighing of all the differential points, the exploratory laparotomy may reveal merely a patch of peritonitis below the liver, which requires only a gastro-enterostomy to relieve the patient permanently from the gastroduodenal symptoms and the dread of finding cancer.

May, 1921, 38, No. 5

Sodium Methylarsinates in Therapeutics. H. Maréchal.—p. 255.

\*Magic or Therapeutic Properties of Human Blood. J. Roshem.—p. 295

June, 1921, 38, No. 6

Origin and Pathogenesis of Vascular Hypertension. C. Trunczek.—p. 319. Cont'd.

Itching of Nose as Early Symptom of Meningitis. G. R. Lafora.—p. 366.

**Human Blood in Magic and in Therapeutics.**—Roshem has compiled a long record of historical references to the use of blood in treatment of various diseases, especially epilepsy, and in magic. He quotes, among others, Pliny's description of the mother bargaining with the gladiator to let her epileptic son suck the blood flowing from his wounds, and adds that if the seizures had been neuropathic instead of actual epilepsy, the circumstances might well have produced such an impression as to restore the patient's balance.

### Revue Médicale de la Suisse Romande, Geneva

May, 1921, 41, No. 5

Prophylaxis of Venereal Diseases. J. Wintsch.—p. 265.

Horizontal Inferior Luxation of Patella. W. Rochedieu.—p. 305.

No Improvement Under Vaccine Therapy of Tuberculosis; Five Cases. Piguet.—p. 308.

June, 1921, 41, No. 6

Retroperitoneal Pseudomyxoma. M. Askanazy.—p. 329.

Reinfection with Syphilis. R. Steinmetz.—p. 335.

\*The Venous Blood Pressure. P. Roethlisberger.—p. 348.

\*Blocking the Splanchnic Nerves. C. Perrier.—p. 355.

\*Sudden Death in Heart Disease. G. Turrettini.—p. 362.

Tuberculous Sclerosis of the Kidney. R. Raymond.—p. 372.

**Measurement of Venous Blood Pressure.**—Roethlisberger records the residual pressure of the blood after it has passed through the capillaries. The subject sits with his back to the light, his elbow flexed at a right angle on a pile of books or other support, which brings the back of the hand on a level with the brow. The metacarpus is held vertical, the fingers flexed, and a prominent vein in the hand is watched as the manometer cuff is inflated. He has not studied this method enough to interpret the findings, but he comments on the remarkable drop in the venous pressure with advancing age, as determined by this method. The figures were respectively, 14, 10 and 6 mm. mercury in three subjects, 20, 45 and 75 years old.

**Blocking the Splanchnic Nerves.**—Perrier applied Kappis' technic for regional anesthesia in eighteen cases, as he describes. The results encourage further use of the method although it partially failed in two cases of ileus. Others have reported failure in ileus, and Perrier is inclined to attribute this to the weight of the heavy loops of bowel. There was no modification of pulse or respiration during traction on organs, probably from the interruption of the reflex arc.

There was no shock, no vomiting, but the analgesia was rarely complete, and there were some more or less disagreeable sensations, but not enough to require ether except in the two ileus cases mentioned.

**Sudden Death in Heart Disease.**—Turrettini compares the literature on the prognosis with auricular fibrillation with a case of chronically recurring paroxysmal tachycardia in which the woman of 54 died suddenly. Necropsy revealed merely extremely slight lesions in the nodule of Keith and Wenckebach's bundle. She had entered the hospital on account of recent mild pains and slight edema in one leg, with moderate dyspnea. The heart rate was 198, the pulse 100 to 120, the pressure low, and the ventricle rhythm so irregular that it was impossible to find any superposable segments in the cardiogram.

### Policlinico, Rome

July 11, 1921, 28, No. 28

Latent Amebiasis Simulating Malaria or Typhoid. G. Izar.—p. 939.

Injections of Calomel in Typhoid. G. Galatà.—p. 942.

Present Status of Gastro-Intestinal Arteriosclerosis. F. Curatolo.—p. 946.

### Riforma Medica, Naples

Sept. 10, 1921, 37, No. 37

\*Perineal Prostatectomy. M. Pavone.—p. 866.

Four Cases of Paratyphoid. V. Ronchetti.—p. 871.

\*The "Doll" Eye Sign. O. Cantelli.—p. 874.

Flushing the Small Pelvis in Treatment of Peritonitis. E. Aievoli.—p. 878.

**Parlavecchio's Perineal Prostatectomy.**—Pavone compares the various technics in vogue for prostatectomy, and gives an illustration of Parlavecchio's method which allows healing by primary intention, and the patient is up and about in eight or ten days. Even if a perineal fistula is left, this soon heals. His light prostatic tractor has three small blades, and has the advantage over others, he says, that it can be introduced through the natural route, without injuring the lining of the urethra. He prefers spinal anesthesia and a broad curve for the incision, and enlarges the two incisions in the posterior surface of the organ with the fingers. The prostate is pushed down conveniently into the field of operation by the tractor in the urethra, and the enucleation is completed with ordinary forceps or scissors. A retention catheter is not required for more than a day or two. In the four cases in which this technic has been applied, healing was by primary intention and the retention catheter was removed the third day. In the latest case, the patient pulled out the catheter the first night, and micturition proceeded naturally thereafter, the perineal wound healing by primary intention. In the third case, the urethral mucosa was injured and required suturing, so that the catheter had to be retained for a week. It became obstructed finally and the urine found its way through the perineal wound, but this fistula soon healed.

**The "Doll" Eye Sign.**—Cantelli calls attention to a dissociation between the movement of the head as it is bent forward and the lowering of the eyes. Also between the raising of the eyes and the movement of extension of the head. These various phenomena occur associated in the normal, and the lack of conjugated movements was noted as a sequela of epidemic encephalitis. He calls it the *fenomeno degli occhi di bambola* as the movement of the eyes recalls that of a doll with movable eyes.

### Gaceta Médica de Caracas, Venezuela

June 15, 1921, 28, No. 11

\*Relapsing Fever in Venezuela. R. Pino-Pou.—p. 139. Conc'n. Idem. J. Iturbe.—p. 150.

**Relapsing Fever in Venezuela.**—Pino-Pou discovered in 1918 the first case of relapsing fever to be recognized in Venezuela. Bello, Sanchez and Tejera have encountered cases since, and Pino-Pou now has a record of twenty-three cases, and gives a detailed study of them and of recurring fever in general. He quotes Darling's conclusions in regard to relapsing fever in Panama, and Franco's in Colombia. The disease in Venezuela has certain special characteristics. As a rule there are three relapses, but there may be only one or more than three. The differential diagnosis is almost impossible



without microscopic examination as the clinical picture may deceptively resemble that with malaria, influenza, typhoid or, in children, acute gastro-enteritis or meningitis. He gives a photomicrogram from one of his cases showing both the malaria parasite and the spirochete of relapsing fever in the blood at the same time. The spirochete seems to be identical with that observed in Panama and Colombia. House rats are susceptible to the disease, contracting it directly from man or from other rats, but monkeys, guinea-pigs, rabbits, dogs and domestic fowls proved refractory to inoculations. The spirochetes are scanty in the peripheral blood; sometimes 200 or 300 microscopic fields had to be examined before discovering one specimen. The intermediate host in Venezuela was found to be the biting tick, *ornithodoros*, but whether the *talaje*, the *turicata* or the *fourcosus* variety is not quite settled; each of the different investigators inclines to accept a different variety. He adds that probably *Cimex rotundatus* and *Cimex lectularius* play a part in the transmission of the disease. He succeeded in infecting rats by means of the latter. Pino-Pou's monograph is profusely illustrated; one of the cuts shows eight spirochetes agglutinated to form an eight-pointed star; this was discovered in the blood of one rat. In *Mus decumanus* the spirochetes were found in the blood the fifth day in one animal, and they had disappeared from the blood by the next day. The relapse occurred the seventh day. The disease to date has been found only in the western portion of Venezuela. One rat was found spontaneously affected.

### Repertorio de Medicina y Cirugía, Bogotá

July, 1921, 12, No. 10

- \*Reform in Medical Curriculum. Committee Report.—p. 518.
- \*Influence of Chicha on Nitrogen Metabolism. C. Torres Umaña.—p. 528.
- Homeopathy. C. Aguirre Plata.—p. 538.
- False Chilblains. P. J. Amaya.—p. 545.
- \*Puerperal Septicemia and Its Treatment. L. E. Moncada R.—p. 547.

September, 1921, 12, No. 12

- Case of Gonococcus Arthritis. J. Bejarano.—p. 636.
- Magnesium Sulphate in Treatment of Constipation. Idem.—p. 641.
- Child Welfare Exposition at Paris. E. S. de Santamaria Montoya.—p. 642.
- Clinical Study of Yaws. B. Velasco C.—p. 647.
- Tuberculosis. C. Aguirre Plata.—p. 675.

**Reform of the Medical Curriculum.**—This is the report of a committee of the professors who have been meeting weekly for several months.

**The National Beverage of Colombia and Protein Metabolism.**—Chicha is made from corn, but the fermentation is continued to actual putrefaction, with production of a ptomain. Torres Umaña experimented with it on six healthy subjects, the metabolic findings emphasizing the inhibiting action of the chicha on the nutritive processes. He urges the government to prohibit this method of fermentation.

**Puerperal Septicemia.**—Moncada's experience has been that other bacteria besides streptococci were usually involved in puerperal septicemia, and hence antistreptococcus serum cannot be relied on implicitly. He describes five exceptionally severe cases with recovery under systematic intra-uterine treatment with neutral solution of chlorinated soda, or other disinfectant, supplemented by subcutaneous injection of a mixture of 2 gm. each of oil of turpentine and 92 per cent. alcohol in 200 gm. of physiologic saline. All the symptoms were aggravated for a few hours after the injection of turpentine, but then permanent improvement followed—an actual resurrection in some cases.

### Deutsches Archiv für klinische Medizin, Leipzig

Oct. 21, 1921, 137, No. 5-6

- \*Bence-Jones Albuminuria. E. Krauss.—p. 257.
- \*Infusion of Sugar in Heart Disease. P. Travers.—p. 284.
- \*Tests of Motor Function of Stomach. F. Demuth.—p. 292.
- \*Epinephrin Hyperglycemia. Brösamlen.—p. 299.
- \*The Salt and Water Metabolism with Diseased Kidneys. R. Siebeck.—p. 311.
- \*Catalase Index in Diagnosis of Pernicious Anemia. R. Neumann.—p. 324.
- \*Sources of Error in Measuring Blood Pressure. H. Hartz.—p. 337.
- \*Bactericidal Function of Small Intestine. Ganter and van der Reis.—p. 348.
- The Metabolism as Edema is Subsiding. H. v. Hoesslin.—p. 359.

**Bence-Jones Albuminuria.**—Krauss succeeded in obtaining 15 gm. of crystallized Bence-Jones albumin from the urine of a myeloma patient. Crystals were obtained, he adds, only in five others of the more than 200 cases of Bence-Jones albuminuria on record. In his case the albuminuria seemed to be dependent on the nitrogen metabolism. Parenteral injection of the Bence-Jones albumin in other persons and in rabbits displayed a toxic action like that of any foreign protein. Repeated injections in the rabbit induced in time a nephrosis similar to the kidney disturbances evident in the patient from whose urine the prisms and fine needle crystals of the Bence-Jones albumin had been derived.

**The Blood Sugar in Heart Disease.**—Travers found no evidence of hypoglycemia in 102 patients with weakness of the heart from any cause. Although the sugar content of the blood was not below normal, intravenous infusion of a 10 or 20 per cent. solution of grape sugar had an unmistakably favorable effect, not only in cases of weak heart action but in other conditions of debility and after hemorrhage or much loss of fluid. But Büdingen's theory of hypoglycemia on which this treatment is based is disproved by Travers' research. A psychic influence from the sugar, as "food for the heart," may aid in the beneficial result.

**Motor Functioning of the Stomach with Different Foods.**—Demuth found that after meals consisting mainly of carbohydrates, the stomach emptied itself sooner than with protein foods. Meals with much fat lingered longer in the stomach than other foods, with the exception of sauerkraut which was voided most slowly. With gastric cancer, protein meals lingered longer than fat in the stomach. His tests were made with 300 gm. of the food being tested. The thirty-two subjects included four healthy persons.

**Epinephrin Hyperglycemia.**—Brösamlen found that considerable hyperglycemia followed regularly subcutaneous injection of epinephrin in healthy persons. It reached its highest point in an hour. Glycosuria was observed only in four of thirty-five tests and these four positive findings were in cases of exophthalmic goiter, obesity, advanced tuberculosis or leukemia. The epinephrin hyperglycemia in diabetics varied considerably.

**The Salt and Water Metabolism with Kidney Diseases.**—Siebeck concludes from his research that a single test of kidney functioning is of dubious significance. It is far more instructive to study the behavior of the kidneys during a prolonged change of salt and water intake. After a period of uniform, salt-poor diet, 5, 10 or 20 gm. of salt are added to the diet and the elimination of the salt, the total output of urine, and the increase in weight are recorded. Abrupt reduction of the intake of salt and of water often has a remarkable influence on the water and salt metabolism, and even after a more liberal diet is allowed, occasional days of restriction may prove very useful. The details are tabulated from seven cases treated on these principles.

**The Catalase Content of the Blood in Diagnosis of Pernicious Anemia.**—Neumann found the catalase content three or four times above normal in the two severer cases among ten of pernicious anemia. In the eight others it was within normal range.

**Sources of Error in Estimation of the Blood Pressure.**—Hartz explains that the elasticity of the wall of the segment of the artery between the cuff and the point where the systolic pressure is palpated varies in different persons, and that this is a source of error. The more relaxed the artery walls, the greater the error, as the palpated pressure is less.

**The Bactericidal Function of the Small Intestine.**—Ganter and van der Reis used for their research a metal cartridge which aspirated bowel content when the cartridge was opened, after it had been swallowed, by the influence of a magnet applied outside. Another form was arranged to expel its contents when opened by the magnet. The tests with the prodigious apparently demonstrated a pronounced bactericidal action in the small intestine in health. The small intestine contains an obligate flora, so the bactericidal action by its secretion is not an autosterilization but an autodisinfection.



**Deutsche medizinische Wochenschrift, Berlin**

Oct. 20, 1921, 47, No. 42

- Cutaneous Disease Due to Staphylococcus Albus and Aureus. P. G. Unna.—p. 1251.  
 Etiology of Accidental Diastolic Heart Murmurs. A. Lublin.—p. 1254.  
 Test Hemoclastic Crisis in Infants. E. Schiff and E. Stransky.—p. 1255.  
 The Diagnostic and Therapeutic Significance of the Endocrine Glands for the Pathology of the Stomach. F. Boenheim.—p. 1256.  
 Simplified Colorimetric Determination of Hydrochloric Acid in the Stomach. L. v. Friedrich.—p. 1258.  
 Significance of Scattering Rays in Deep Roentgenotherapy. F. Vicheller.—p. 1259.  
 Transfusion of Small Quantities of Citrated Blood. W. Weck.—p. 1260.  
 Diphtheria of the Umbilicus. K. Foth.—p. 1261.  
 Milk Dilutions in Infant Feeding. K. Ochsenius.—p. 1262.  
 Promotion of Asepsis in Midwifery. H. Kritzler.—p. 1263. Begun in No. 15.  
 Dry Yeast in Prophylaxis of Tonsillitis. H. Feriz.—p. 1264.  
 Safe and Quick Acetic Ether Method of Getting Rid of Head Lice. W. Schnell.—p. 1264.  
 Present-Day Knowledge of the Physiology of Sex Determination. T. Peterfi.—p. 1265.  
 Surgical Hints for the Practitioner; Furuncles and Phlegmons. G. Ledderhose.—p. 1267.

**Medizinische Klinik, Berlin**

Oct. 16, 1921, 17, No. 42

- Rudolf Virchow Centennial. O. Lubarsch.—p. 1253.  
 Virchow's Influence on Practical Medicine. H. Quincke.—p. 1254.  
 Renal Tuberculosis. E. W. Baum.—p. 1256.  
 Percussion of Aorta Under Roentgen Control. Jagic and Kreuzfuchs.—p. 1258.  
 Influence of One Disease on Another. J. Löwy.—p. 1259. Conc'n.  
 Index of State of Nourishment. E. Gerber.—p. 1261.  
 \*Acute Barbitol Poisoning. F. Boenheim.—p. 1263.  
 Cure of Pannus Under Jequirity. S. Klein.—p. 1265.  
 \*Chemotherapy of Tuberculosis. Helwig.—p. 1266.  
 \*Inactivation in Wassermann Test. H. Eicke.—p. 1269.  
 Ear Disease from Practitioner's Standpoint. Grahe.—p. 1270. Cont'n.

**Acute Barbitol Poisoning.**—Boenheim relates that among the 286 cases of acute poisoning in Sick's service at Stuttgart in thirteen recent years, acute barbitol (veronal) poisoning formed 5.7 per cent. of the whole. The drug had been taken with suicidal intent, and five died. These had all taken over 10 gm.; up to this amount the prognosis is not grave, although no specific antidote is known. Even with large doses of the drug, complete restitution may occur. Rosenberger, by promptly rinsing out the stomach, saved a patient who had taken 30 gm. of phenobarbital. The main symptom with barbitol poisoning is the drowsiness to the deepest coma. Other features are the instability of the temperature, and the tendency to pneumonia. The latter almost inevitably proves fatal. There is no vomiting; the digestive tract does not seem to suffer. The main point of attack is the peripheral circulation. The drug seems to paralyze the walls of the capillaries so that vasomotor disturbances are constant. This may entail secondarily pulmonary edema. The suspicion of morphin poisoning is discredited by the good respiration and pulse, and the fact that the pupils react well to light. The play of the pupils, dilating and contracting at brief intervals, is characteristic. The absence of the abdominal reflexes, with retention or exaggeration of the tendon reflexes, is also instructive. Likewise the rapid shifting of the phenomena. The barbitol can be detected in the urine. Caffein injections may be required. The danger is past after two days, provided pneumonia or pulmonary edema does not develop.

**Chemotherapy of Tuberculosis.**—Helwig discusses silicic acid, calcium and sugar in this connection. He thinks they are logically called for, and reports favorable impressions from their systematic use in pulmonary tuberculosis.

**Technic for Wassermann Test of the Spinal Fluid.**—Eicke explains that different elements in the syphilitic spinal fluid are affected by heat differently. By graduating the heat applied, we get different results at different temperature levels.

**Münchener medizinische Wochenschrift, Munich**

Sept. 9, 1921, 68, No. 36

- Observations on Epidemic Encephalitis. Kayser-Petersen.—p. 1137.  
 The Biologic and Clinical Significance of Lymphocytes for Syphilis and the Wassermann Reaction. S. Bergel.—p. 1138.  
 Peculiar Shortening of Metatarsal and Metacarpal Bones. J. G. Chrysospathes.—p. 1140.  
 Atrophy of the Bone (Sudeck) Following Burns. J. Dubs.—p. 1141.  
 Theory and Practice of Phototherapy. H. Picard.—p. 1142.

- \*Pneumonoconiosis and Asthma in Saw Mill Workmen. K. Gade.—p. 1144.  
 Surgical Diphtheria as Source of Diphtheria Epidemics. H. Spieth.—p. 1146.  
 \*Percussion of the Suspended Thorax. C. Noeggerath.—p. 1147.  
 A Simple Aspiration Procedure with Drainage of the Pleural Cavity. J. Clemens.—p. 1147.  
 Gastro-Enterostomy or Resection in Gastric Ulcer? Kaufmann.—p. 1148.  
 Treatment of Furunculosis and Related Staphylococcal Suppurations with Polyvalent Staphylococcus Vaccines. R. Spaar.—p. 1149.  
 Total Reconstruction of External Ear. J. F. S. Esser.—p. 1150.  
 Diathermy in Gynecologic Inflammations. L. Tutscheck.—p. 1151.  
 Hemorrhagic Bladder Disorder in Chronic Relapsing Polyarthritides, Simulating a Bladder Tumor. H. Boeminghaus.—p. 1152.  
 Herpes Zoster in General Paresis. Kaiser.—p. 1153.  
 A Case Bearing on the Hypophyseal Theory in Regard to Diabetes Mellitus. R. Bleibtreu.—p. 1153.  
 Tearing of the Intestine Resulting from Patient's Attempt to Reduce a Femoral Hernia. R. Gutzeit.—p. 1154.  
 Bronchial Asthma and Tuberculosis of the Bronchial Glands in Children. E. Rüscher.—p. 1155.  
 Treatment of Empyema Fistulas with Pepsin Solution. Jenckel.—p. 1156.  
 A Maneuver to Facilitate a Gynecologic Examination in Severe Abdominal Distention. R. Hirsch.—p. 1157.  
 Sex Incidence in Exophthalmic Goiter; Its Causes. Weinberg.—p. 1157.  
 Estimation of Valvular Lesions. D. Gerhardt.—p. 1161.

**Pneumonoconiosis and Asthma in Saw Mill Workmen.**—Gade states that while pneumonoconiosis resulting from the inspiration of coal, metal, and mineral dust, and of vegetable material, in the form of flour and tobacco dust, has received widespread consideration in the literature, little has been said about analogous diseases resulting from breathing in the dust of wood fiber in saw mills, planing mills and similar industries. Under the microscope, the wood particles in the air are found to have many sharp edges and points. Under habitual inhalation of wood-fiber particles they set up a catarrhal affection of the respiratory passages, with many disagreeable symptoms and possibly disastrous results. Some wood fibers contain alkaloids and ethereal oils, which seem to produce an additional toxic effect. He therefore urges that greater attention be paid to the installation of mechanical devices to dispose of the dust, spraying, wearing of dust masks, ventilation, etc.

**Percussion of the Suspended Thorax.**—Noeggerath states that all physicians who, by means of roentgenography, have taken the trouble to check up on their percussion and auscultation findings will have frequently observed that paravertebral areas of relative dullness have no corresponding pulmonary and hilum changes in the roentgenogram. Also necropsies show up even more clearly the discrepancies between percussion findings and the actual anatomic conditions. In order to discover such discrepancies in time, he recommends percussion on the suspended thorax. An assistant takes a position facing the child and the physician. Then, with a hand flat against either side of the patient's head, he lifts him just off the floor. In this position the examiner will often discover on percussion that previous signs of scoliosis and dullness have completely disappeared. The finer mechanism of the process is not so plain, but it is probably due to changes in the vibratory capacity of the thorax and its contents. This procedure has been so useful to himself and his assistants during the last two years that he wishes it to become more generally known.

**Therapeutische Halbmonatshefte, Berlin**

July 15, 1921, 35, No. 14

- Transfusion of Blood of Relatives. M. Bürger.—p. 425. Conc'n No. 15, p. 457.  
 Treatment of Frost-Bite. H. Flörcken.—p. 430.  
 Salicylic Acid Poisoning from Cutaneous Application. O. Kiess.—p. 433.  
 Trials of Krause's Powdered Milk. C. v. Noorden.—p. 440.

**Wiener klinische Wochenschrift, Vienna**

Oct. 6, 1921, 34, No. 40

- A Case of Illuminating-Gas Poisoning with Profuse Hemorrhage into the Heart Musculature. G. Strassmann.—p. 483.  
 Relations Between Duodenal Ulcer, Appendicitis and Cholelithiasis. E. Schütz.—p. 484.  
 Experimental Investigations on a Child with Congenital Myxedema. G. Cori.—p. 485.  
 Cholelithiasis. L. v. Aldor.—p. 486.  
 Medicine in Relation to Theology. L. G. Dittel.—p. 487.  
 Roentgenographic Diagnosis of Tumors, Bones and Joints. R. Kienböck.—p. 488. Conc'n.



## Zeitschrift für Kinderheilkunde, Berlin

July 12, 1921, 29, No. 5-6

- \*Nutrition Index and "Undernourishment." M. Pfaundler.—p. 217.  
Progressive Spinal Muscular Atrophy in Infant. J. Duken and A. Weingartner.—p. 245.  
Causes of Acidity of Infants' Stools. K. Scheer.—p. 253.  
Congenital Valve Stenosis of Jejunum. H. Eitel.—p. 263.  
\*Sequelae of Epidemic Encephalitis in Children. II. F. Hofstadt.—p. 272.  
\*Research on Bacillus Bifidus. A. Adam.—p. 306.  
\*Length of Sojourn of Feces in Infants' Intestines. W. Kahn.—p. 321.  
Fat and Cholesterol Metabolism in Infants. L. Wacker and K. F. Beck.—p. 331.  
\*Course of Intravenous Injections of Sugar in Infants. H. Beumer.—p. 352.  
Etiologic Connection Between Varicella and Herpes Zoster. O. Jacobi.—p. 368.

**Nutrition Standards.**—Pfaundler discusses the various standards for estimating normal conditions of nourishment, saying that the best that can be expected from the standards in vogue is the *Körperfülle im geometrischen Sinn*. If the body is not properly filled out, this does not necessarily imply that the food has not been adequate before. This group includes many children—some of them healthy—who do not owe this condition—their lack of being properly filled out—to lack of food. No amount of food added to their diets will insure that their bodies will be properly filled out. In short, he concludes, his careful sifting of all the accepted standards for application on a large scale to detect the undernourished shows that not one is practicable. For solution of the problem, which is much more difficult than it seems, he suggests a system of functional tests, namely, the determination of the reaction to a test diet. The appetite of the children for the different meals, the variations in weight, etc., should be regarded, and the appetite for different articles of food. In the Quaker food relief, it was found that certain of the supposedly undernourished children did not go in to the eating room on days they knew certain dishes were served, while all were on hand on the "chocolate days." Those serving the food found it necessary to rearrange their schedule so that the children would not know what dishes to expect on the different days of the week. Pfaundler thinks that this catering to the children's appetite was a mistake. The children's appetite and lack of relish for certain dishes might be utilized as one of the elements in estimating their condition of malnutrition and need of food.

**Sequelae of Epidemic Encephalitis in Children.**—Hofstadt regards the derangement of the sleep rhythm as so characteristic of epidemic encephalitis that this alone justifies the present or retrospective diagnosis of the disease. The amyotonic syndrome, chronic chorea or athetosis and psychic disturbances are common, and also he has noted the development of an adipose-genital syndrome resembling dystrophia adiposogenitalis, and in some cases combined with hypergenitalism.

**Research on Intestinal Bacteria.**—In this third communication on this subject, Adam discusses the influence of the concentration of hydrogen ions in the medium on the development of *Bacillus bifidus*.

**Length of Sojourn of Feces in Infant Intestine.**—Kahn estimates from his study of this subject that the food passes through the digestive tract in infants in from four to twenty hours, fifteen hours being the usual average from intake to stool, but it is shorter in breast fed infants.

**Intravenous Injections of Sugar in Infants.**—Beumer never noted any toxic effects or fever in his parenteral injections in infants when fresh solutions were used. They were borne without injury by sick and healthy infants up to an amount proportional to 2.8 gm. per kilogram of weight, and in concentrations up to 70 per cent. solutions of dextrose. No benefit was derived from these injections in weeping eczema, and only moderate benefit in bronchopneumonia with stasis symptoms, but the effect was excellent in alimentary toxicosis and in atrophy with debility. The findings are tabulated from fifteen cases. Levulose was used in two. The sugar content of the blood dropped to its former level in from twelve to forty minutes.

## Zeitschrift für urologische Chirurgie, Berlin

Nov. 21, 1921, 8, No. 1-2

- Pyelography for Minute Calculi. V. Blum.—p. 1.  
\*Perineal Prostatectomy. R. Jent.—p. 6.  
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**Perineal Prostatectomy.**—Jent discusses the anatomic consequences of perineal prostatectomy by Wildbolz' technic. He resects the posterior portion of the prostatic urethra, directly back of the verumontanum and up to the bladder. The mouth of the bladder, with its internal sphincter, is then sutured with several catgut button sutures to the anterior portion of the prostatic urethra. Jent gives an illustrated description of three cases that came to necropsy three weeks, one year and two years after the operation. They show that the adenomatous prostate by this technic is removed as thoroughly, while the sound parts are respected as well as by any suprapubic method. The technic thus answered its purpose perfectly.

**Nephrectomy for Renal Tuberculosis.**—Wildbolz reports 61.5 per cent. cured and 8.7 not cured in his 317 cases after an interval of from one to ten years or more since the nephrectomy for renal tuberculosis. About 29.9 per cent. have died. In the 125 cases operated on over ten and fifteen years or more ago, 55.7 per cent. are cured, and only 3 show any signs of a tuberculous process elsewhere. In about a third of his total of 445 nephrectomies, a tuberculous abscess developed months or years afterward in the stump of the ureter which he had buried after severing it with the actual cautery and ligating with catgut. But the abscess ran its course harmlessly. It healed in a few weeks after spontaneous evacuation as a rule; only a few were left with a fistula for a few months or a year, secreting a little. In these cases the ureter had been severed close to the kidney. It is better, he thinks now, to cut the ureter 10 or 15 cm. below, carefully refraining from separating it from the surrounding tissues so as not to impair its vitality. The fate of the patient is usually decided in the first three years, although he has seen recurrence five and six years after an apparently complete cure. In the hundreds of cases of renal tuberculosis he has seen in the course of his practice, he never knew of but one instance of an apparent cure under medical measures alone. See also Vienna Letter, December 31, p. 2133.

**Safe Technic for Pyelography.**—Lichtenberg insists that the contrast substance chosen must be one that does no harm if it gets into a vein. He therefore rejects all colloidal solutions, ascribing the by-effects with silver salts to their colloidal structure. After extensive research, he has selected a 25 per cent. solution of sodium bromid as superior to all other contrast fluids for the purpose of pyelography. The use of this fluid seems to render the procedure as harmless as a simple catheterization of the ureter.

**Dynamics of the Bladder.**—This is the eighth article in Schwarz and Brenner's series of studies on the physiology and pathology of bladder functioning.

## Zentralblatt für Chirurgie, Leipzig

Sept. 24, 1921, 48, No. 38

- The Dangers of Ethyl Chlorid. G. Lotheissen.—p. 1375.  
\*Perforated Gastric and Duodenal Ulcer. H. Brütt.—p. 1378.  
Operative Treatment of Varicocele, without Injury to the Spermatocord or the Scrotum. L. Isnardi.—p. 1382.  
Gunshot Injuries of Renal Vessels. M. Molnár.—p. 1384.

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- Exostoses on Metatarsal Bones. C. Deutschländer.—p. 1422.  
A Substitute for Adhesive Plaster Bandage in Hare-Lip Operations. H. Fründ.—p. 1426.  
Spatula-Scissors for Operations on Peritoneum. E. Hoffmann.—p. 1429.

**Radical Versus Conservative Operation in Perforated Gastric and Duodenal Ulcer.**—Brütt reports in a consecutive series of about 140 operative cases of acute perforated ulcer a mortality of nearly 40 per cent. This he regards as a satisfactory showing for a long, consecutive series. Of those surviving the operation, 53 who had been operated on over



a year previously were reexamined, and of these 47 per cent. were free from all symptoms, while 12 (67 per cent., taking the two groups together) had complained of only slight symptoms. There was a pronounced relapse in 7 cases, or 12 per cent. In 5 of these 7 cases there were renewed, severe hemorrhages. There were either new or (at the first operation) undiscovered ulcers or peptic jejunal ulcers. Only after a long, strict treatment could the hemorrhages be brought under control. This high percentage of relapses, he thinks, speaks in favor of a radical procedure, provided circumstances permit. New hemorrhages following simple gastro-enterostomy and simple oversuturing of a perforated ulcer are not surprising when we consider how frequently—in the duodenum, especially—multiple ulcers appear. In 50 fatal cases of perforated ulcer, he found in 36 per cent. multiple ulcers at necropsy (the sites of the perforated ulcer having been near the pylorus or in the duodenum in 62 per cent. of the cases).

### Zentralblatt für innere Medizin, Leipzig

Oct. 1, 1921, 42, No. 39

Late Results in Cases of Tuberculosis in Which the Friedmann Treatment Was Used. C. Klieneberger.—p. 769.

### Acta Paediatrica, Stockholm

March 15, 1921, 1, No. 1

- \*Acute Digestive Disease in Infants. C. E. Bloch.—p. 1.
- \*Hysterical Spasm of Esophagus in Children. S. Monrad.—p. 29.
- \*Hair Ball in Stomach of Child. S. Monrad.—p. 39.
- \*Rumination in Infants. W. Wernstedt.—p. 45.
- \*Sugar Content of Blood in Infants. E. Nystén.—p. 79.
- \*Laboratory Tests for Whooping Cough. A. H. Meyer.—p. 99.
- \*Infantilism of Intestinal Origin. A. Lichtenstein.—p. 105.

**Acute Digestive Disease in Infants.**—Bloch classifies the mild form as acute dyspepsia; a more severe form as acute gastro-enteritis; a third form in which the acute gastro-enteritis develops in the course of chronic dyspepsia; and the fourth, symptomatic diarrhea. His experience at the Copenhagen general hospital has confirmed that acute gastro-enteritis is an infectious disease, the work of some member of the typhoid-colon group. The clinical picture seems to be about the same with typhoid, paradysentery, paratyphoid bacteria and the colon bacillus. In his 310 cases in this group, the mortality was 24 per cent., or only 17 per cent., omitting those that died within twenty-four hours. In the 77 cases of acute gastro-enteritis in infants with chronic dyspepsia or atrophy, the mortality was 30 per cent., or, corrected as above, 26 per cent. In 217 cases of acute gastro-enteritis examined bacteriologically, paradysentery bacteria were found in 10 per cent.; typhoid bacilli were found once, and paratyphoid in 5 cases. Among the 21 paradysentery cases, the smallest and weakest children seemed to present the disease in its mildest form; the severer cases being in older children and in robust infants. In treatment of acute gastro-enteritis, he stops all food and allows nothing but water, preferring to give it in the form of tea on account of the stimulation from the tea. He keeps up the restriction to water for one or two days, very seldom for three days, and then gives fresh boiled milk plus two parts of water, without sugar. He regards this as the lightest and simplest diet, and keeps it up until the symptoms of the toxicosis have disappeared, but does not continue it for more than a week. Then he dilutes the milk less or gives a milk mixture with 2 per cent. sugar. The slow pulse, subnormal temperature and collapses are combated by ether, camphorated oil, digitalis or caffeine. (In English.)

**Hysterical Spasm of the Esophagus.**—In one of Monrad's three cases the child of 5 had actually swallowed a caustic, but without apparent damage until several months later, after hearing stories of persons unable to swallow after drinking lye. The second patient was a boy of 5 and the spasms occurred before the child was a year old, which misled the diagnosis, a congenital diverticulum seeming probable. The spasm changed its location in this case; when first examined it was 25 cm. from the teeth, but, on a second examination, only 15 cm. below the teeth. The child's elastic esophagus did not seem to suffer from the effects of the distention. In the third case, hysterical anorexia in the second and third year of life had been ineffectually combated for several years, and the child when nearly 6 was brought to the hospital for treat-

ment. After considerable improvement she was taken home, but the condition then became aggravated to actual spasm of the esophagus. The parents applied to a surgeon who diagnosed a diverticulum and told the parents the stomach would have to be incised preliminary to the operation on the esophagus. The previous hysterical anorexia was the basis for Monrad's assertion that merely hysterical spasm of the esophagus was involved, and under treatment by introduction of a large bougie, plus suggestion, clinically normal conditions were promptly restored. But the tendency to hysteria persists, and psychotherapy will probably have to be continued for some time before the hysteria of this child can be eradicated. (In French.)

**Hair Ball in Stomach.**—Monrad says that the case he reports in a girl 3 years and 9 months old is the youngest of the seventeen operative cases of trichobezoar he has found on record, all in girls. The ball formed a cast of the stomach and upper duodenum. (In French.)

**Rumination in Infants.**—Wernstedt gives an illustrated study of 7 cases of rumination in infants. He is inclined to regard it as a habit, like sucking the thumb, in most cases, but occasionally there may be a pathologic factor, some spasm in the digestive tract or spastic condition in the abdominal wall. Giving the food in a less fluid form generally breaks up the habit, but diverting the attention is even more effectual, and a combination of the two is advisable. In one case the cure was promoted by hanging toys over the bed. (In German.)

**Sugar Content of Blood in Infants.**—Nystén tabulates the findings in repeated tests on 21 healthy infants and in 21 with various nutritional disturbances, and compares his results with those of others in this line. The sugar content of the blood was always high in severe dyspepsia and very high in toxicosis, but was within normal range in the infants with atrophy. (In German.)

**Laboratory Diagnosis of Whooping Cough.**—Meyer's experience with culture mediums on which pertussis suspects have coughed has already been mentioned in these columns. In 1,665 specimens sent in for examination, the Bordet-Gengou bacillus developed in 970. The work was done at the official Serum Institute at Copenhagen, an aluminum box with the culture material being sent by mail or messenger on demand by mail or telephone. He gives the details for making the durable potato-glycerin-agar-sugar culture medium to which defibrinated horse blood is added when the box is to be sent out. The patient coughs into the box, but does not expectorate in it. In specimens from the catarrhal stage, the bacilli were found in 75 per cent.; in the first week of the spasmodic phase, in 62.5 per cent.; second week, 70; third week, 53; fourth week, 47, and fifth week or later, in 16 per cent. (In English.)

**Infantilism of Intestinal Origin.**—Lichtenstein refers to cases of gastro-enteritis or other digestive disturbance persisting so long that the child is actually stunted in its growth. In 8 of his 9 cases of this kind a tendency to spasmophilia was pronounced; 4 presented actual tetany and 3 laryngospasm. There was achylia in the 6 tested for it. His records show the patience and perseverance needed to realize the cure, but the results were most gratifying in some of the cases. A return to breast milk, even long after weaning, may be necessary.

### Ugeskrift for Læger, Copenhagen

Oct. 20, 1921, 83, No. 42

- \*Stimulating Action of Small Doses of Roentgen Rays. S. Nordentoft.—p. 1353.
- Sweat Band Dermatitis. O. Jersild.—p. 1357.

**Stimulating Action of Small Doses of Roentgen Rays.**—Nordentoft summarizes the recent work of Stephan and of Brock in this line in treatment of psoriasis by roentgen irradiation of the thymus, of the pancreas in diabetes, and of the kidneys in glomerular nephritis. Large doses aggravate the pathologic condition, while small doses seem to have a curative action, stimulating the cells to normal functioning. Nordentoft comments that even if only part of all this is confirmed by others, an entirely new field is opened for radiotherapy.



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## CERTAIN FUNDAMENTALS IN EARLY DIAGNOSIS OF PULMONARY TUBERCULOSIS

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From time to time it seems wise to pause to consider, to take stock, so to speak, of the results of our efforts along certain lines in medicine. I shall devote myself largely to a brief summary of some of our work at Trudeau, and not attempt a complete discussion of the subject, which would be impossible in the limits of this article.

### THE PROBLEM FROM THE POINT OF VIEW OF THE GENERAL PRACTITIONER

The diagnosis of pulmonary tuberculosis today is at once easier and more difficult than formerly: easier because laboratory facilities are much more readily available to every physician; more difficult because the public demands an earlier and more exact diagnosis. In general, we may be called on, in any case in which suspicion of pulmonary tuberculosis has been aroused, to answer four questions:

1. Does or does not the patient have pulmonary tuberculosis? In doing this we must seek to learn whether he has: (a) positive clinical pulmonary tuberculosis; (b) suspected pulmonary tuberculosis; (c) demonstrable nonclinical pulmonary tuberculosis, or (d) no pulmonary tuberculosis at all.

2. What must be done? Here we must decide among: (a) definite prolonged treatment; (b) treatment for three months, or (c) a brief exercise test and, if satisfactory, a return at once to work.

3. If prolonged treatment is required, what must be recommended? This depends on several factors: (a) the financial condition of the family; (b) the stage of disease; (c) the temperament of the patient. After considering each of these, we may decide on: (a) home treatment; (b) class treatment; (c) sanatorium treatment, or (d) hospital treatment.

4. What shall we tell the patient? Is it wiser to blurt out the whole truth at once or to break the diagnosis to him gradually?

### WHEN TO SUSPECT THE PRESENCE OF PULMONARY TUBERCULOSIS

Pulmonary tuberculosis should be looked for whenever a patient gives a history of:

1. Spitting blood. In any amount, no matter how little, blood spitting should suggest pulmonary tuberculosis. Bleeding from the gums and nose should be

excluded, but blood from the pharynx, from the base of the tongue or especially from the larynx, is exceedingly rare.

2. Pleurisy with effusion. This can, of course, be due to other causes than tuberculosis; but the burden of proof should rest on him who says it is due to other causes. Careful physical and roentgen-ray examinations, as well as insistent and persistent inquiries for sputum, should be made.

3. Cough. Cough immediately suggests pulmonary involvement; and if a so-called cold, or indeed a self-evident cold that starts as a rhinitis and passes gradually into a bronchitis, persists over two or three weeks, we should turn our thoughts to a pulmonary involvement. In fact, in any cough we should allow our thoughts to picture the most serious cause, though it may be due to cigaret smoking, to a chronic nasopharyngitis, or to involvement of some of the sinuses. The last named affection was the cause of many mistaken diagnoses in the late war.

4. Fatigue, etc. When a patient complains of fatigue at the end of the day, a loss of weight, possibly of slight flushing, we should always think of a pulmonary tuberculosis that has as yet not attacked the bronchi.

5. Fistula-in-ano. The following is no unusual history: The patient was a famous athlete, a director of athletics in the army in France. He consulted a physician in a small Pennsylvania town for an ischio-rectal abscess. The abscess was treated and the lungs ignored. When finally the pulmonary tuberculosis was diagnosed, it was in an advanced stage.

6. Exposure to infection. The occurrence of tuberculosis within the family, unless there is direct contact, is assuming less and less importance. Contact, repeated contact, prolonged contact, whether in the family circle or outside it, is of great importance and should under suspicious circumstances demand careful study.

I should like to emphasize that we remember in every case that comes to the office the great frequency of two diseases that spare neither rich nor poor, devotee nor sinner, young nor old. I refer to syphilis and tuberculosis. It would be wise to write on the walls of the consulting room a legend which would run: "Remember under all circumstances the great frequency of syphilis and tuberculosis." Diagnosis in many instances depends largely on recalling the possibility of the occurrence of these two diseases.

### THE METHOD OF ATTACK

Our attention having been drawn to the lungs, we must now try to answer to ourselves the question: Is pulmonary tuberculosis present?



A. *History*.—I take it for granted that we have taken a more or less complete history. Two points should be carefully inquired for—the occurrence of blood spitting and of pleurisy, especially pleurisy with effusion. Exposure to infection must be noted.

B. *Physical Examination*.—The temperature, pulse rate, weight, height, condition of the nails, and general condition having been noted, the patient should be stripped to the waist. This takes considerable time; but the diagnosis of pulmonary tuberculosis takes time, and we must spend it if we hope to reach a satisfactory diagnosis in certain cases. Inspection and palpation reveal lagging or lessened movement of a side, muscular contraction or relaxation, the increase or decrease of vocal fremitus. These signs, however, are merely suggestive. Percussion is less important than auscultation. In many early cases the changes are so slight that differences in percussion are often of no help. A slightly higher pitched note can often be obtained in normal chests above the second rib. There is agreement among many workers that the auscultatory data are by far the most important in the physical diagnosis of pulmonary tuberculosis. It may be recalled that there are two schools: one holding that pulmonary tuberculosis always arises at the pulmonary root and extends usually toward the apex; the second that it begins much more peripherally. The bearing of these statements on the earliest abnormal physical signs becomes clearly evident when we pause to think. If the disease arises deep in the lung, we are more likely to get comparatively early changes in breath sounds, bronchovesicular breathing and increase in vocal resonance as well as change on percussion. With a peripheral origin, the breathing may become suppressed or remain normal. In the latter case, râles may be the first manifestation of pulmonary change. In any case, they are among the easiest of all changes to detect if one knows how to produce them. The question of acute hearing, of an ear trained for râles, is largely humbug, for I am sure that any one with ordinary hearing can detect râles in an early case of pulmonary tuberculosis if he knows the technic. Even Laënnec, who gave us the stethoscope, recognized that râles could be better heard after a cough. Indeed, sometimes râles can be heard only after what we call an expiratory cough. This is best illustrated: The patient is told to breathe out slowly one-half or three quarters of the air in his lungs, save enough air to cough with, and then to cough and immediately to take a fairly full, fairly rapid inspiration. In all coughing one should see that the thoracic muscles are completely relaxed and that the cough is neither violent nor noisy, for otherwise râles, though present, may escape detection. Particular attention should be paid to the region above the second rib and third vertebral spine. When these areas are free of disease and the abnormal physical signs are confined to one or both bases, the burden of proof is on him who diagnoses pulmonary tuberculosis. It can occur only at the base, but rarely does. The moderately coarse râle is the most frequent râle in pulmonary tuberculosis, and any one can easily and quickly learn how to produce it and to recognize it. I might add that it is significant only when heard above the second rib and third vertebral spine.

C. *The Roentgen-Ray Examination*.—Slowly but surely do we build our foundations in medicine. Had some noted observer imparted to me in 1900 the fact

that my old teachers, Dr. Trudeau and Dr. Osler, could not detect the presence of pulmonary tuberculosis by physical signs when it had already covered a considerable area of the lung, I might have politely but most certainly would have vehemently denied the assertion. But such is the fact. Even Dr. Trudeau knew that in certain cases he could find tubercle bacilli in the sputum but detect no definite abnormal physical signs. How often, one may ask, do such conditions occur? In so many in my experience that I never exclude pulmonary tuberculosis in any suspicious case until I see the roentgen-ray plates. Some place the figures at from 5 to 10 per cent. Fortunately, pulmonary tuberculosis usually quickly affects the periphery of the lung, where it can be detected by physical examination. In no small percentage the disease begins deep within the lung and gradually works toward the costal surface. One day we listen to a lung that is almost normal, and a few days later a large area is covered with râles. The case passes at a bound from a state of incipience to one of advanced tuberculosis. For these reasons I believe that stereoscopic plates are necessary in the diagnosis of pulmonary tuberculosis if we wish to avoid an uncomfortably large percentage of errors.

D. *Sputum Examination*.—I have left until last the most important examination of all. I refer to the sputum. With the large number of state, county and municipal laboratories where free examinations of sputum are made, we are fast approaching the time when failure to suggest or to make a sputum examination will be looked on as malpractice. One should not be satisfied with a single examination. If it is positive, it should be checked up; if negative, the test should be repeated many times. How many bacilli make a positive diagnosis certain? I believe that three or four are necessary to exclude all error, but in many instances in which only one bacillus has been found at first, on later examinations increased numbers were repeatedly found. Every other test, every other examination, may be more or less closely simulated; but tubercle bacilli in the sputum on repeated examinations mean only one thing, an ulcerative tuberculous process somewhere in the respiratory tract. One should not be misled, let me repeat again, by negative sputum examinations. One definitely positive specimen is worth fifty negative reports. One should not accept a statement from the patient that he has no sputum, but should insist that he bring some of the mucus or phlegm that he raises in the morning.

#### EVALUATION OF DATA

The evaluation of data, the application of common sense to medical facts, is not always an easy matter. I shall possibly be somewhat dogmatic, but my dogmatism is based on some experience and many errors, which we have tried to correct and avoid. We may roughly group all cases that fall under suspicion of being pulmonary tuberculosis into four groups: (1) diagnosis negative; (2) diagnosis unwarranted; (3) suspected, and (4) demonstrable pulmonary tuberculosis. The last group we divide into nonclinical and clinical. The last mentioned group we separate into active and inactive groups. Among the many facts gleaned from history and examinations, five data have come to be considered essential in the diagnosis of pulmonary tuberculosis. They are the occurrence of (1) hemoptysis and of (2) pleurisy with effusion; of (3) moderately coarse râles above the level of the second



rib and third vertebral spine, (4) of a parenchymatous roentgen-ray lesion above the second rib and third vertebral spine, and finally of (5) tubercle bacilli in the sputum (and feces).

Of all these, of course, the occurrence of tubercle bacilli is by far the most important and is the only evidence that can be sworn to as proof positive of tuberculosis. Next I would place a definite parenchymatous roentgen-ray lesion, situated above the second rib and third vertebral spine. Closely following this, in my estimation, are definite moderately coarse râles. If I may digress for a moment I would like to say that I classify adventitious pulmonary sounds in regard to their probable place of origin, passing from within outward as follows: (1) rhonchi or sonorous and sibilant râles; (2) coarse râles—moist, some would call them; (3) moderately coarse râles; (4) fine râles; (5) crepitant râles (rarely heard in pulmonary tuber-

culous until proved otherwise. Such râles at an apex with a perfectly normal roentgenogram are in the rarest instances in my experience due to pulmonary tuberculosis. But it is necessary to be sure about the technic and the interpretation of the roentgenogram. Trailing these data come hemoptysis and pleurisy with effusion. All of us are aware that hemoptysis occurs in other conditions than pulmonary tuberculosis. None of us, I hope, have ever taken down a textbook of medicine, as I did one night in a hall bedroom near the Boston City Hospital, to try to prove that the blood I myself had just spat was due to some other cause. An hemoptysis without discoverable cause, especially when the patient has had a slight cough, a "cold" he may term it, and when he is a little under par, is a symptom that points definitely to a positive diagnosis of pulmonary tuberculosis. If the physical signs in a week or two are negative, one should study the lungs

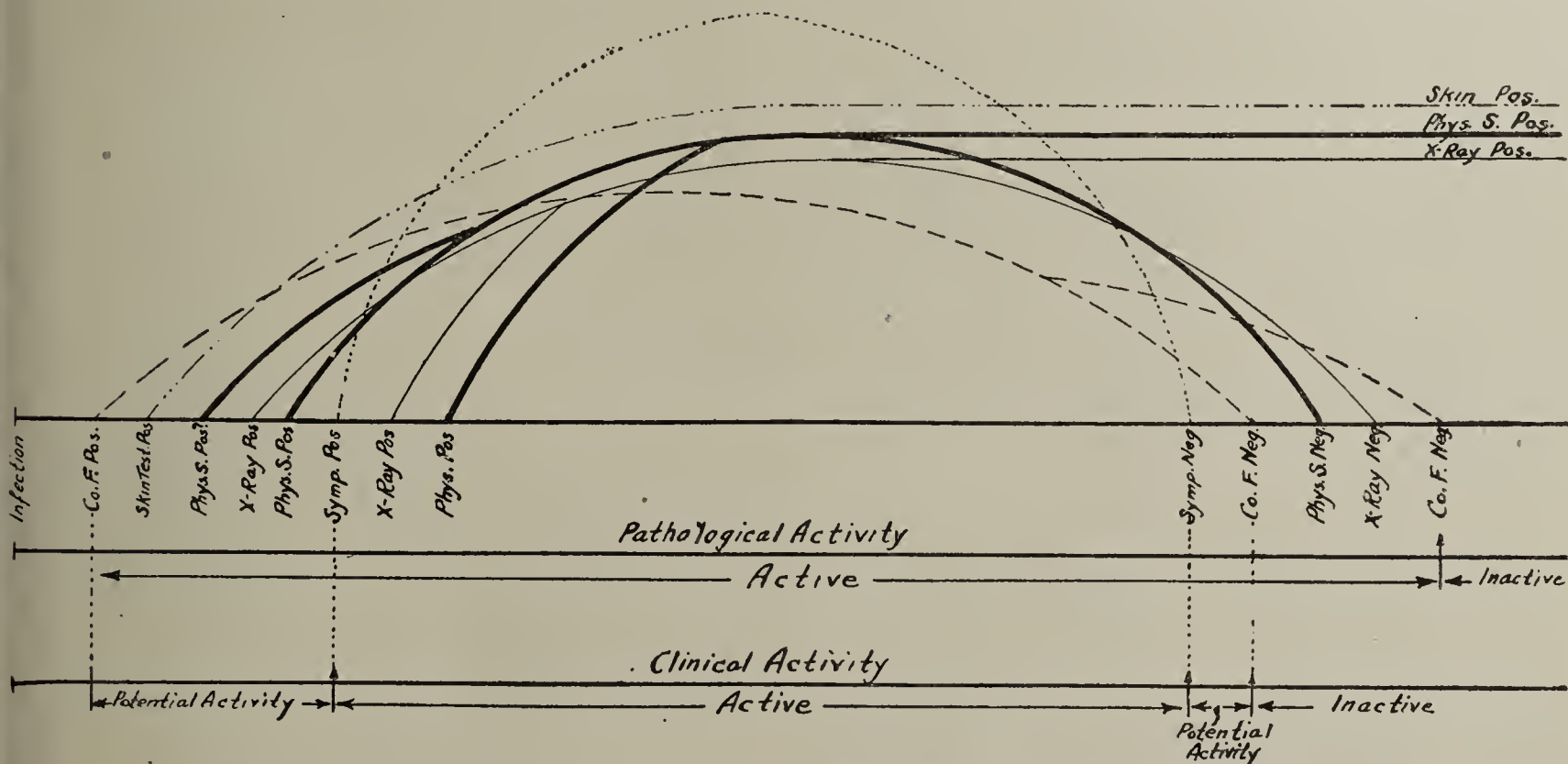


Chart 1.—The relation of symptoms and data, obtained from physical examinations, to pathologic and clinical activity

culosis and indicative always of tuberculous pneumonia or bronchopneumonia), and (6) pleural friction sounds. The usual râle in pulmonary tuberculosis is, following this classification, the moderately coarse, heard in the earlier stage only during the inspiration that follows the expiratory cough which I have mentioned. Later on it can be heard following any cough that is not too hard and not too noisy. Later still it is plainly evident on ordinary breathing; but when it occurs under this condition the case has always, in my experience, passed the incipient, or, as we shall soon call it, the minimal stage of pulmonary tuberculosis. I refer, let me say again, only to râles occurring above the second rib and third vertebral spine. I do not imply that pulmonary tuberculosis cannot produce râles elsewhere, but it is a safe rule to conclude that moderately coarse râles above the second rib and third vertebral spine are due to pulmonary tuberculosis, while those occurring elsewhere should be considered as due to pulmonary tuberculosis only when other data confirm such a diagnosis.

In short, râles at a base should be considered as due to nontuberculous conditions until proved to be tuberculous, while those at an apex must be held to be tuber-

culous until proved otherwise. Such râles at an apex with a perfectly normal roentgenogram are in the rarest instances in my experience due to pulmonary tuberculosis.

I can never speak of pleurisy with effusion without having my mind wander back to Boston, where the best work on this subject has been done. I refer to the work of Henry I. Bowditch, G. M. Garland, Vincent Y. Bowditch, Richard Cabot and others. Pleurisy with effusion is the last of the five primary diagnosis data. It may, of course, be due to other causes than pulmonary tuberculosis, but I would urge that in any case of idiopathic pleurisy with effusion, one should spare no efforts to exclude pulmonary tuberculosis. As soon as the fluid is absorbed, roentgen-ray studies should be made, and one should base his advice on them as well as on the physical examination.

Let me, then, repeat the five cardinal data in the diagnosis of pulmonary tuberculosis in the order of their importance: (1) tubercle bacilli; (2) and (3) moderately coarse râles and a parenchymatous roentgen-ray lesion above the second rib and third vertebral spine; (4) hemoptysis, and (5) pleurisy with effusion.

In order to exclude pulmonary tuberculosis, to make a negative diagnosis, we believe that all five of these data must be absent. If either hemoptysis or pleurisy



with effusion occurs alone and the other four data are lacking, a diagnosis of suspected pulmonary tuberculosis should be made. If, perchance, roentgen-ray examination discloses a parenchymatous roentgen-ray lesion above the second rib and third vertebral spine, in a patient without symptoms at present, a diagnosis of demonstrable, nonclinical pulmonary tuberculosis can be made. We reserve the term "unwarranted" for the cases in which we cannot obtain for one reason or another sufficient information on these five points.

For more than twenty years we have used the subcutaneous tuberculin test and have encountered no untoward results of any moment. When I pause to think today of the chances we ran in giving the test to many patients with extensive pulmonary tuberculosis but few physical signs, I am convinced that, given as we give it today, the tuberculin test is never harmful. We use it only in patients with doubtful or slight parenchymatous roentgen-ray lesions, in whom other sufficient data are lacking. Should the test prove to be negative, we return the patient to his home and work, telling him that if he should ever wish to reenter the institution we will take him in at once. So far no such patient has ever applied for readmission.<sup>1</sup> Should he react, his lungs are carefully gone over from day to day and roentgen-ray studies made during the height of the reaction. If both prove negative, we conclude that some other focus than those under study in the lungs caused the reaction or that the pulmonary lesion is at least not active. If either physical signs or the parenchymatous roentgen-ray lesion shows an increase, we feel that in all probability the pulmonary lesion is not wholly inactive.

#### THE DIAGNOSIS OF ACTIVITY

The question of activity of a tuberculous pulmonary focus has long concerned students of this disease, and at the outset of the late war it assumed a most important place, as no man with active pulmonary tuberculosis could with any degree of safety be drafted into the army. I would like again to pay tribute to Colonel Bushnell, whose wide experience and sound judgment proved of such great value to his country at that time. The army authorities held that, in general, râles due to tuberculous disease indicated an active process. It seems to me that they were correct; for, considering the violent exercise that all men were subjected to in the course of training, such an individual, with few exceptions, would show signs of an active relapse.

With our civilian practice, today, however, the matter is very different. All of us who work much with pulmonary tuberculosis realize that in the vast majority of cases the ultimate outcome never goes beyond an arrest of the disease. Most of us who have suffered once from pulmonary tuberculosis are, in Dr. Trudeau's words, "lame ducks." But it is surprising what an amount of work such persons can accomplish when they live within their limitations. Most of our patients will be returned to us after training in some sanatorium in this condition of arrest. They would be considered in the army as active cases; but for us, if they can live properly, they can be looked on as quiescent or only potentially active. As the disease is held in abeyance more and more frequently, an increasing number of such cases fall under our care.

When must we say that the disease is again active and needs rigorous treatment? As a matter of fact, we must decide this question for every patient with pulmonary tuberculosis that consults us. At Trudeau we look on focal activity, or, as we like to call it, pathologic activity, as that stage in a tuberculous process in which some change is taking place either for better or for worse. If one should criticize us and say that activity indicates only progression or advancement of disease, then we will reply that pathologic change includes activity and retro-activity. Pathologic activity always, of course, precedes clinical activity; but how soon clinical follows pathologic activity is not easy to say. Neither pathologic nor clinical activity can be correlated with physical signs. The occurrence of tubercle bacilli in the sputum indicates pathologic activity possibly in 90 per cent. of all cases, and the presence of elastic tissue in 100 per cent. No other laboratory test is of any value in ordinary practice in the determination of activity, and all of us have known of many cases of pulmonary tuberculosis which for years have shown continuously or intermittently tubercle bacilli in the sputum, and yet have manifested no signs of clinical activity. The roentgen-ray pictures when skilfully taken and interpreted may help us considerably, and pathologically active cases, we feel, show mottling with ill-defined edges, "cottony" in appearance, blending gradually into the surrounding normal lung picture. Clinical activity which concerns us chiefly is largely dependent on the presence of symptoms. These we divide according to their importance in activity into two groups a major, including fever, rapid pulse, pleurisy, hemoptysis, lack of endurance, loss of weight, and night sweats; and a minor, including chills, cough and expectoration. Cough and expectoration have slight bearing on activity, and the presence of tubercle bacilli in an otherwise arrested case by no means indicates clinical activity.

#### THE MINIMAL REQUIREMENTS FOR A POSITIVE DIAGNOSIS

The minimal requirements for a positive diagnosis of pulmonary tuberculosis have even in my short career varied widely. In 1900 we strove to convince men of the danger of waiting to find tubercle bacilli in the sputum before making a diagnosis of pulmonary tuberculosis, and now we find many French authorities stating that without tubercle bacilli a positive diagnosis of pulmonary tuberculosis cannot be made. It goes without saying that the presence of tubercle bacilli in the sputum settles the diagnosis. But many patients have tubercle bacilli only in the more advanced stages of the disease. I have already stated that the occurrence of either hemoptysis without cause or of idiopathic pleurisy with effusion makes a diagnosis of suspected pulmonary tuberculosis necessary. The presence of a few constitutional or localizing symptoms with slight physical signs, even if no moderately coarse râles are present, when confirmatory roentgen-ray changes occur, renders a positive diagnosis advisable. Such symptoms, with inconstant moderately coarse râles and no confirmatory roentgen-ray findings, are insufficient for a positive diagnosis. The presence of at least one of the five cardinal diagnostic points, as I have already said, is always necessary for a positive diagnosis.

When the diagnosis has been made, what must be done? Has the patient minimal or advanced or far

1. Brown, Lawrason, and Heise, F. H.: On Twenty-Four Years' Experience with the Subcutaneous Tuberculin Test, *Am. Rev. Tuberc.* 4: 254 (June) 1920.



advanced pulmonary tuberculosis? From what I have said, it can quickly be realized that it is necessary to diagnose at once the stage in which the patient is, and furthermore that it cannot be done accurately in all cases without the aid of the roentgen ray. The American Sanatorium Association has a committee at present at work on this subject, which we hope will be settled during the coming year. The consensus of opinion is that roentgenograms and physical signs must be considered in the diagnosis of the stage of all cases. If the patient has moderately advanced or far advanced tuberculosis, definite prolonged treatment is necessary. If only suspected tuberculosis, three months' treatment may give us the results we wish. If the patient has only demonstrable, nonclinical pulmonary tuberculosis, we usually increase his exercise very rapidly and return him in a few weeks to his work, telling him, or course, of the dangers he runs if he overdoes. If in a minimal case the patient responds to a subcutaneous dose of tuberculin with a general reaction and with no focal changes, we treat him in a similar manner.

If prolonged treatment is required, what must be recommended? I need not discuss this in detail. The financial condition of the family is, of course, the first and most important factor. Other things being equal, the stage of the disease may determine whether we advise sanatorium or hospital. The temperament of the patient may help us to decide between home and class treatment and treatment in an institution. The education of the patient is of

paramount importance and has great weight in determining the disposition of his case. Only second to this is the education of his family.

Finally, we must decide while we are making the diagnosis what we shall tell the patient. Frankness, even though tempered with kindness, is a great shock to many patients, but is often less trying in the end than uncertainty.

SUMMARY

1. The diagnosis of pulmonary tuberculosis is in most instances more easily made today than formerly, but in the remainder such a diagnosis may tax the ingenuity of the cleverest physician.
2. The diagnosis of pulmonary tuberculosis is not complete with the determination only of the presence of the disease but must include also opinions about its activity, stage, and place and length of treatment.
3. Pulmonary tuberculosis should be suspected in every case of blood spitting, pleurisy with effusion, persistent cough, undue fatigue, loss of weight, fistula-in-ano, or prolonged exposure to infection, whether in childhood or in adult life.
4. It should be remembered that syphilis and tuberculosis respect no one.

5. He who fails on examination to strip the patient to the waist may injure not only the patient but himself as well.
6. He who would diagnose pulmonary tuberculosis early must be willing to pay for it in time and care and patience.
7. Auscultation is vastly more helpful to him who is not fully proficient in the elicitation of physical signs than are percussion and inspection.
8. The detection of râles is the most important factor in the physical diagnosis of early pulmonary tuberculosis.
9. Failure to detect moderately coarse râles in pulmonary tuberculosis is due more often to ignorance of how to produce them rather than to inability to hear them.
10. In early stages of the disease, râles are to be heard only after a simple or an expiratory cough.
11. Persistent abnormal signs above the second rib and third vertebral spine, at one or at possibly both apices, demand a diagnosis of pulmonary tuberculosis

until it can be disproved. Conversely, such signs at one or both bases indicate nontuberculous disease until disproved.

12. Stereoscopic roentgenograms, carefully taken and carefully interpreted, may reveal slight or extensive pulmonary tuberculosis which by ordinary methods of physical examination may escape detection.

13. In any doubtful case, pulmonary tuberculosis should never be excluded without a careful roentgen-ray study.

14. The presence of three or four or more tubercle bacilli in the sputum is the surest proof of the presence of tuberculosis in the respiratory tract.
15. Repeated negative sputum examinations do not exclude pulmonary tuberculosis.
16. It should be borne constantly in mind that any case in which no tubercle bacilli have ever been found may not be tuberculosis, and this fact should be emphasized always when extensive physical signs or a long history is present.
17. Next to tubercle bacilli, the presence of moderately coarse râles or a parenchymatous roentgen-ray lesion above the second rib and third vertebral spine is the best evidence of pulmonary tuberculosis.
18. Hemoptysis of a dram or more without heart disease or acute pulmonary infection, and idiopathic pleurisy with effusion, demand a diagnosis of suspected pulmonary tuberculosis and careful study.
19. The five cardinal diagnostic points in pulmonary tuberculosis are tubercle bacilli, moderately coarse râles and a parenchymatous roentgen-ray lesion above the second rib and third vertebral spine, hemoptysis of 1 dram or more, and pleurisy with effusion.

DIAGNOSIS OF PULMONARY TUBERCULOSIS															
FINDINGS		CLINICAL LABORATORY	GENERAL DIAGNOSIS								DIAGNOSIS OF ACTIVITY *				
			1	2	3	4	5	6	7	8	9	10	11	12	
			B	P <sub>c</sub>	R	H	P <sub>L</sub>	SUB-Q FOCAL - REACT B	CF	F	P	OTHER SUB-Q SYMPT. CON.			
NON TUBERCULOUS			ACTIVE	○	○	○	○	○	○	○	+	+	+		
			INACTIVE	○	○	○	○	○	○	○	+	○	+		
UNWARRANTED			EVIDENCE INSUFFICIENT												
SUSPECTED			ACTIVE	○	○	○	+	+	○	+	+	+	+		
4-5 MUST BE PRESENT BUT NOT BOTH			INACTIVE	○	○	○	+	+	○	+	+	○	+		
DEMONSTRABLE			NON CLINICAL	INACTIVE	○	+	○	○	○	○	○	+	○		
"2-3" BOTH 4-5			CLINICAL	ACTIVE	+	+	+	+	+	+	+	+	+		
MUST BE PRESENT			SYMPT. MUST BE PRESENT	INACTIVE	+	+	+	+	+	+	+	○	○		

ABBREVIATIONS	
GENERAL & ACTIVITY	
B.	TUBERCLE BACILLI
P <sub>c</sub>	PARENCHYMATOUS-XRAY
R.	RALES
H.	HEMOPTYSIS
P <sub>L</sub> .	PLEURISY WITH EFFUSION
CF.	COMPLEMENT FIXATION
SUB-Q. TUBERCULIN REACTION SUBCUTANEOUS	
F.	FEVER OVER-
MALE 99'r	
FEMALE 99.6r	
P.	PULSE OVER-
MALE 90	
FEMALE 96	

Chart 2.—Diagnosis of pulmonary tuberculosis: Fatigue, loss of weight and strength, and other symptoms of poisoning are not to be disregarded when not explained on other grounds.

- ABBREVIATIONS
- GENERAL & ACTIVITY
- B. TUBERCLE BACILLI
- Pc. PARENCHYMATOUS-XRAY
- R. RALES
- H. HEMOPTYSIS
- P. PLEURISY WITH EFFUSION
- CF. COMPLEMENT FIXATION
- SUB-Q. TUBERCULIN REACTION SUBCUTANEOUS
- F. FEVER OVER-
- MALE 99° F
- FEMALE 98.6° F
- P. PULSE OVER-
- MALE 90
- FEMALE 96



20. At least one or more of these points must be positive before a diagnosis of pulmonary tuberculosis can be made.

21. If all five cardinal diagnostic points are lacking, a negative diagnosis in regard to pulmonary tuberculosis can be made; but in 1 or 2 per cent. we may be in error.

22. A negative subcutaneous tuberculin test in an early case enables one to tell the patient that treatment at this time is not necessary.

23. The diagnosis of clinical activity must be based largely if not entirely on symptoms and not on physical signs.

24. Pathologic changes in the lungs can begin before any signs of clinical activity are present and continue long after all have disappeared.

25. Cough and expectoration, and even in certain cases tubercle bacilli in the sputum, are not positive evidence of activity.

26. Finally, one should imagine oneself in the patient's place, give his case the study one would ask for oneself, and not subject him to loss of time, of health and possibly even of life, by hasty conclusions drawn from carelessly collected and insufficiently considered data.

## NATIVE INFESTATION BY THE BROAD TAPEWORM, *DIPHYLLOBOTHRIUM LATUM* \*

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Cases of infection by the broad tapeworm have been fairly frequently reported in the United States, but most of these have occurred in immigrants who have acquired the infection abroad. Nickerson<sup>1</sup> states that the largest number of cases have been reported from Minnesota among the Finnish immigrants. Riley<sup>2</sup> asserts that the general view of medical men is that "there is very little evidence at present to justify an assumption that native foci of infection exist in this country." This view can no longer be held because there is gradually accumulating evidences of the existence of a number of such foci.

Stiles<sup>3</sup> said in 1907 that "it is probable that immigrants will infect the fish in some of our lake regions." This statement has recently been well illustrated by a case reported by M. W. Lyon.<sup>4</sup> A Siberian immigrant who resided in South Bend, Ind., for the last six years had been passing segments of the broad tapeworm for at least eight years: "For the past six years many thousands of eggs must have entered the sewerage system of South Bend, very soon to reach Lake Michigan through the St. Joseph River. In both river and lake, hatching larvae must have been able to parasitize various fish."

There are four cases<sup>5</sup> on record in which the patient unquestionably acquired the parasite in this country. The native infestation occurred in three cases def-

initely in Minnesota and in the other either in Minnesota or in North Dakota.

I have observed two cases of native infestation by *Diphyllobothrium latum*, occurring in children born and raised in Chicago:

### REPORT OF CASES

CASE 1.—L. R., aged 7, a Jewish schoolgirl, whom I saw in November, 1919, was born in Chicago, where she had resided since, never having been out of the city. She had always lived in the Jewish section on the west side of Chicago. Her parents were Russian Jews. She did not like fish, but partook of small amounts once a week when the family served it. The fish was either boiled or fried, and only three varieties were eaten, namely, perch, white fish and Great Lake trout. The supply of these fish comes mostly from Lake Michigan. The patient felt entirely well, had no symptomatic complaints, and lived a normal life. She became cognizant of the tapeworm when she passed three fourths yard (68 cm.) of it the day before entering the hospital. She had never noticed segments previously, nor had her mother. No member of the family, nor persons living in the same house, had ever had tapeworms. Her appetite, color and general development were good, and she appeared in perfect health. Physical examination was negative.

The urine was negative. The blood examination revealed: erythrocytes, 4,700,000; hemoglobin, 85 per cent. Sahli; leukocytes, 7,000; polymorphonuclears, 49 per cent.; small lymphocytes, 45 per cent.; large lymphocytes, 4 per cent.; eosinophils, 2 per cent. Stool examination, two days after admittance, revealed many typical ova of *Diphyllobothrium latum*. The next day, after the administration of 1½ drams (5.6 c.c.) of oleoresin of aspidium (the details of treatment will be discussed later), 12 feet (3.65 meters) of *Diphyllobothrium latum* was passed in the stool. The head was not found, but the segments became very small before breaking off.

The next day the eggs were still being passed in the stool, but after that none could be found on repeated stool examination. The ova and worm, after being identified by us, were submitted to Dr. Thomas Magath, parasitologist at the University of Illinois College of Medicine, who confirmed the diagnosis of a typical *Diphyllobothrium latum* (*Dibothriocephalus latus*). Seven months later the child is still free from the infection, no ova nor segments being found in the stool.

CASE 2.—S. B., a Jewish boy, aged 3 years, was born in Chicago, where he has resided since, never having been out of the city. The parents were born in Russia. The family ate some uncooked smoked fish in the winter. All other fish was cooked (fried or boiled). None of the eight other children or parents had ever had tapeworms. The patient was admitted to the Presbyterian Hospital (Dr. W. Hoffman's service), Sept. 28, 1918, complaining of pain in the abdomen and a history of having passed segments of the worm nine weeks previously and frequently after that. The boy was well nourished, nervous and irritable.

Examination of the stool revealed typical ova of *Diphyllobothrium latum*. After administration of 40 minims (2.5 c.c.) of oleoresin of aspidium, and cathartics, 13 feet (4 meters) of *Diphyllobothrium latum* was obtained. A repetition of the foregoing treatment failed to produce any more of the worm.

### ADDITIONAL DATA

In the course of this study, I had occasion to review all of the cases of tapeworm admitted to the Cook County Hospital in the period from 1911 to 1921. Several interesting points were brought out.

Eighty-five cases of tapeworm were admitted during this period, of which forty-eight were stated to be *Taenia saginata*, four were *Taenia solium*, two were *Diphyllobothrium latum*, and in thirty-one the type was not stated in the record.

Among these cases, twenty-five patients complained of a considerably increased appetite approaching the

\* From the Cook County Hospital.

1. Nickerson, W. S.: The Broad Tapeworm in Minnesota, J.A.M.A. 46:711 (March 10) 1906; 74:457 (Feb. 14) 1920; Science 33:270, 1911.

2. Riley, W. A.: The Broad Tapeworm, *Dibothriocephalus Latus*, in Minnesota, J. A. M. A. 73:1186 (Oct. 18) 1919.

3. Stiles, C. W., in Osler's Modern Medicine 1:563, 1907.

4. Lyon, M. W., Jr.: Infection by the Broad Tapeworm, *Diphyllobothrium Latum*, J. A. M. A. 74:655 (March 6) 1920.

5. Nickerson (footnote 1). Riley (footnote 2).



ravenous, fifteen had average appetites, and sixteen complained of definite loss of appetite.

Eosinophilia was present in seventeen out of thirty-three cases in which a blood count was performed. The percentage varied from 3 to 17.

In neither of the broad tapeworm cases here reported was a secondary anemia present. In both cases, well preserved and easily recognizable segments were passed, which is said to be unusual.<sup>6</sup> It is generally believed that the chief cause of the anemia is due to the absorption of toxic products from disintegrating segments of the worm in the intestines.<sup>7</sup> The apparent lack of this factor probably accounts for the absence of anemia in these cases.

#### TREATMENT OF TAPEWORMS IN GENERAL

Prophylaxis consists in the sufficient cooking of meat and fish to destroy the cysticerci.

The most efficient drug for the expulsion of the worm is the oleoresin of aspidium (male fern). Capsules containing from 10 to 20 minims (0.6 to 1.25 c.c.) may be given, provided the child is capable of swallowing capsules. Otherwise an emulsion should be prepared with simple elixir and acacia, containing from 5 to 10 minims (0.3 to 0.6 c.c.) to the dram (3.75 c.c.).

A satisfactory plan to follow is: a light supper of milk, an enema before retiring, a saline cathartic on arising the next morning but no breakfast. As soon as the bowels have responded freely to the saline, the aspidium should be administered. The dose for a child of 4 years is about 1 dram (3.75 c.c.) of the male fern given in the course of four hours. Following the last dose, the saline should be repeated and a large soapsuds enema given soon after. Only milk, taken sparingly, should be given that day. All stools should be collected and the worm fragments carefully examined to determine whether the head has been passed. If the child sits on a warmed vessel while passing the segments, there is less likelihood of the worm's breaking off at the neck; otherwise the expelled portion of the worm striking a cold receptacle contracts and frequently breaks off. If the head is retained, the treatment should be repeated after a rest interval of several days, as otherwise the worm will grow again and segments reappear in the stools in about three months.

#### COMMENT

Every tapeworm passed, as well as the ova, should be carefully examined to ascertain whether it is the uncommon *Diphyllobothrium latum*. Whenever the broad tapeworm is found, the patient or parents should be questioned concerning his place of birth, residence since birth, type of fish eaten and the mode of cooking. As the number of reported cases of native acquired infection with this tapeworm increases, much additional information will be gained concerning the extent and number of the foci in the United States.

5 South Wabash Avenue.

6. Brumpt, E.: Précis de parasitologie, Ed. 2, 1913, p. 249.

7. Brumpt, E.: Précis de parasitologie, p. 263.

**Disinfection and Sterilization.**—Disinfection means the destruction of the agents causing infection, i. e., the pathogenic micro-organism of disease. The difference between disinfection and sterilization is that in sterilization all the micro-organisms present on the object sterilized are destroyed, while in disinfection only those micro-organisms against which the process is instituted are destroyed.—U. S. Nav. M. Bull., January, 1920.

## THE TREATMENT OF EARLY INFANTILE PARALYSIS AS BASED ON THE PHYSIOLOGIC INDICATIONS\*

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There are two important clinical phases to every infectious disease, one the infection itself and the other the physiologic pathology. According to the trend of modern medicine, a great deal more attention is being given to the former phase than to the latter; and one is sometimes led to suppose that the use of antiserums spells the beginning and the end of the basic treatment. This is to be regretted because, in recent years, physiologic knowledge has advanced with leaps and bounds, and we ask ourselves whether the progress in treatment has kept pace with that made in the physiologic laboratories.

Infantile paralysis is perhaps a case in point; and, if we regard the early neuromuscular phases of this disease, I am led to question whether treatment as applying especially to these phases is not based more on tradition than on present medical knowledge.

Briefly recapitulating the important features in a typical case of this disease, we find that the essential lesion is the inflammation in the anterior horns of the gray matter of the spinal cord. This is accompanied by edema and pressure. As a result, the patient manifests both general and local symptoms, the latter being a failure to use certain muscles, although they are still in a good nutritive condition at the start. A certain amount of improvement may take place spontaneously. If so, it occurs early, because the pressure in the spinal cord is removed early. Then the improvement ceases, leaving a residual paralysis which is of the flaccid type.

#### USUALLY ACCEPTED METHODS OF TREATMENT

As regards the method of treatment of the early stage of this disease as carried out today, we find that, at least in this country, the procedure has resolved itself into rather definite channels. The fact that this is so is shown by the injunctions of the boards of health in various communities, such as New York, Chicago and Cleveland. In Massachusetts, the department of public health depends for its suggestions on the Harvard Infantile Paralysis Commission, and I believe I am not wrong in saying that this commission is looked on as one of the chief sources of information regarding this subject for the whole United States.

What is the procedure recommended by the Harvard Infantile Paralysis Commission? It consists chiefly in maintaining from the very start the greatest rest and fixation that might be obtained by the use of recumbency, frames and splints.<sup>1</sup> The patient is often placed on his back and strapped tight to a frame for a period of six weeks or more. This fixation, although variable in length of time, is applied in every case without regard to individual symptoms. Dr. Lovett, who is the head of the commission, states that the chief criterion of the length of this fixation treatment, or period of rest, is the state of tenderness, which he thinks is a very important sign. During the fairly

\* Read before the Academy of Medicine of Cleveland, Oct. 21, 1921.

1. Lovett, R. W.: The Treatment of Infantile Paralysis, Ed. 2. Philadelphia: P. Blakiston's Son & Co.



large epidemic which occurred in the summer of 1920 in the vicinity of Boston, I had occasion to study some of these early cases and failed to see tenderness in very many. This brings me to the chief point that I am trying to convey, namely, that I believe that the Harvard Infantile Paralysis Commission is perhaps at fault in its method of treatment, and the more so on account of the influence it has on the Massachusetts Department of Health, and on the rest of the country. I hope that it will not seem presumptuous for me to state that I, for one, am not as yet prepared to accept the dicta of the Harvard Infantile Paralysis Commission as final.

#### PHYSIOLOGIC INDICATIONS FOR TREATMENT

It seems to me that the commission loses sight of three of the most important facts which apply to the early cases. These are that (1) the muscles are still reasonably good at the beginning; (2) as a result of the diminution of pressure in and about the spinal cord a certain amount of improvement tends to take place spontaneously, and (3) this improvement takes place early. It would seem that, academically alone, these facts provide us with distinct indications as to what the basis of treatment should be.

It must be plain that the point of departure from the method of the Harvard Infantile Paralysis Commission is the early period of rest and fixation which the commission recommends. It would seem that, other things being equal, the earlier one began to activate the muscles involved in the disease, the better chance one had of obtaining improvement or restoration. If, according to the first of the facts mentioned above, the muscles are in a better state of nutrition at the onset of the disease than later, it would seem that the longer one waited, the greater resistance there would be in regaining function in the muscles. On theoretical grounds alone, it is easier to maintain power than to restore it; but on practical grounds we know that if the muscles are in a state of nonuse, even when they are not diseased, they show weakness and atrophy, which are also characteristic manifestations of degeneration. The more a muscle is used, the better its condition: behold the athlete. On a more scientific basis, it is known that the cells which are in connection with muscle fibers which are not in use show deterioration. Observers have studied these cells in necropsies in which there have been amputations for any reason whatever. Cells which originate nerve fibers going to the muscles removed in the amputation show atrophy and other changes. Consequently, one may reason that in infantile paralysis the cells of origin connected with affected muscle fibers will deteriorate, not only as a result of disease, but also as a result of disuse. But more than that, other muscle fibers not directly involved in the disease, but which are not being used on account of the contiguous paralysis of those primarily involved, also will deteriorate, and thus cause changes in their cells of origin. It would therefore seem that disuse of muscles in the early stage of infantile paralysis is directly opposed to the physiologic indications.

The second and third basic facts, that improvement tends to take place and does so early, would seem just as obvious in their significance. Some years ago, in connection with other work,<sup>2</sup> I operated on a large

series of dogs, producing mechanical lesions in their spinal cords. By this purely mechanical procedure, I succeeded in roughly reproducing the picture of infantile paralysis. After the operations, these dogs made strenuous efforts to get about as soon as possible; for dogs do not know enough to keep quiet. They could not be restrained. It would have been absurd to try to strap them on frames or to apply splints, as any one knows who has dealt with animals in their condition. With the removal of pressure in their spinal cords, many of these dogs improved quickly, and it must be obvious that this improvement could not have been demonstrated if they had not tried to get about.

But on general principles, in instituting measures which have as their object restoration of power of muscles, and knowing as we do that this restoration of power takes place early and spontaneously, should we not be guided accordingly? If we wish to take advantage of the physiologic tendencies, we should go in when the going is good; and if there is a definite time for improvement, it is at that time we can best hope to obtain it. The farmer sows his seed during the season, not when the season is over. In infantile paralysis, the time for a physician to sow his therapeutic seed is likewise at the appropriate season. This means that we must institute our measures as soon as possible.

If I state that the proper time to make muscle function in infantile paralysis is as soon as possible, I use this phrase, "as soon as possible" with great caution. I do not mean that improvement should necessarily be enforced immediately, but I do mean as soon as the individual case offers its possibilities, which may mean early and may mean later. If in an individual case immediate use of muscles brings with it no symptoms to show increased irritability, fever, spasm, etc., then one may go further; but if in another case there arise symptoms pointing to danger, then one must lessen or postpone the use of affected muscles. Go as far as possible in individual cases, and the more function there is maintained, or even restored, the easier it will be to obtain more in the contiguous muscle fibers, those bad ones which are interspersed with good ones. Every minute that the attempt to bring about use is postponed makes it more difficult to bring about restoration ultimately, because degeneration tends to proceed all the time.

Why is it that the Harvard Infantile Paralysis Commission and others abstain in the beginning from trying to maintain normal function in the affected muscles? They say that in the acute stage it is dangerous to send impulses through structures in the nervous system which are surrounded by inflamed tissues. Perhaps their point is well taken. However, the supposed danger is not so serious perhaps as the danger of the loss of time which may take place before the so-called acute stage is over. Moreover, so far as I know, there is no evidence that the sending of impulses through nerve cells or conductor mechanisms, surrounded by inflamed tissues, is going to irritate them at all. We know of no change in these structures accompanying the passage of impulses.

Here it should be stated that the affected cells fall into three classes: (1) those which are so badly altered that they go on to complete degeneration; (2) those which are only slightly affected and therefore will recuperate spontaneously, and (3) those which are intermediate. It is this intermediate class with which

2. Feiss, H. O.: Experimental Studies of Paralysis in Dogs after Mechanical Lesions in Their Spinal Cords, etc., *J. Compar. Neurol.* 22, No. 2 (April) 1912.



we are especially concerned. I believe that many of these intermediate cells, which are deteriorated not merely on account of edema and pressure, but also, as stated before, as the result of disuse of muscle fibers to which they are connected, will go on to complete recovery if they are made to function as soon as possible.

But the imperative feature that the clinician or specialist must deal with is the muscle condition. He must never lose sight of this. He knows that the muscles are good at the beginning, and he knows that they are in danger of deterioration. His object must be to prevent this deterioration.

One might go on indefinitely in this strain; but time and space are insufficient to permit me to give more than the obvious features of the problem. I do not wish to enumerate great numbers of facts or to make the subject seem too scientific. I am merely trying to present certain physiologic principles applying to the treatment of this disease. It remains for me to suggest more specific formulas for the actual handling of the cases, according to my interpretation of these principles.

#### SUGGESTIONS FOR TREATMENT

In order to restore function in a muscle, I have tried to apply function as consistent with the normal conditions of life as possible. This means not massage and electricity, which are only local in their effects, but the striving to obtain function through physiologic agencies. Broadly speaking, we have three kinds of motor function in striated muscles: (1) that willed by effort; (2) subconscious, and (3) reflex. In early infantile paralysis, it is necessary to make trial of all three kinds.

#### WILLED EFFORT

Voluntary effort is, of course, to be obtained in children who are old enough to use it. It is important, first of all, to find out definitely just exactly which motions the child is unable to make. These are the very motions to which we should apply our efforts. The child is enjoined in every possible way to make these. The idea is to get the patient to make an effort himself by interesting him in definite directions. Take, for example, a common case in which the muscles of the lower limbs are involved; we know that the most practical functions of lower limbs relative to the normal conditions of life are standing and walking. Therefore, in such a case, I have suggested that, as soon as other conditions in the case warrant it, the child be placed on its feet and encouraged to walk. In every case in which this method has been tried, when there has been any power at all, definite results have been achieved. Improvement started in at once, and the diagnosis was crystallized very quickly as to just what muscle or muscle groups were involved, in itself an important fact. As soon as this could be precisely noted, efforts had to be concentrated on these particular muscles, and the child told to make the very movements that it could not make. This is the method of voluntary effort, and it entails no formal system of exercises such as is recommended by the Harvard Infantile Paralysis Commission of Boston.

#### SUBCONSCIOUS AND REFLEX (INDUCED) MOVEMENTS

In young children, and even in those who are older, the opportunity is offered of instituting proceedings in which subconscious and reflex paths are used. This consists in establishing a so-called "receptor field," a

term borrowed from Sherrington.<sup>3</sup> There are several methods, such as tickling and stroking the skin with a camel's hair brush, or the use of other kinds of stimulation. Definite movements are at times induced which cannot be obtained by more direct methods. Thus, the child might be amused and toyed with in such a way that it will tend to make the desired movements. Each case has to be worked out for itself, and the ingenuity of nurse or mother will greatly assist the physician if he makes his point clear.

In infants and nurslings, the latter method is especially applicable, and is the more fruitful because the tissues are in a more primitive state and will recuperate more quickly than in older children. I, myself, have worked for long periods stimulating various parts or surfaces of an extremity, hoping to elicit movements, and sometimes obtaining definite results. It is not possible in any case to establish a definite receptor field which is constant with that particular case, but once a path is opened through any given receptor field, that movement may be gained by several other methods of stimulation.

To give examples of various procedures which were worked out in individual cases, I recall one 4 months old baby that refused to move its left arm. Distinct results were obtained by putting the baby at the breast of the mother and restraining the contralateral arm. Either reflexly or through subconscious paths, the baby soon learned to grasp the breast of the mother with the arm in question. I recall another case in which the child refused to flex its one hip. No motion could be obtained in this direction until the mother once happened to hold the child to the floor so that the feet touched it, and the child made stepping motions at once. In several older children that had been treated by rest and fixation, these methods were abandoned, and the children were placed on their feet. At first, they lost their balance and tended to fall. This was probably due to weakness and disuse. Later, they began to walk limpingly, and finally even the limp disappeared.

I have simply suggested procedures; however, it is not only important that these be applied as soon as possible, but also that they be applied strenuously and continuously. For a physician merely to examine a case and leave orders pertaining to it is not sufficient. He, himself, must be there each day until he feels satisfied that the mother (or nurse) understands what he is trying to gain. With his continual suggestions, help and encouragement, the mother will set to work on the child and will soon learn through natural intuition what steps to take. Indeed, it is surprising to note her enthusiasm when she once beholds an improvement.

I have had occasion to see about twenty cases of early infantile paralysis in the local mild epidemic which occurred last summer in Cleveland. In most of these, I was given the opportunity either to make suggestions or to order the treatment of the case. I will not say that the results were marvelous, but I will say that they were very encouraging and in some cases even startling, especially when treatment was instituted early and strenuously.

But I do not wish to discuss results as such, as I hope to have another occasion to report cases in detail. What I have attempted is to present what I believe are the physiologic indications for treatment. I have tried

3. Sherrington: *The Integrative Action of the Nervous System*, New York: Charles Scribner's Sons, 1906.



to show that we have to do with a condition which is at least partly due to pressure, and all will realize that there will never be an antitoxin or a serum which will be able to combat the mechanical effects of this pressure. As it clears up, improvement sets in spontaneously. It is just then that one must take advantage of the opportunity offered, remembering also that in this disease it is not merely a question of making muscles function: it is especially a question of making them function through the central nervous system.

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## OPTIC NEURITIS IN SERUM SICKNESS

V. R. MASON, M.D.

LOS ANGELES

The syndrome that follows the introduction of a foreign protein into the veins or subcutaneous tissues of a susceptible individual has been described by various authors under the heading of "serum sickness." These symptoms are usually of short duration and include fever, malaise, urticaria, arthralgia and occasionally slight general glandular enlargement. In the more severe instances of the disease there may be marked albuminuria and cylindruria, and the patient may lie in a semicomatose condition for days or even weeks. The case report which appears in full below is of interest as an example of severe serum sickness in which certain abnormalities were discovered which pointed to involvement of the central nervous system in the reaction of the organism to a foreign serum.

### REPORT OF CASE

J. W., a white man, aged 25, admitted to the Johns Hopkins Hospital, Nov. 23, 1920, complained of "feeling bad all over." His previous history was unimportant. The present illness began during the week of November 15, when he contracted a cold in the head. Sunday evening, November 21, he felt chilly but was able to return to work Monday morning. At noon, however, while at luncheon, he had a severe chill and was taken home. He soon developed sharp, sticking pains in both sides of the chest. He felt short of breath and coughed frequently. The sputum was yellow and contained some fresh blood. On Tuesday, November 23, he became more ill and was brought to the hospital for treatment.

On admission the patient appeared well nourished, but was obviously very ill. The face was flushed and the lips and finger-tips were cyanotic. There was a frequent, hacking cough productive of tenacious, blood-streaked sputum. His temperature was 104. The respirations were 28 to the minute and evidently painful. There was a slight mucopurulent discharge from a perforation of the left ear drum. There were signs of pneumonic consolidation of the lower lobe of each lung. A leathery friction rub was present in the right axilla.

The erythrocyte count was normal. There were 36,800 leukocytes per cubic millimeter, of which 88 per cent. were polymorphonuclears. The Wassermann reaction was negative

with the serum. A blood culture remained sterile, but the sputum contained Type I pneumococci in large numbers. Serum treatment was instituted at once. November 24, the third day of the disease, the patient received 200 c.c. of Type I antipneumococcus serum intravenously, and 100 c.c. on each of the three succeeding days. Thus, he received in all 500 c.c. of serum during the third, fourth, fifth and sixth days of the disease.

His temperature, which had remained near 104 F. since admission, dropped rather abruptly to 100 on the seventh day and the patient's condition was much improved. He remained practically fever free during the eighth and ninth days of the disease. On the eleventh day, however, his temperature again reached 104, and a marked general urticarial rash made its appearance. During the next two weeks his temperature remained elevated, and the rash alternately faded and reappeared. Slight general edema was constantly present, especially marked about the face and eyes. The urine was free from albumin and casts on repeated examinations. The patient was very ill and quite drowsy, although there were signs of resolution at both lung bases. December 7, the leukocyte count was 38,720. Three days later the patient was very dull and hard to arouse. Ophthalmoscopic examination of the fundi revealed edematous retinas, with hyperemia and swelling of both disks. The margins of the disks were practically obliterated, and the cupping was absent. The veins were somewhat distended, but the arteries

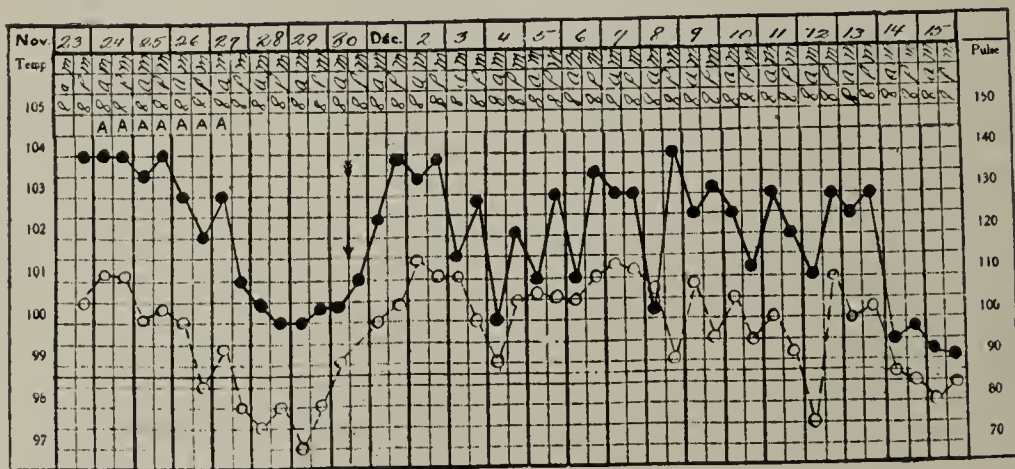
were normal. The possibility that the alterations of the disks were the result of increased intracranial pressure was considered, and a lumbar puncture was made. The cerebrospinal fluid was clear but under increased pressure. (It was not measured by manometer). The test for globulin was strongly positive. There were 15 lymphocytes per cubic millimeter. The colloidal gold curve was 5444321000. The Wassermann test was negative.

The fundi oculorum were examined by Dr. A. C. Woods, Dec. 15, 1920, who found on both sides a well marked optic neuritis with at least 1 diopter of elevation of the disks. The disk margins were blurred, the cups were filled, and the veins were considerably distended. A small hemorrhage was present along the superior branch of the left temporal vein. The disks were pale. A pin-point exudation was present just below the right fovea. Both fundi were pale and had a peculiar yellow tint which was more marked peripherally, where there was moderate choroidal blurring.

The patient's condition improved rapidly, and on December 15, the fifteenth day after the onset of serum sickness, his temperature reached normal. Convalescence was uneventful. The fundi were examined at frequent intervals from Dec. 10, 1920, to March 10, 1921. No abnormalities in the visual fields and no diminution of visual acuity were observed. The fundi gradually returned to normal in appearance, except for very slight blurring of the margins of the disks and some obliteration of the cups by new connective tissue.

### SUMMARY

The patient was admitted to the hospital on the second day after the onset of acute lobar pneumonia. Type I pneumococci were grown from washed sputum. During the third, fourth, fifth and sixth days of the disease the patient received 500 c.c. of Type I antipneumococcus serum intravenously. His temperature fell by crisis on the seventh day of the disease. Severe serum sickness appeared on the ninth day, and was present for fourteen days. During the course of the serum disease a well marked, bilateral optic neuritis was observed. This was associated with marked



Solid line, temperature; broken line, pulse. On the days marked A the patient received antipneumococcus serum. The arrow indicates the beginning of serum sickness.



lethargy and an increase of the globulin and cellular content of the cerebrospinal fluid. The optic neuritis was not associated with demonstrable visual disturbances. At the end of three months the fundi had returned to normal in appearance.

## COMMENT

Since it is desirable to establish with certainty, if possible, the causal relationship between the serum sickness and the optic neuritis with the associated changes in the cerebrospinal fluid, a careful search of medical literature was made for similar cases but none were found. It was necessary, therefore, to wait until an opportunity was presented to examine the fundi of other patients with serum disease. The first patient was a child with epidemic cerebrospinal meningitis. The fundi were normal during the course of the disease. He was treated by intraspinal injections of antimeningococcus serum and recovered promptly. During the course of the subsequent serum sickness he developed a mild, bilateral optic neuritis without visual disturbances. The fundi soon returned to normal. The second patient was a colored woman, aged 38, who was admitted to the hospital with acute lobar pneumonia following delivery. The infecting organism was a Type I pneumococcus. She was given 300 c.c. of Type I antipneumococcus serum. Her fundi were observed daily during her illness. At the height of the serum sickness which followed treatment she developed ophthalmoscopic signs of a mild optic neuritis. The cerebrospinal fluid contained 12 cells per cubic millimeter and a heavy trace of globulin. She succumbed to a secondary infection of the lungs with hemolytic streptococci before the optic neuritis had disappeared.

These three cases are believed to represent reactions on the part of the nervous system to the parenteral introduction of foreign protein into a susceptible individual. Since in each instance the urine was normal or contained only slight traces of albumin, it is improbable that the optic neuritis was dependent on renal impairment. It is also improbable that it was produced as a result of the general infection. Uthoff<sup>1</sup> studied the records of 253 instances of optic neuritis during acute and chronic general infections, but encountered none that followed acute lobar pneumonia. Moreover, in the rare, recorded instances of optic neuritis subsequent to acute lobar pneumonia, permanent visual changes have resulted. The evidence at hand, therefore, favors the assumption that optic neuritis, combined with an increase of the cellular and globulin content of the cerebrospinal fluid, may occur as the result of the introduction of a foreign protein into a sensitive individual. It is possible, furthermore, that in some cases optic neuritis might be the only symptom of hypersusceptibility to a food or other protein.

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1. Uthoff, quoted from Wildbrand and Saenger: *Die Neurologie des Auges*, Wiesbaden 5: 280.

**Importance of Hygiene in Cure of Gonorrhea.**—Proper hygiene is as essential to the cure of gonorrhea as is proper treatment. The social worker must influence the patient to abstain from drinking alcoholic beverages, from eating highly seasoned food, from indulging in sexual intercourse, and from exposing himself to exhausting experiences. The necessity for observing the rules of hygiene is impressed upon the patient by the physician, but the social worker can give more time to this educational work than can be allotted to it in a clinic or a busy office.—A. J. Casselman, *Public Health Rep.* 36:856 (April 22) 1921.

MEDICOLEGAL APPLICATION OF THE  
BLOOD GROUP

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It has been stated that the blood group offers criteria of value as a means for identification in certain instances and for the fixation of the responsibility of parentage in others. My investigations have shown this belief to be incorrect.

Because of the accumulated data concerning the hereditary nature of the blood group, its use in medical jurisprudence as a means of determining the parentage of supposedly illegitimate children has been advocated by Ottenberg. In 1908, Ottenberg<sup>1</sup> wrote:

The coincidence of a brother and sister, whose bloods were examined, belonging to the same agglutination group, led the authors to inquire whether this blood characteristic, which from the work of Hektoen and Gay seems to be a permanent characteristic of the individual, is hereditary. Hektoen tested a family and found that the mother and three of the children belonged to Group I, the remaining child to Group II. The authors tested two families. In the one the mother and seven children were all found to belong to Group II; the father could not be examined. In another family, mother, father and four children all belonged to Group III. It is probably a coincidence that the father and mother were of the same group, but possibly a matter of heredity that the children were.

Before any definite conclusions can be reached on this point, a great deal of careful work must be done, and the authors hope to present further studies later on. It seems, however, from the sharply opposed nature of these blood characteristics, that if they are inherited at all, they will form a very good example of the mendelian law of heredity.

Ottenberg,<sup>2</sup> in his paper of 1921 says: "In 1908 I noticed that the groupings were hereditary, and followed Mendel's law." The data presented in the first paper can only be interpreted as creating a suspicion, and the closing sentence would indicate that at that time the author considered it only a possibility.

The specific substance on which the agglutinating power of human serum depends has been designated agglutinin. The agglutinability of the red blood cells has been attributed to the presence of a specific substance called agglutigen. Von Dungern and Hirschfeld<sup>3</sup> accepted the hypothesis of Landsteiner<sup>4</sup> that the blood group depends on the presence of two agglutinins, *a* and *b*, and two agglutinogens, *A* and *B*. In 1910, these authors presented data from a study of seventy-two families as proof of the mendelian transmission of the specific substances governing the grouping of blood. The families were grouped through two generations, but no explanation was made to account for the appearance of groups not represented by either parent. The schedule arranged by Mendel in establishing his two laws was not followed, nor would it be possible to arrange such a scheme in the study of matings in man. The second filial generation, in which the phenomena of Mendel are shown, is obtained by mating

1. Ottenberg, R., and Epstein, L.: Discussion, *Tr. New York Path. Soc.* 8: 120, 1908.

2. Ottenberg, Reuben: *Medicolegal Application of Human Blood Grouping*, J. A. M. A. 77: 682-683 (Aug. 27) 1921.

3. Von Dungern, E., and Hirschfeld, D. L.: Ueber vererbung gruppenpezifischer Strukturen des Blutes, *Ztschr. f. Immunitätsforsch. exper. Therap., Orig.* 6: 284-292, 1910.

4. Landsteiner, K.: Ueber Agglutinationserscheinungen normalen menschlichen Blutes, *Wien. klin. Wchnschr.* 14: 1132-1134, 1901.



the hybrids which are the offspring of the same parents. From this procedure the approximate ratio of 3 to 1 was determined. In order to approach this numerically in the study of blood grouping, von Dungern and Hirschfeld would have had to group 144 parents and 288 children, or 432 persons in all. Three hundred and forty-eight persons, however, were actually grouped. Moreover, it was concluded that certain agglutinins were dominant and others recessive. In human matings there is no direct way to determine exactly the qualities of dominance and recessiveness. In defining these words, Mendel<sup>5</sup> said:

Those characters which are transmitted entire, or almost unchanged in the hybridization, and therefore in themselves constitute the characters of the hybrid, are termed the dominant, and those which become latent in the process, recessive. The expression "recessive" has been chosen because the characters thereby designated withdraw or entirely disappear in the hybrid, but nevertheless reappear unchanged in their progeny.

The intermediate stage, or hybrid stage, does not appear objectively in man, as the crossing of two

germinal tissues, that is, ovaries and testes, to transmit another group to his children.

By a study of dormant and evident characters it may be possible by a reverse analysis to determine dominance and recessiveness in man. It is a definitely established fact that a character that is once shown to be dominant is always dominant. It appears from the families in this study that in crossing Group II and Group IV the ratio of 3 to 1 is approximated (Fig. 3), with Group II behaving similarly to the dominant character in plants and animals. I have found no instance in which Group IV parents bore Group II children. If this is the rule, Group II is dominant to Group IV, and Group II/Group IV would never appear as an expression of the heterozygous principle (Figs. 4 and 5). To prove this point, many families must be studied through three generations, and the same methods will have to be applied to the other groups, and to the various combinations. This will require the combined efforts of many investigators because of the difficulty of finding the rarer combinations and the scarcity of families which are satisfactory for study.

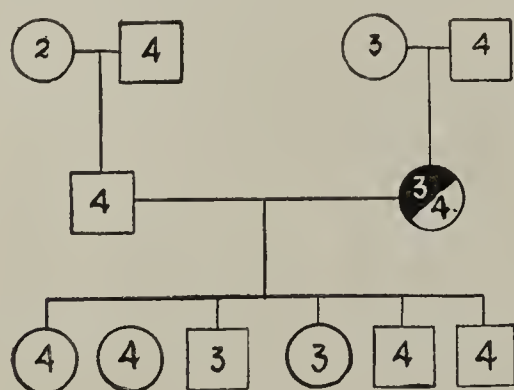


Fig. 1.—Groups capable of being carried through three generations because of the heterozygous nature of the mother of the second generation.

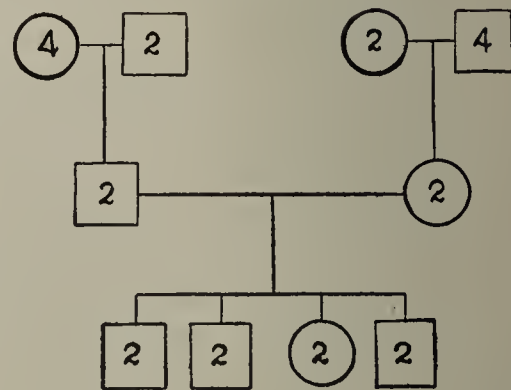
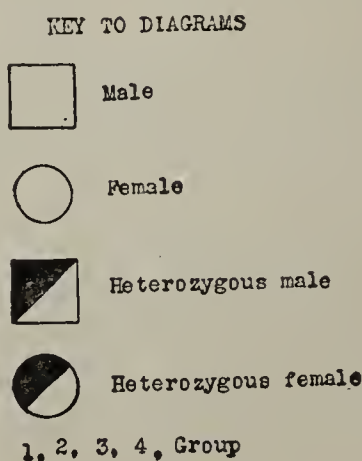


Fig. 2.—The segregation of homozygous parents in the second generation, as demonstrated by their children all belonging to the same group.

inheritable, but different characters results in the appearance in the immediate offspring of the segregation of the characters concerned, and thereby necessitates the use of substitutes for the words "dominant" and "recessive" in connection with human heredity. The expressions "dormant" and "evident" are more exact when applied to the hereditary characters of man.

One of the most fundamental features of Mendel's experiments was the demonstration of the heterozygous nature of plants. A heterozygote presents objectively a particular character, but has the capacity through its germ plasma of transmitting the character which was evident in a previous generation. The heterozygous type occurs in man, and corresponds genetically with the hybrid of Mendel. The heterozygote (Fig. 1) in man cannot be determined until the individual is crossed and the offspring of this union are studied, whereas the character of the hybrid in plants, of which the plant heterozygote is an identical reduplication, can be determined by inspection when the parental characters are known. The homozygous (Fig. 2) and heterozygous (Fig. 1) nature of man are clearly demonstrated by matings when both parents and at least three, and preferably four, children are studied. It must be kept clearly in mind that a person may be classified in a certain blood group, but because of his heterozygous nature, he has the ability, through his

The data of von Dungern and Hirschfeld with regard to the inheritance of the specific substances for blood group were accepted by Ottenberg, and from it he hypothesized the accompanying table.

HEREDITARY CONSTITUTION OF RED CELLS OF THE FOUR GROUPS OF HUMAN BLOOD (FROM OTTENBERG)

Group I									
NA	NA								
NB	NB								
Group II									
	1	2							
A	A	na							
NB	NB	NB							
Pure		Hybrid							
Group III									
	1	2							
NA	NA	NA							
B	B	nb							
Pure		Hybrid							
Group IV									
	1	2	3	4					
A	A	A	A	A	A	na			
B	B	B	nb	nb	B	nb	nb		
Pure		Partial	hybrid	Partial	hybrid	Full	hybrid		

Ottenberg's formulas are entirely without evidence of support. Moreover, there is no entity known in the science of heredity comparable to a "partial hybrid." A hybrid is always a hybrid, and is never either partial or full. The hybrid represents the first product of a mating in which unlike characters are crossed. Moss<sup>6</sup>

5. Mendel, G. J.: Versuche über Pflanzen-Hybriden, Verhandl. Naturf. Ver. in Brunn 1:1, 1865.

6. Moss, W. L.: Studies on Iso-Agglutinins and Isohemolysins, Tr. A. Am. Phys. 24: 419-437, 1909.



demonstrated, in 1909, that three agglutinins and agglutinogens are necessary to permit the existence of four blood groups. The work of Moss remains uncontradicted. The actual or hypothetic composition of an hereditary character has never been worked out, so it is quite outside the question to try to designate the number of agglutinin and agglutigen units possible in any blood group.

presented at this time as illustrate the principles involved in the medicolegal application of the blood group. A review of the family pedigrees for blood groups shows distinctly that the group in the children is limited only by the groups represented in their ancestors. Blood groups occur in either a homozygous or a heterozygous state; if the former the children are all of the same group as the parents (Fig. 2), and if the

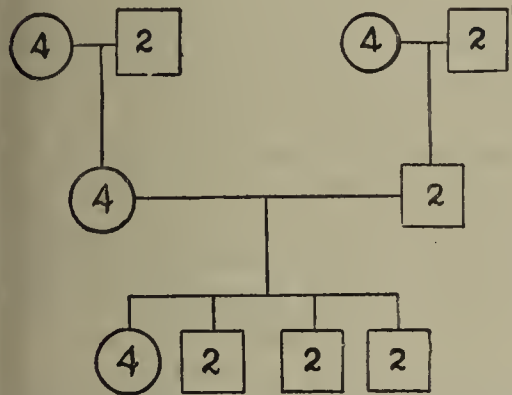


Fig. 3.—The 3 to 1 ratio of Mendel, as a result of breeding a supposed pure Group IV with a pure Group II.

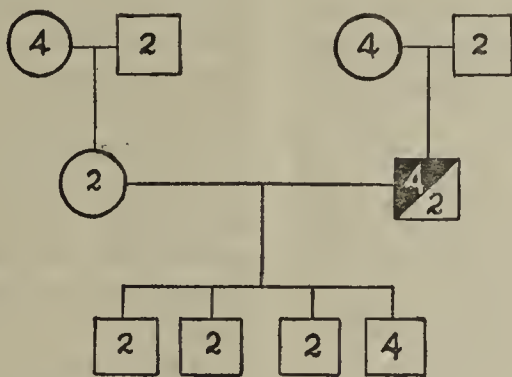


Fig. 4.—Groups capable of being carried through three generations because of heterozygous nature of the father in second generation.

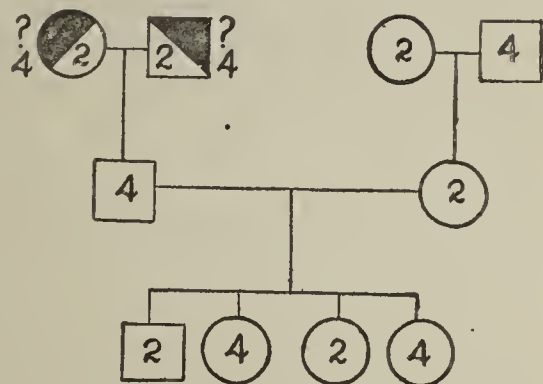


Fig. 5.—The difficulty that would arise in certain families even if the three generation scheme were accepted as absolute.

In my investigation of the inheritance of the blood group I have discarded the use of *a* and *b*, and *A* and *B*. Each blood group is supposed to be representative of the biologic qualities expressed in tallness, shortness, color in flowers, shape in peas, and so forth. The actual properties which govern these characters are unknown. This is a fundamental hypothesis in attempting to prove that a character is hereditary or that it is not hereditary. The actual problem is, then, whether or not the blood group of the parents will be present in the children. By the presence or absence of the transmission of these characters it is possible to demonstrate whether or not the problem is governed by the laws of heredity.

The frequency with which a blood group appears in the children although not present in either parent has led some investigators to believe that there were other

factors, the groups present in the grandparents will reappear (Fig. 1). Ottenberg's data (Table 3) are incorrect so far as the strict delimitation of grouping in the offspring is concerned (Figs. 7 and 8). It likewise follows that the data presented in Table 4 by the same author are incorrect, and would be capable of great mischief if utilized in the adjustment of certain cases.

The danger in the medicolegal application of the idea that the blood group of the child must be evident in the parents is clearly shown in Figure 8. If during the course of divorce proceedings or a will contest the question of legitimacy had arisen in the family there represented and the blood group had been utilized as a determining criterion,

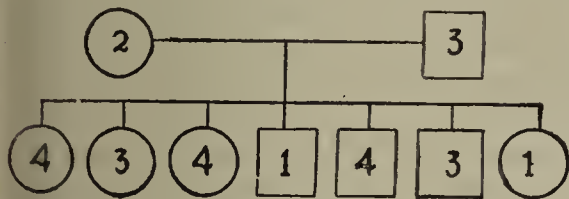


Fig. 6.—A frequent observation when grouping through two generations, and the reason for most careful investigation in the attempt to use the blood group as evidence in judicial adjustments.

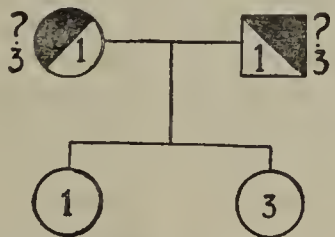


Fig. 7.—The possibility for Group I to appear as an expression of the heterozygous principle.

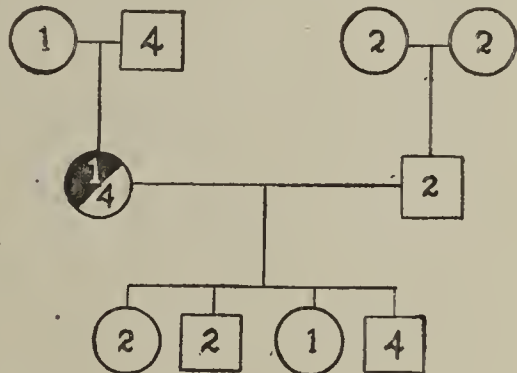


Fig. 8.—Demonstrating the possibility that Group I may appear as the dormant character, and the possibilities for the miscarriage of justice if the blood group were used as a criterion of parentage.

factors involved in the production of the group than heredity. It has been supposed that the blood groups not represented in either parent have been produced by a union of the hypothetic agglutinins and agglutinogens; for instance, Group IV has been considered the result of the union of the constituents of Groups II and III. The only way this problem can be clarified is by a review of at least three generations, consisting of four grandparents, two parents, and at least three, and preferably four, children in the third generation. The sine qua non in proving the mendelian segregation of characters rests in the knowledge of the characters involved in the matings.

There was no question as to the parentage in any of the families studied, and only such families are

the daughter in Group I would have been held as illegitimate because she was unfortunate in conforming to the first and fundamental law of heredity whereby there had appeared in her make-up a characteristic that was present in her maternal grandmother. The same situation exists in Figure 1.

The only instances in which it appears that the blood group could be held as direct evidence would be in a family of four or more children of whom one was of a different group than the evident group represented in both parents and all four grandparents. The difficulties encountered in the search to explain the origin of all groups is shown in Figure 5. It should be kept clearly in mind that a grandparent might be a heterozygote in virtue of which she might transmit a character to a son



or daughter, who in turn might be a heterozygote, and finally in the family at issue the long concealed character or group might appear. If this possibility is kept in mind, one can clearly visualize the danger that might arise from the acceptance of Ottenberg's statement that, "If the child's group is wrong for the two asserted parents, then one can say with absolute certainty that the child must have a parent other than one of those asserted."

It is to be hoped that no court will ever utilize a means of adjusting a dispute that is surrounded with such possibilities of leading to the miscarriage of justice.

## INTRAVENOUS INJECTIONS OF GLUCOSE IN TOXEMIA OF PREGNANCY

A CLINICAL, PATHOLOGIC AND CHEMICAL STUDY,  
WITH DEDUCTIONS REGARDING THE  
PROGNOSTIC SIGNIFICANCE OF  
GLYCEMIA CURVES \*

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AND  
M. H. GIVENS, PH.D.  
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In a previous paper,<sup>1</sup> which dealt with the rôle of carbohydrates in the treatment of toxemias of early pregnancy, we advocated the use of glucose by intravenous injection for patients suffering from serious toxemia at any time during pregnancy. A preliminary report was also made of certain biochemical studies by which we had endeavored to devise a test of the glycogen storage function of the liver in the presence of toxemia. The purpose of this test was to determine, if possible, the physiologic activity of the liver under varying circumstances, hoping thereby to obtain an idea as to the extent of pathologic change which had been produced in the liver by any existing toxemia. This work also aimed to establish a physiologic basis for the successful results obtained in the treatment of toxemia by the more or less empiric use of carbohydrates.

It is desired at this time to detail the results of the investigations along these lines, as well as to outline the technic of the tests by which we believe that a fairly definite prognosis may be made in any given case of toxemia of pregnancy, whether it be one of pernicious vomiting, preeclamptic toxemia, or eclampsia.

### REVIEW OF FIRST PAPER

The first paper was concerned with a study of the toxemias of early pregnancy because the material is plentiful and because there is a problematic relationship between the mild toxemias occurring so commonly during the early months and those which are more profound. Empirically, a course of treatment was developed for vomiting of pregnancy, the success of which seemed to depend on the use of carbohydrates in large amounts. This treatment was applicable to serious as well as to mild toxemias of early pregnancy, the only difference being that the more severe the toxemia the more rigidly the treatment had to be pushed. It was

in the treatment of cases of marked vomiting of early pregnancy that we first advocated the intravenous injection of glucose. Our results led us to assume that a deficiency in carbohydrates has an important bearing on the origin and progress of toxemia of pregnancy.

The explanation of this "carbohydrate deficiency theory" is briefly as follows: The liver is the carbohydrate storing organ of the body, its cells being filled with glycogen, and a carbohydrate deficiency in the maternal organism causes a glycogen depletion of the liver. Such a deficiency of carbohydrates during pregnancy may be of twofold origin: (1) There is an unexpected demand for glycogen on the part of the fetus, as shown by Slemmons<sup>2</sup> and others, and to a lesser degree by the rapid hypertrophy of the uterus, this being a relative deficiency, and (2) an actual deficiency augmented in the presence of nausea and vomiting, from lessened carbohydrate intake as the result of an improperly balanced diet. All degrees of variation in this are possible at any time during pregnancy.

Reference was made in the first paper to the experimental evidence which shows that liver function is impaired, especially in its detoxicating property, and the body flooded with toxins after carbohydrate starvation. To express it differently, it may be said that poisons are more than ordinarily toxic to an animal which has been fed a diet low in carbohydrates. It is of interest also that the toxic effect of any poison is markedly diminished if given simultaneously with a dose of glucose, and furthermore, as shown by Davis, Hall and Whipple,<sup>3</sup> that pathologic changes produced in the livers of dogs by nearly fatal doses of poisons can be made to disappear with extraordinary rapidity by the mere ingestion of carbohydrate food. In this connection, the familiar fact may be adduced that chloroform and certain other chemical poisons produce pathologic changes in the liver similar to those of fatal toxemias of pregnancy, and, indeed, that a simple starvation causes central necrosis of the liver lobules.

Regulation of the diet so that there is a preponderance of carbohydrates, and an avoidance of more than short intervals of fasting by eating frequently, will control mild and even moderately severe cases of nausea and vomiting. This increased carbohydrate intake may be augmented by giving the patient glucose solution by mouth and by bowel.

In the more seriously toxic patients, the intravenous injection of glucose solution gave striking results, and in the first paper our methods of treating these patients were outlined in detail.

A series of seventy-six cases was reported, of which number fifteen were of the most serious type of pernicious vomiting of pregnancy with emaciation, jaundice, albuminuria, etc. Since that time sixty-eight more have been thus treated, among whom were eleven who could be classed as cases of pernicious or "intractable" vomiting of pregnancy. It was necessary to perform a therapeutic abortion twice in the entire series of 144 cases, and one of these was a fatal case. It is doubtful that the latter was actually a case of vomiting of pregnancy, since the clinical course of this patient's progress toward death was more typical of acute yellow atrophy of the liver.

\*Read before the Buffalo Academy of Medicine, Oct. 19, 1921.

\*From the Department of Obstetrics, and the Research Laboratories of the Western Pennsylvania Hospital.

1. Titus, Paul; Hoffmann, G. L., and Givens, M. H.: The Rôle of Carbohydrates in the Treatment of Toxemias of Pregnancy, J. A. M. A. 74: 777 (March 20) 1920.

2. Slemmons, J. M.: The Nutrition of the Fetus. Am. J. Obst. 80: 194 (Aug.) 1919.

3. Davis, N. C.; Hall, C. C., and Whipple, G. H.: The Rapid Construction of Liver Cell Protein on a Strict Carbohydrate Diet Contrasted with Fasting: Mechanism of Protein Sparing Action of Carbohydrate, Paper III, Arch. Int. Med. 23: 689 (June) 1919.



Duncan and Harding<sup>4</sup> have also reported a series of seventy cases of nausea and vomiting successfully treated by carbohydrate feeding. Their work and ours was done independently over what must have been about the same period of time, and the fact that two groups of investigators obtained common results and formulated similar theories merely adds to the force of the argument. Their publication antedates ours, and while we were the first to recommend the intravenous administration of glucose for profound toxemia of pregnancy, at the same time differing from them slightly in certain technical points, they announced the theory of glycogen deficiency in the maternal liver as an immediate cause of toxemia of early pregnancy in almost the exact terms which we should have liked to be the first to use. Harding<sup>5</sup> has recently reported 200 additional cases of nausea and vomiting of early pregnancy, in almost all of which the patients were promptly relieved by carbohydrate feeding.

#### APPLICATION OF THE CARBOHYDRATE DEFICIENCY THEORY TO TOXEMIAS OF LATE PREGNANCY

The success obtained with these methods of treatment in the toxemias of early pregnancy, and the striking results which followed the intravenous injections of glucose in those patients who were more seriously ill, impelled us to use the latter measure in the cases of eclampsia which came to this clinic. Proceeding cautiously, the intravenous dose of glucose was increased from 15 or 25 gm. in from 250 to 300 c.c. of water, to from 50 to 75 gm. in the same volume.

In order to make clear our point of view toward eclampsia, it seems desirable to outline briefly the general plan of treatment and the results obtained in this clinic. The "conservative," or "Stroganoff," or "Rotunda" method, as it has been variously named, has been followed for the last seven or eight years. This consists of the use of morphin to control the convulsions, gastric lavage, purges introduced through the stomach tube, copious colonic irrigations, bleeding in a certain minority of the cases, and interference with the pregnancy only when the patient's immediate condition was improved, or the fetus could be delivered without undue shock to the mother. Under no circumstances was emptying of the uterus per se considered the primary and essential thing to be undertaken or accomplished.

Beginning in 1919, twenty eclamptic women in all have been given intravenous injections of glucose in addition to the course of treatment outlined above. Among them there have been three deaths, a mortality of 15 per cent. The death rate in this clinic from eclampsia up to the time we instituted the intravenous use of glucose without any other change in our routine treatment was practically twice as great, being 28.9 per cent.

#### PATHOLOGY OF TOXEMIA

As pointed out in the first communication, there have been innumerable ingenious theories advanced to explain the origin or source of the various toxemias of pregnancy. The present paper is more concerned with the physiology of toxemia, or, as it might be called, its mechanism, than with its actual origin. On that account, it may be conceded for the time being that any one or any combination of these theories may be

involved, whether it be the idea that toxemia is of gastro-intestinal origin, the result of disturbances in the glands of internal secretion, or of fetal origin.

We maintain, however, that the pathologic progress of toxemia is dependent on a carbohydrate deficiency in the maternal organism, particularly in respect to the impairment of physiologic activity of the liver when unduly depleted of glycogen. It is indisputable, whatever the actual source of the toxins of pregnancy, that the liver and its functions play an important part in the patient's ability or inability to recover. This is readily confirmed both clinically and pathologically, and, indeed, the distinctive pathology of certain necrotic lesions in the liver has been considered pathognomonic of various types of toxemia of pregnancy. Williams<sup>6</sup> says, for instance, that peripheral necrosis of the liver lobules is the lesion to be found in fatal cases of eclampsia, whereas central necrosis is to be expected of acute yellow atrophy of the liver and pernicious vomiting of pregnancy. The entire distinctiveness of these lesions has been open to some question in that there seems to be considerable diversity of opinion among such writers as De Lee, Hirst, Bumm, Berkeley and Bonney, and others regarding the pathology of eclampsia. Certain of our specimens from fatal cases of eclampsia have shown a predominance of peripheral degeneration, but central lobular changes also are clearly evident. The reverse is true of specimens from cases of vomiting of pregnancy in that the central necrosis is accompanied by a certain amount of peripheral degeneration of the lobules. This may be due entirely to relational differences between specimens; but, be that as it may, it is quite natural in any toxemia to expect both clinical and pathologic involvement of what is known to be the great detoxicating organ of the body. As a matter of fact, pathologic changes are evident in the liver lobules after a lethal dose of almost every poison whether it be organic or metallic.

It is not intended to lose sight of the disturbances in kidney function which are almost invariable in eclampsia and, to a lesser degree, in other toxemias of pregnancy, but it is possible that they may be incidental to the action of these toxins as they are in practically all cases of poisoning of any nature. For example, nephritis occurs in the course of scarlet fever or pneumonia or after mercuric chlorid poisoning as readily and as definitely as in hyperemesis gravidarum.

#### INTRAVENOUS INJECTION OF GLUCOSE AS A THERAPEUTIC MEASURE

Clinically, the intravenous injection of glucose is a valuable therapeutic measure in toxemia of pregnancy. Theoretically, there is no reason why it should not be of value in the various toxemias not related to pregnancy; and while its use in septicemia, pneumonia, thyrotoxicosis, etc., has been noted, there seems to be no reference to work similar to this of ours. It is true that glucose has been administered by rectum and by mouth in a haphazard sort of way for various of these pregnancy toxemias, but we believe that its therapeutic importance has not been properly recognized, nor has its prompt action and beneficial effect when administered intravenously been appreciated.

Glucose, especially when thus injected, serves rapidly to restore the depleted and damaged liver cells, being stored as glycogen. The liver is thus fortified and aided in its fight against the toxins of pregnancy. The

4. Duncan, J. W., and Harding, V. J.: A Report on the Effect of High Carbohydrate Feeding on the Nausea and Vomiting of Pregnancy, *Canadian M. A. J.* 7: 1057 (Dec.) 1918.

5. Harding, V. J.: Nausea and Vomiting in Pregnancy, *Lancet*, 201: 327 (Aug. 13) 1921.

6. Williams, J. W.: *Obstetrics*, Ed. 4, New York, D. Appleton & Co., 1919, pp. 551-585.



glucose acts as diuretic, and possibly furnishes some glycogen directly to the general as well as cardiac musculature.

In support of our contention that the damaged liver cells are restored to a marked degree by this therapeutic measure, photomicrographs of sections of liver from certain of our fatal cases are reproduced herewith. As a control, a section from an untreated case of eclampsia has also been photographed and is given. It will be seen that the liver tissue from those patients who received glucose intravenously shows far less pathologic change than is ordinarily to be demonstrated, the

trate: A healthy adult human of 75 kilograms, or 165 pounds, body weight, will possess a liver weighing approximately 1,700 gm. A suitable chloroform anesthesia during a fasting period will destroy one half or more of this liver tissue, perhaps 800 gm. Under favorable circumstances complete repair can be effected in from seven to nine days . . . approximately 100 gm. per day, and might well exceed 150 gm. Formation of new tissue at the rate of 100 to 150 gm. per day means the construction of a mass of liver cells the size of the normal spleen or kidney every twenty-four hours. This speed of growth on the part of a

GLYCEMIA CURVE ESTIMATIONS

Case	Hosp. No.	Age	Grav.	Bl. P. S—D	Urine		Glucose In- jected, Gm.	Blood Sugar (Mg. per 100 C.c.)					Difference Between Bl. 2 and 3	Comment	Result
					Alb.	Casts		1 Blood	2 Blood	3 Blood	4 Blood	5 Blood			
Normal Controls															
1	K 2705	36	9	148-100	tr.	+	24.7	190	308	225	128	106	73	Trace albumin accounted for by fact urine voided, not catheter specimens in all normal controls	
2	P 2519	17	1	106-58	tr.	—	24.7	93	250	156	...	...	94		
3	C 2914	19	1	95-70	tr.	—	25.0	113	241	135	94	76	106		
4	F 2825	18	1	110-70	tr.	—	25.0	100	224	135	72	87	89		
5	G 3043	24	1	128-84	+	+	25.0	83	208	140	89	83	68		
6	W 2686	21	3	110-74	tr.	—	25.0	80	171	98	76	72	73		
7	L 3013	20	1	110-78	tr.	—	25.0	89	185	113	81	88	72		
Chorea															
8	S 10738	..	2	.....	+	+	23.0	66	238	157	117	...	81	Induction of labor	Recovered
	S 10738	..	..	.....	+	—	20.0	90	185	132	101	116	53	Glucose injection repeated after recovery for control	
9	S 5870	20	1	138-88	+	+	42.0	67	314	187	111	93	127	Induction of labor	Recovered
Toxemia with Premature Separation of Placenta															
10	B 4744	38	6	108-60	+++	+++	15.0	181	283	212	141	150	71	Hysterectomy	Recovered
Hydatidiform Mole with Preeclamptic Toxemia															
11	R 7873	16	1	182-110	++	++	75.0	51	385	237	69	...	148	Marked toxemia	Recovered
Preeclamptic Toxemia															
12	C 3478	25	1	236-180	++	++	25.0	103	210	133	105	90	77	Induction of labor	Recovered
13	G 5504	28	7	170-124	++	++	25.0	143	348	235	140	111	113	Induction of labor	Recovered
14	D 5599	38	3	176-90	++	++	25.0	71	160	100	63	62	60	Induction of labor	Recovered
15	M 8769	32	6	204-110	++	++	60.0	81	333	247	154	132	86	Induction of labor	Recovered
Pernicious Vomiting															
16	H 3085	..	..	128-80	+	+	25.0	108	333	238	153	122	95	Jaundice, acidosis, etc.	Recovered
	H 3085	..	..	.....	..	..	25.0	109	278	193	97	93	85	Glucose injection repeated after recovery for control	
17	O —	..	1	.....	..	..	30.0	100	345	235	118	132	110	Jaundice, acidosis, etc.	Recovered
18	D 5649	29	2	120-90	+	+	30.0	125	351	250	165	147	101	Acute yellow atrophy of liver	Died
19	M 2235	..	2	98-68	+	+	75.0	121	607	527	345	192	80	Emaciation, jaundice, etc.	Recovered
Eclampsia															
20	H —	31	1	204-150	+++	+++	25.0	143	266	230	182	174	36	Postpartum convulsions	Died
21	M 4287	..	3	151-100	+++	+++	20.0	104	256	143	125	140	113	Ten postpartum convulsions	Recovered
	M 4287	..	..	.....	.....	.....	15.0	140	206	118	135	...	88	Second injection glucose for treatment	
	M 4287	..	..	.....	.....	.....	15.0	121	256	140	113	109	116	Glucose repeated after recovery for control	
22	M 5081	41	9	170-90	+++	+++	15.0	114	182	133	121	129	49	Antepartum convulsions	Recovered
	M 5081	..	..	.....	.....	.....	15.0	85	219	127	106	100	92	Glucose injection repeated after recovery for control	
23	B 7010	28	..	184-110	+++	+++	30.0	87	215	158	115	100	92	Twelve antepartum convulsions; repeated glucose slowly absorbed; multiple hemorrhages throughout body	Died
	B 7010	..	..	.....	.....	.....	45.0	121	286	250	190	...	36	Four antepartum convulsions	Recovered
24	M 8695	..	4	172-96	+++	+++	56.0	140	400	302	236	...	98	Sixteen antepartum and intrapartum convulsions	Recovered
25	A 3976	18	1	148-98	+++	+++	30.0	105	238	157	85	...	81		
26	J 961	..	..	172-70	+++	+++	60.0	77	303	222	122	80	81	Eleven antepartum convulsions, multiple hemorrhages in spleen, stomach, intestines, etc.	Died
27	B 9143	34	5	160-...	+++	+++	75.0	84	488	345	...	...	143	Five antepartum convulsions	Recovered
28	C 9345	18	1	140-95	+++	+++	75.0	103	435	238	164	...	197	Six antepartum convulsions, with ablation placenta, hemorrhage and shock	Died

lobules presenting in many instances a fairly normal appearance. At worst there is little more than cloudy swelling and a moderate amount of fatty infiltration to be seen. Many of the cells show enlargement with a pycnotic appearance of the nuclei, but with it all, it would hardly be possible to make a diagnosis of eclampsia from the appearance of the sections alone.

The regenerating powers of the normal liver have been repeatedly referred to by various experimenters, and a most graphic description of this ability is made by Davis, Hall and Whipple<sup>3</sup> when they recall that the speed of repair of the normal liver following a type necrosis such as that due to chloroform "exceeds any growth speed with which we are familiar. To illus-

neoplasm would most assuredly command the respect, if not the admiration, of the surgeon."

We have noted clinical evidences of the therapeutic value of glucose injections, such as the prompt cessation of pernicious vomiting and disappearance of the jaundice, occasional recurrences of the emesis within the next few hours or days being again promptly relieved by another injection; an almost immediate lessening of choreiform movements in chorea gravidarum; a diminution in the severity and a lengthening of the interval between eclamptic convulsions. In one such case the convulsions immediately became shorter and less severe, with a longer interval, only to increase in severity and frequency after a few hours



of improvement. A second injection of glucose again relieved the condition to a definite extent and was later followed by a third. The patient recovered after having been in an eclamptic state for about twenty hours, during which time she had ten convulsions following her entrance to the hospital and an uncertain number before admission.

It must be emphasized that the usual rational methods of treating these patients are not to be abandoned because glucose is offered as a therapeutic measure. It is simply an additional and, we believe, valuable factor in the treatment of toxemia of pregnancy which can be added to the established methods with ease and without loss of important time in the management of what is usually a most acute and serious illness.

#### TECHNIC OF PREPARATION AND INJECTION OF GLUCOSE SOLUTION

Several technical details are involved in its use, namely, the preparation and sterilization of the glucose solution, the procedure for intravenous injection of the fluid, and lastly the taking of samples of blood and the determination of sugar in the blood in order to plot a glycemia curve which we believe to be of some prognostic value in these conditions.

The glucose injected has been, in the majority of instances, Merck's "Highest Purity," but in a few cases the best product of the Difco Company was used. Regardless of the fact that highest purity is claimed for both of these preparations, it has been found necessary to filter the dissolved sugar on account of small particles of dust. Concentrations of dextrose from 5 to 25 per cent. have been used, the solvent being distilled water. The filtered solution of sugar has been sterilized at 15 pounds pressure for thirty minutes, and practically no caramelization has been produced by this heating, as indicated by the fact that the solution remains almost colorless.

The amount of glucose injected into the blood stream has varied, as little as 15 and as much as 75 gm. having been used. In work preliminary to the experiments in which blood sugar determinations have been made, we generally used 15 gm. of dextrose in from 300 to 400 c.c. of solvent. Success having been attained with this amount, we felt warranted, since we attributed it mainly to the glucose, in increasing the intravenous dose, especially because no untoward results were evident. Accordingly, the amount has been worked up to 75 gm., this usually being injected in about 500 c.c. of water, thus being approximately a 15 per cent. solution.

The rate of injection has been controlled to a certain extent. It has been attempted to regulate the flow

so that the entire volume was introduced in a period of thirty minutes. This has not been strictly adhered to, but there has been no indication that a more rapid rate of flow was injurious to the recipient.

The foregoing details are related and were followed by us because of the possibility of a reaction following intravenous injection of glucose solution. Several investigators have reported severe chills, prostration, and occasionally profound shock after so using glucose. We have in no instance observed any unfavorable reaction, and we attribute this to the purity of the sugar used, its solution in water, and the time and technic employed in handling the injections.

Various authorities have recommended a continuous, slow injection of glucose into the vein, and Woodyatt<sup>7</sup> has elaborated an electric pump by which the rate and amount of flow can be carefully regulated. Freidell<sup>8</sup> has recently described an apparatus for continuous intravenous administration of fluids which consists of a 300 c.c. arsphenamin tube, with a

buret attached by a Y-tube. The rate of flow may be noted in the buret, and in this way a definite amount of fluid may be discharged in a given period of time by an adjustment of a thumb screw. On the other hand, a simple arsphenamin tube suffices for all practical purposes.

We have preferred to give single doses of glucose, repeated as required, rather than to attempt a continuous flow over any considerable period of time. The latter might be practicable in the case of pernicious vomiting of pregnancy, but, for obvious reasons, never could be applied to an eclamptic woman. Occasional glycosuria following large doses of glucose is of no significance.

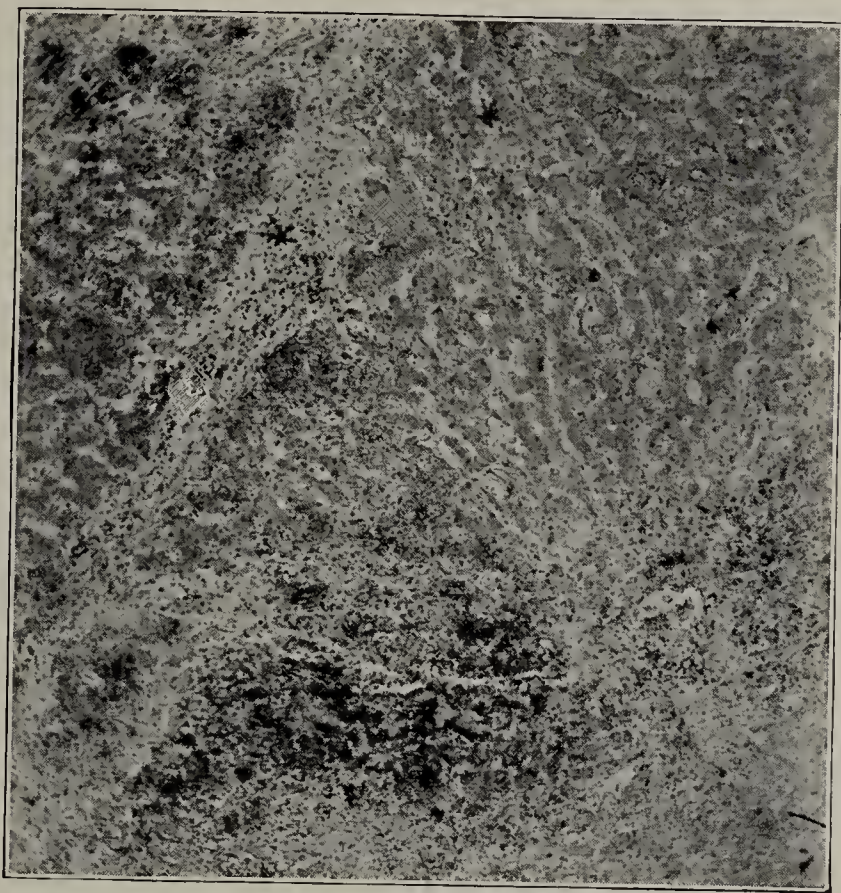


Fig. 1.—Liver from typical case of eclampsia, not treated by glucose injections. Extensive necrosis involving not only peripheral, but also central portions of liver lobules.

#### GLYCEMIA CURVE AS AN INDEX OF LIVER IMPAIRMENT

It may be definitely stated that the liver is the carbohydrate storage organ of the body, and that in fatal toxemias of pregnancy it undergoes degeneration and necrosis. A study of the various lesions in a given liver seems to indicate that there is at first a glycogen depletion of the cells with cloudy swelling, followed by necrosis. Experimentally and clinically it has been shown that a generous supply of sugar to such a liver will cause it to regenerate if its destruction has not been too extensive. On the basis of this we endeavored to devise a test which would indicate the degree or extent of liver impairment in the presence of toxemia of pregnancy.

7. Woodyatt, R. T.: An Improved Volumetric Pump, *J. Biol. Chem.* **41**: 315 (March) 1920.

8. Freidell, H. F.: Apparatus for Continuous Intravenous Administration of Fluids by Which the Rate of Flow May be Easily Determined and Controlled, *J. A. M. A.* **76**: 724 (March 12) 1921.



Briefly outlined, the steps are as follows: A specimen of blood is taken for a blood sugar determination, and a given amount of glucose is injected intravenously, taking a definite length of time for the injection, after

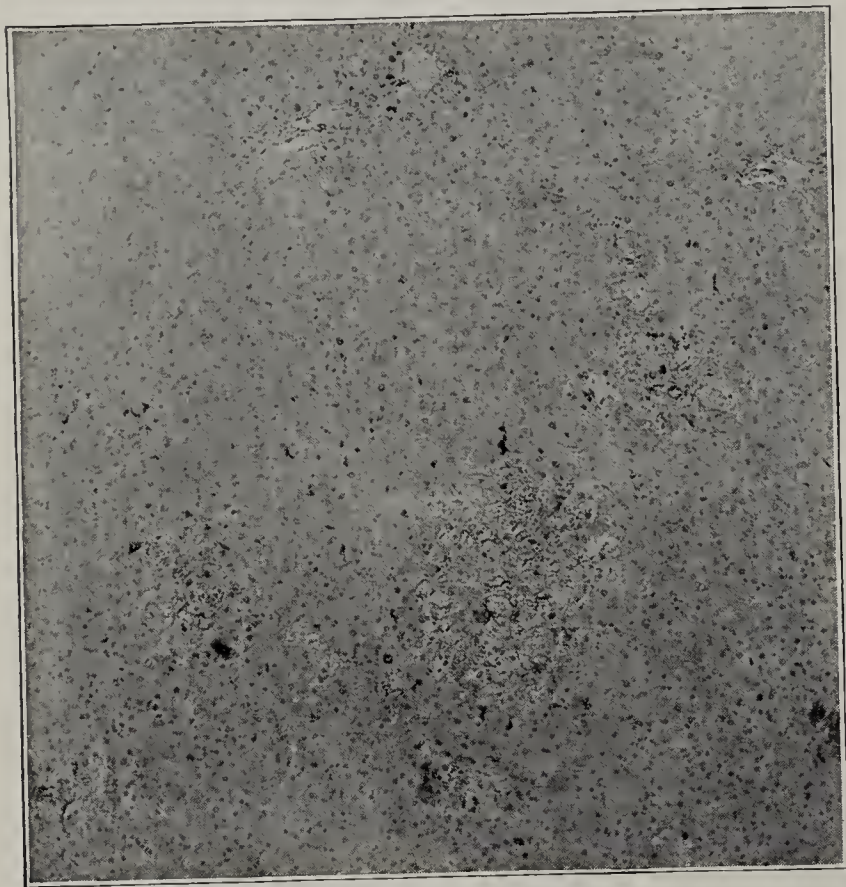


Fig. 2 (Case 28).—Liver from case of eclampsia treated by intravenous injection of glucose solution. Section shows intermediate stages of regeneration and repair in liver cells. Vacuoles indicate clearing away of necrosis and debris, best noted in the midzone of the lobule. Repair is seen in the large cells with large nuclei. Immediate cause of death, hemorrhage and shock from ablatio placentae.

which another specimen is taken for blood sugar estimation. Blood sugar readings follow at stated intervals and from them a glycemia curve may be plotted. It was thought that the rate of absorption and storage of the injected sugar would give an idea of the condition of the liver, in the following respects: A liver depleted of glycogen but not infiltrated with fat should be greedy for sugar and take it up from the blood stream at a rate faster than under normal circumstances, whereas a liver which had undergone fatty infiltration and necrosis would probably have its function in this respect impaired, even though it were more urgently in need of glycogen.

It should be particularly pointed out that the glucose is injected primarily for its therapeutic effect rather than for the sake of this glycemia test, and that the taking of blood specimens involves no loss of valuable time in these serious and rapidly progressing pathologic conditions.

#### TECHNIC OF GLYCEMIA CURVE ESTIMATIONS

We have usually taken five samples of blood for sugar determination. The first, or control, sample is taken with the same needle through which the sugar is presently to be injected. Immediately after the blood has been obtained, the syringe is disconnected and the sugar solution tube attached to the needle. As stated before, the time taken to complete the injection should be as near thirty minutes as possible. Five minutes after the injection is completed, Blood 2 is taken, then thirty minutes later Blood 3, and at one and two hours after Blood 3, Bloods 4 and 5 are obtained. Blood 1 serves as a control, Blood 2 represents the peak of the blood sugar after injection, Blood 3 shows the

reduction in blood sugar thirty minutes after Blood 2, and Bloods 4 and 5 show whether or not the blood sugar has returned to the level of Blood 1 during this allotted interval. Bloods 2 and 3 we consider the most important, as they indicate the greatest amount of reduction in blood sugar accomplished by the liver and tissues in thirty minutes.

Sugar in the blood has been determined by the Folin-Wu and the modified Folin-Wu procedures.

The results are given in the accompanying table.

In Group 1 a number of full-term pregnant women, otherwise normal, are considered. The age limits are from 17 to 36, the number of pregnancies one to nine. The blood pressures are normal, and the urinary findings are hardly significant with the possible exception of Case 5. To each of these individuals 25 gm. of glucose was given intravenously, and with the one exception of Patient 1 who had had breakfast, all the blood sugars before injection were within the normal range.

The second blood sugars are interesting. The blood was taken five minutes after the injection was completed in order that sufficient time should have elapsed to insure a thorough mixing of the sugar with the blood. The lowest blood sugar is 171 mg. per hundred cubic centimeters of blood and the highest 308, yet all patients received the same amount of glucose. Thirty minutes later the corresponding figures were 225 and 98. Undoubtedly the size of the individual, the size and activity of the liver, and the activity of the muscular tissues account to some degree for the variations in the second blood. In the case of Blood 3 the reduction from the level of Blood 2 must be ascribed mainly

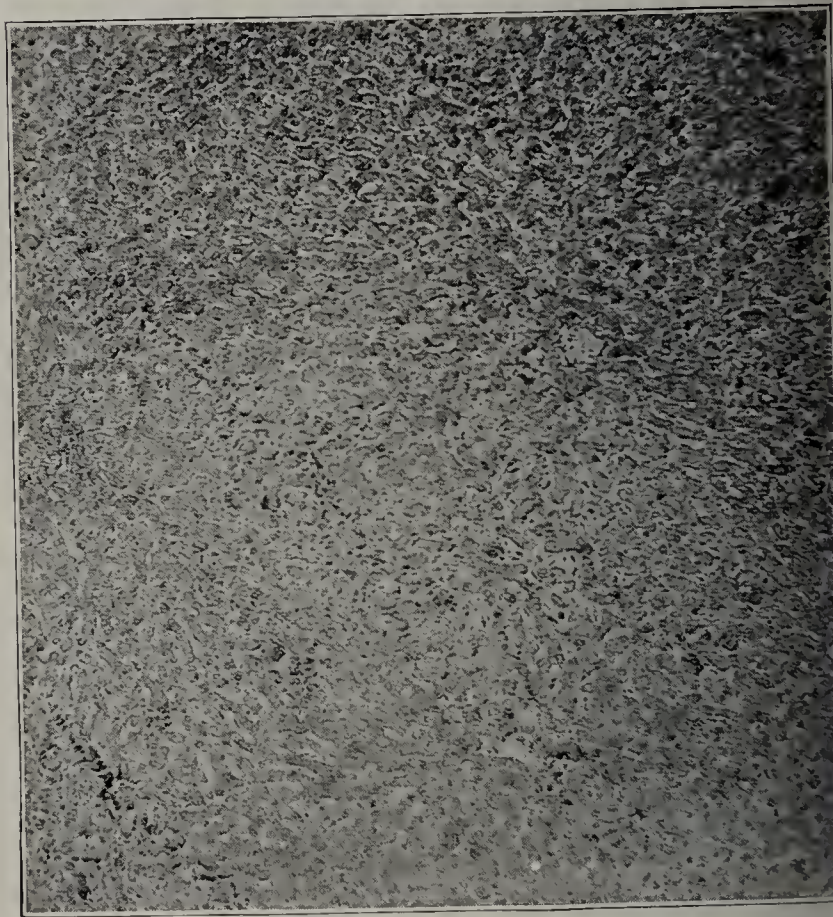


Fig. 3 (Case 26).—Liver from case of eclampsia treated by intravenous injection of glucose solution. Section shows complete absence of necrosis, but moderate cloudy swelling.

to the liver because, of all the factors mentioned above it is the variable of significance. In other words, the reduction of a blood sugar from 0.308 to 0.225 per cent. in thirty minutes is undoubtedly due to activity of the liver cells in converting the sugar into glycogen.



and storing it as such. It has been suggested that our hypothesis regarding evidence for the storage capacity of the liver may not be entirely valid because of another factor which must be considered. If it

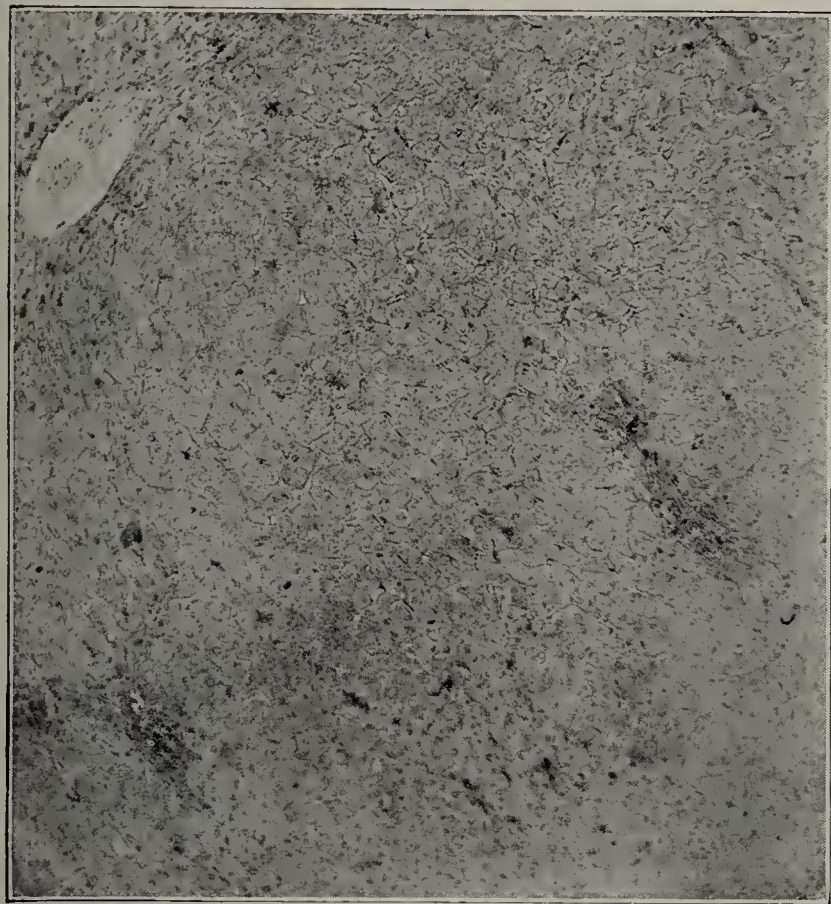


Fig. 4 (Case 23).—Liver from case of eclampsia treated by intravenous injection of glucose solution. Section shows complete absence of necrosis, but marked cloudy swelling.

may be assumed that there is no loss of injected sugar by way of the kidneys in these experiments, one must still think of the possibility that there may be a decrease in the capacity of the organism to utilize or destroy sugar, as well as a diminution in the ability of the liver to store glycogen. It is conceivable, we admit, that the former circumstance might lead to a continued hyperglycemia; but it would seem that its influence on these readings would be slight, indeed, as compared to the broad limits of variation which we know to be possible in the liver. Loss of sugar by the kidneys is of little or no significance, especially in the presence of such complete breakage in kidney function as usually occurs in eclampsia.

The difference between Blood Sugars 2 and 3 falls within certain limits for the group of normal individuals, the figures being from 68 to 106, to be exact. If there is any marked disturbance of the glycogen forming and storage function of the liver, these figures should be altered thereby, and we have found such to be the case in eclampsia. It seems reasonable to assume, from data reported by others as well as from a study of the liver sections in our fatal cases, that this alteration is due to a pathologic condition of the liver.

Blood 2 or the height of the blood sugar five minutes after the injection is completed, varies not only because of the factors hitherto mentioned, but also to a slight degree on account of the amount injected, if that be very large. If the same amount of sugar were given in each case, one might then be inclined to interpret a high blood sugar for Blood 2 as indicative of liver disturbance, provided the tendency to remain high was still evident in Blood 3. At present

we have no suggestion to offer regarding the level of Blood 2 because an inspection of the table shows several interesting facts difficult to explain. For example, Patients 2 and 6 of the normal group each received 25 gm. of sugar, yet Blood Sugar 2 of the former was 250, and of the latter 171. The same peculiar variance will be seen in some of the pathologic cases.

With the few cases we have had, the figure which seems to be an index of the activity of the liver and which, in consequence, may be of prognostic significance is the difference between Blood Sugars 2 and 3. For the normally pregnant women as well as for the pathologic cases in which the patients recovered, the limits of these figures have been 49 and 127. Whenever the difference has been less than 50 we have considered the patient's condition grave, and 40 or less as practically hopeless. For example, Patient 20, with a difference of 36 mg. between Blood Sugars 2 and 3, died; Case 23 was also fatal, the results of the first injection being suggestive of a grave condition. For therapeutic reasons this patient was given a second injection and, when a difference of only 36 mg. was found, the case was considered hopeless. Patients 26 and 28 did not show a significant difference between Blood Sugars 2 and 3, nor did Patient 18, who died with hyperemesis. The possible explanation of this is that they each showed temporary clinical improvement from the injection of glucose, a fact confirmed later by the microscopic examination of sections of their livers. These sections indicate that there was considerable regeneration of the liver tissue, since the microscope does not disclose the characteristic lesions of pernicious vomiting in Case 18, or of eclampsia in the other two.

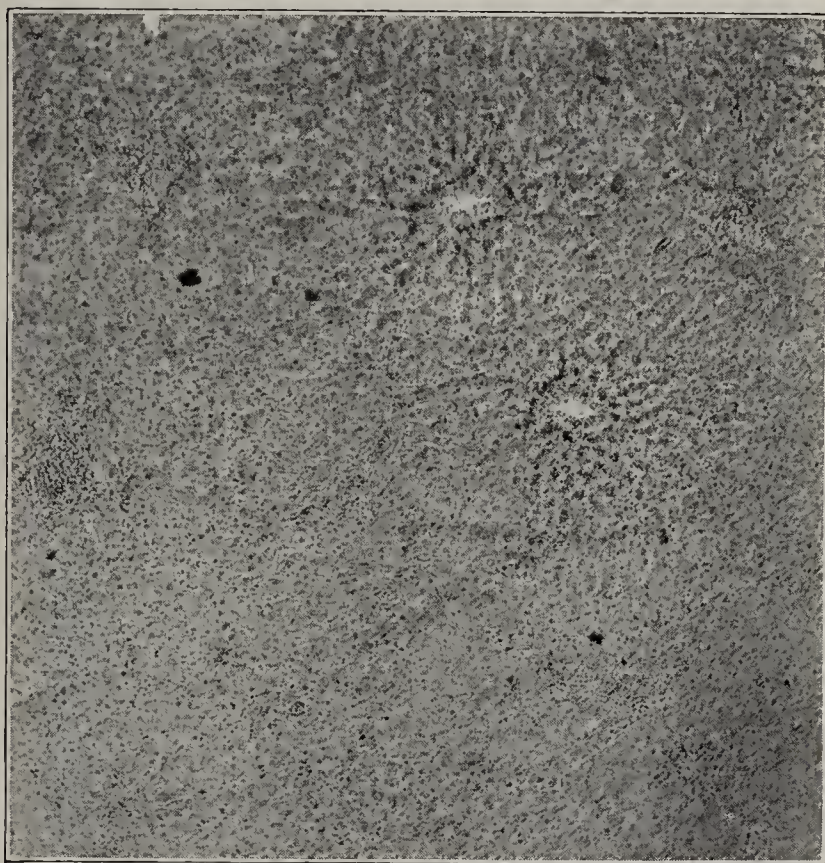


Fig. 5 (Case 18).—Liver from case classed as pernicious vomiting of pregnancy, but clinically one of acute yellow atrophy of liver. Treated by intravenous injection of glucose solution and therapeutic abortion. Section shows complete absence of necrosis, but slight cloudy swelling.

We have studied the blood sugar after intravenous glucose injection in cases of eclampsia, chorea gravidarum, premature separation of the placenta with toxemia, hydatidiform mole with preeclamptic toxemia,



preeclamptic toxemia, and pernicious vomiting of pregnancy. Many of our patients with eclampsia have been given glucose by the vein with clinical benefit, but without the opportunity of studying the glycemia curves because of the odd times of the day or night when they have been admitted to the hospital. We are indebted to Dr. Thomas Evans, Jr., for the opportunity of studying the especially interesting case of "H" at Pittsburgh Hospital (Case 20), and to Dr. J. W. Stevenson of the McKeesport Hospital for the case of vomiting designated as "O" (Case 17).

The therapeutic value of glucose in these conditions seems to be definite, but the paucity of data, resulting from what would otherwise be a fortunate scarcity of toxemia since the blood sugar work was begun, makes us hesitate to state that the following of the blood sugar curve is an absolutely definite test of liver function in these conditions. Nevertheless, it has served us as an index and we offer the plan and results in the hope that other workers will help to prove or disprove the value of the procedure.

#### SUMMARY

1. Intravenous injection of glucose for pernicious vomiting of pregnancy, as advocated in a previous paper, gave results sufficiently uniform and successful to warrant applying the same treatment to other toxemias of pregnancy, eclampsia in particular.

2. The usefulness of glucose and other carbohydrates, whether administered by vein, by mouth or by bowel, seems to be based on the fact that in toxemia of pregnancy there is a carbohydrate deficiency in the maternal organism. This deficiency is due to an unusual demand for carbohydrates on the part of the growing fetus, frequently augmented and aggravated by a diminished carbohydrate intake resulting from an improperly balanced diet. The reserve store of glycogen in the liver is drawn on in the presence of this carbohydrate deficiency, and the organ is thus depleted of glycogen. Pathologic changes in its cells result from this depletion, and its detoxicating and other normal functions are promptly impaired thereby.

3. Disturbances in kidney function so commonly seen in the various toxemias of pregnancy are probably secondary to the hepatic changes, much as occurs when various chemical and organic poisons act within the body and eventually produce an incidental nephritis.

4. Successful results have been obtained by the use of carbohydrates in the treatment of vomiting of pregnancy among sixty-eight patients now reported in addition to the series of seventy-six previously reported. Therapeutic abortion was performed twice, and of these two patients, one woman died from acute yellow atrophy of the liver.

5. Immediate clinical improvement in individual patients, as well as a general lowering of the mortality rate in eclampsia, has been noted in this clinic as a result of the intravenous administration of glucose for this condition.

6. Chorea gravidarum, preeclamptic toxemia, and fulminating toxemia with ablatio placentae have likewise shown favorable results from this treatment.

7. The usual necropsy findings in the liver of patients dying from any toxemia of pregnancy are distinctly altered if the patient was given an intravenous injection of glucose solution before death. Those portions of the liver lobules which are ordinarily necrotic are thereby restored to a marked degree, and in most

instances a diagnosis of eclampsia or pernicious vomiting of pregnancy, as the case might be, could not be made from an examination of the liver sections alone.

8. The regeneration of the liver cells after injection of glucose, which can be demonstrated pathologically in the fatal cases, at least partially restores the normal functions of the liver, especially in respect to its action as the detoxicating organ of the body. Clinical improvement is usually noticeable within a short time after the injection.

9. From 50 to 75 gm. of chemically pure glucose dissolved in from 250 to 500 c.c. of water may be injected slowly without danger of unfavorable reaction on the part of the patient. Single doses repeated as required are preferable to a continuous flow of solution into the vein.

10. It is thought that the rate of absorption and storage of the injected sugar is an index of the condition of the liver. Glycemia curves plotted from blood sugar determinations at stated intervals after injection of glucose disclose the fact that the sugar is absorbed and stored by some patients more rapidly than in the normal controls, whereas in others the storage is slower than normal. While there may be other factors involved, the liver is the variable of greatest significance or importance among these individuals. A prognosis based on the first curve, therefore, is favorable because this liver may be assumed to have been depleted of glycogen in the course of the toxemia but able to restore itself when given an opportunity, whereas, the slower the rate of storage the more is an actual and extensive liver necrosis with loss of function to be indicated rather than a mere depletion of the cells.

1015 Highland Building, E. E.

## DYSTOCIA DUE TO CONSTRICTION OF ONE THIGH BY CERVIX IN A CEPHALIC PRESENTATION

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CHICAGO

The case here reported is unique in the history of the Chicago Lying-in Hospital. A review of the available literature failed to reveal a similar case. No mention of such a condition is made in the textbooks by Williams, Edgar, Hirst, Bumm, von Winckel and others. Dr. De Lee does not recall having heard of a similar occurrence. In his textbook, however, is found the statement: "Many authors deny the existence of spasmodic rigidity of the cervix. Fieux asserted that there are practically no muscle fibers in the cervix around the external os near term. Nevertheless, a few cases in my experience have shown that occasionally the cervix will contract, either in front of the presenting part or, more commonly, around the neck after the head is through it, or after the body is delivered in breech presentations. Most of the cases of so-called rigidity of the cervix are not spasmodic, but anatomic, owing to some alteration of structure."

#### REPORT OF CASE

*History.*—Mrs. R. F. (No. 17446, referred by Dr. Marcus Oliver), whose last menstrual period had begun, Sept. 26, 1920, was admitted, in labor, to the Chicago Lying-in Hospital, at 6:45 p. m., June 4, 1921. On two previous occa-



sions, May 19 and May 26, the patient, believing that she was in labor, had come to the hospital, remaining one day, during which time she had irregular uterine contractions. The cervix, however, did not dilate nor did it become effaced, and the membranes remained intact. The patient was a secundipara whose first pregnancy, labor (Nov. 12, 1919) and puerperium had been uneventful.

On the last admission, the general physical examination was negative, the blood pressure was: systolic 126, diastolic 80, and the urine showed no abnormalities.

**Examination.**—The special obstetric examination revealed a normal pelvis: interspinal diameter, 27 cm. (10 $\frac{3}{8}$  inches); intercrystal, 29 cm. (11 $\frac{3}{8}$  inches); intertrochanteric, 34 cm. (13 $\frac{3}{8}$  inches). Baudelocque's, 20 cm. (7 $\frac{1}{2}$  inches). The child was in the left occipito-anterior position with the head engaged, the fetal heart tones, 132, in the left lower quadrant, the membranes ruptured, and the cervix effaced and dilated 2 cm. ( $\frac{1}{2}$  inch). Pains were coming at fifteen minute intervals and were moderately strong. The patient said the membranes had ruptured three days previously, but pains had not begun until 6 p. m. on the day of admission. Soon after entry to the hospital, the pains gradually became stronger and more frequent. At 8:30 p. m., the pains were only from two to three minutes apart and very severe. At this time, the cervix was dilated 3 cm. (1 $\frac{1}{2}$  inches). At 10:30 p. m., the pains became stronger and the patient became quite unruly and screamed most of the time. Rectal examination showed the cervix to be dilated 5 cm. (2 inches).

**Delivery.**—Obstetric anesthesia was started at about 11:30 p. m., and at 12 midnight the cervix was completely effaced and dilated. At 12:32 a. m., June 5, the head of the child was expelled spontaneously. The shoulders were delivered in the anteroposterior diameter with slight difficulty. The thorax was easily delivered; but when Dr. Oliver attempted further extraction, great difficulty was encountered. The child was delivered up to the umbilicus, but no further progress could be made. After strong traction had been made for more than twenty minutes, I was summoned. The baby was protruding from the vagina, delivered as far as the umbilicus. The child was crying lustily, but presented nothing unusual. Examination revealed the left leg of the child was doubled up in the vagina. It was liberated readily and did not appear abnormal. An attempt was then made to extract the right leg, but without success. The hand was then again inserted in the vagina, and it was discovered that the cervix, which was very firm, was clamped down tightly on the thigh of the baby. The finger could not be inserted between the thigh and the external edge of the cervix. The patient was deeply anesthetized with ether, and even then it was with considerable difficulty that a finger was inserted under the edge of the external os, between it and the thigh. After this was accomplished, traction was applied, and the right leg was extracted at 12:56 a. m., twenty-four minutes after the delivery of the head. The leg presented the peculiar appearance shown in the illustration and about to be described. Ten minutes later, the placenta, which was complete, was expressed

by the Schultze mechanism, with no difficulty at all. The uterus remained firm.

**Examination of Cervix.**—The cervix was then palpated and found to be circular and about 5 cm. (2 inches) in diameter. The edge was 2 cm. ( $\frac{1}{2}$  inch) thick and moderately firm. A small laceration was felt on the left side, and the external os admitted no more than the tip of the index finger. The cervix was then exposed with specula and found to be of normal color, and the palpatory findings just described were confirmed. The total blood loss was not more than 200 c.c., and the perineum was intact.

**The Child.**—The baby, a girl, weighed 2,790 gm. (6 pounds, 2 ounces). The measurements were: length, 46 cm. (18 inches); biparietal diameter, 9 cm. (3 $\frac{1}{2}$  inches); bitemporal, 7.5 cm. (3 inches); suboccipitobregmatic, 9.5 cm. (3 $\frac{3}{4}$  inches); occipitofrontal, 11.5 cm. (4 $\frac{1}{2}$  inches); occipitomenal, 12.5 cm. (5 inches); bisacromial, 11.5 cm. (4 $\frac{1}{2}$  inches); bisiliac, 7.5 cm. (3 inches). Circumferences: suboccipitobregmatic, 31 cm. (12 $\frac{1}{2}$  inches); occipitofrontal, 33 cm. (13 inches); shoulders, 32.5 cm. (12 $\frac{1}{2}$  inches); chest, 29 cm. (11 $\frac{1}{2}$  inches). The temperature at birth was 97.6 F. and, except for the right leg, nothing unusual was noted.

**Leg:** The right leg of the child, immediately after its delivery, looked like a monstrosity, but the pathologic condition was apparent. It was flexed at the thigh and at the knee, as shown in the accompanying illustration. While motion at the hip was only slightly restricted, neither active nor passive mobility was possible at the knee. Slight passive movements were possible at the ankle, and the toes were only slightly limited in their mobility.

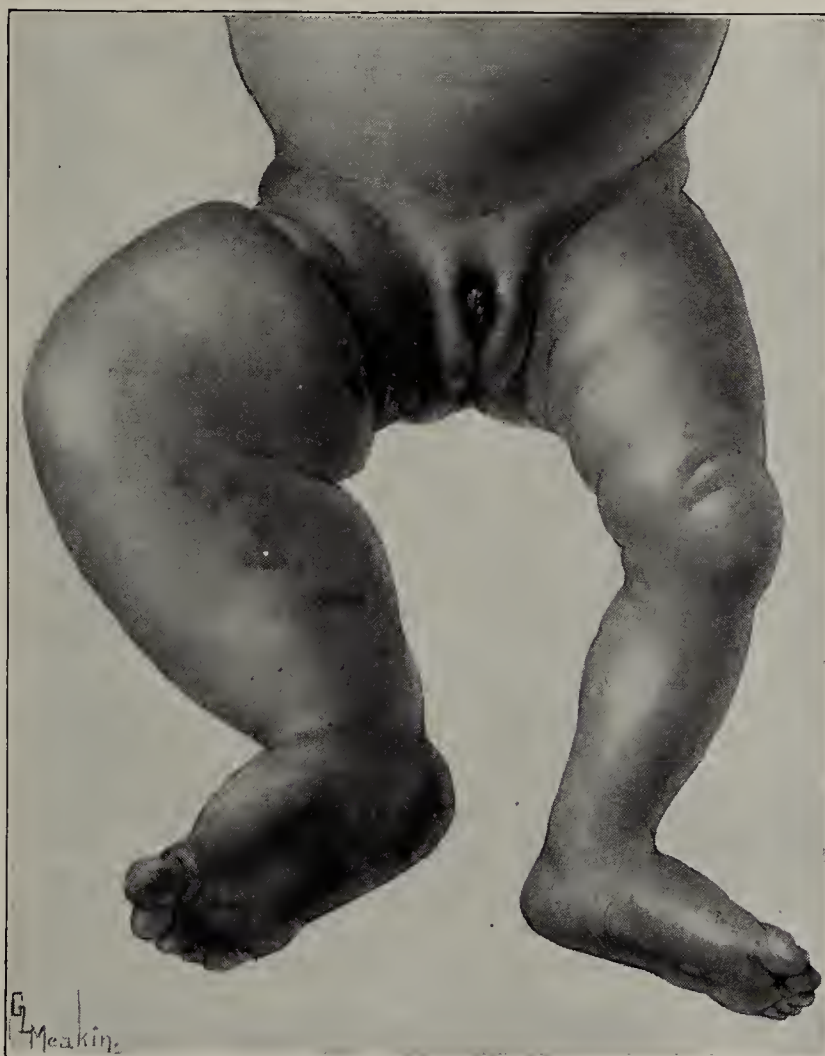
At the junction of the upper with the middle third of the thigh, there was a deep, circular, fiery-red constriction, extending all around the thigh. On the inner surface of the thigh, for a short distance above and below the constriction, the epidermis was missing and slight oozing of serum was visible in these areas. The portion of the thigh above the constricted area was congested and, except for the small area of excoriation, presented nothing

uncommon. The rest of the limb, that is, the entire portion below the upper third of the thigh, was markedly increased in diameter. The measurements of the two limbs at various levels are given in Table 1.

TABLE 1.—MEASUREMENTS OF LIMBS AT BIRTH

	Just Below Constriction	Knee	Calf	Foot
Right .....	17.5 cm. (7 inches)	14.5 cm. (5 $\frac{3}{8}$ inches)	16 cm. (6 $\frac{1}{2}$ inches)	10 cm. (4 inches)
Left .....	11.5 cm. (4 $\frac{1}{2}$ inches)	11 cm. (4 $\frac{1}{8}$ inches)	9.5 cm. (3 $\frac{3}{4}$ inches)	7.5 cm. (3 inches)

The skin over most of this extremity was extremely tense and very shiny. The color of the thigh and leg was a pale purple, while that of the foot was a deep purple. A few small suggillations were visible on the inner surface of the leg just at and below the knee. The limb felt very hard, and pitting edema was present.



Drawing showing constriction of thigh.



*Course in the Hospital.*—Immediately after birth, moist hot dressings were applied to the right limb, and these were kept up for two days. At the end of this time, most of the edema had disappeared, but the skin was still faintly purple. The constricting ring was still marked, but was not very deep. The excoriated areas were healing well. The limb gradually resumed its normal dimensions and color. At the time of discharge from the hospital, on the eleventh day, June 15, while the constricting ring was still visible, the measurements of the right limb, as compared with the left, were as given in Table 2.

TABLE 2.—MEASUREMENTS OF LIMBS, ELEVENTH DAY

	Just Below Constriction	Knee	Calf	Foot
Right .....	13 cm. (5 $\frac{1}{5}$ inches)	12 cm. (4 $\frac{2}{3}$ inches)	10.25 cm. (4 $\frac{1}{10}$ inches)	8 cm. (3 $\frac{1}{5}$ inches)
Left .....	12.5 cm. (5 inches)	11.5 cm. (4 $\frac{1}{2}$ inches)	10 cm. (4 inches)	8 cm. (3 $\frac{1}{5}$ inches)

The baby's general condition was good. It nursed well and its weight at the time of discharge was 2,655 gm. (5 pounds, 13 $\frac{1}{2}$  ounces). Its highest temperature since birth had been 100 F., on the fifth day.

The mother's course was entirely uneventful. At the time of discharge, a vaginal examination was made. The cervix was of the consistency and shape usual at this time in the normal puerperium. Specular examination revealed no abnormalities other than a slight healed laceration on the left side of the cervix.

## COMMENT

It is very difficult to discuss this condition, since the etiology could not be discovered. No pituitary extract or ergot had been given to the patient, and labor had not been induced in any way. The membranes had ruptured three days previous to admission, and while labor is often prolonged and painful in dry births, and interference is often required, such serious cervical dystocia as this has not before been encountered.

The patient was in a state of near frenzy for a number of hours before delivery; but whether or not this was a causative factor in the condition reported, as indicating a nervous spasm of the cervix, it is difficult to say. Deep narcosis caused a release of the constriction.

Contrary to many authors who deny the possibility of a spasm of the muscle fibers of the external os, this case illustrates definitely that such a condition, although a great rarity, is nevertheless possible.

### Unfortunate Results of Labor by Children of School Age.

—The National Child Labor Committee states that there are five and one-half million illiterates in the United States; that one fifth of our American children between 10 and 15 years of age are out working instead of at school, and in many of the larger states, as Pennsylvania, Illinois and New York, an astonishing number of them are leaving school for work. In the United States over two million children between 10 and 15 years of age are working, and the number increasing. The practical bearing is that the child starting work at fourteen has but half the earning capacity at twenty-five as the one who remains in school until eighteen, and is twice as liable to disability and sickness. The national loss, therefore, through premature labor is in efficiency, health and happiness. A legal limit of 16 for work and a certificate issued for each job with yearly or periodic examinations, disqualification for 10 per cent. below the standard weight, or for racial or family defects, is now advocated. Last year New York State rejected 3.17 for incurable physical conditions.—*From Buffalo Sanitary Bulletin, November, 1921.*

## THE CLINICAL APPLICATION OF THE AUDION AMPLIFIER

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It is the purpose of this article to focus the attention of the medical profession on the important position the vacuum (amplifying) tube has reached in the science of telephony, and its future in medicine. This device magnifies the electric waves of a telephone circuit and is the beginning of a "microscope" for the ear.

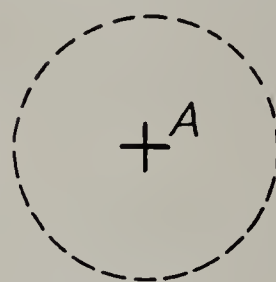
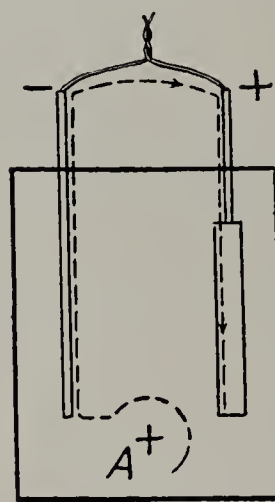


Fig. 1.—Electrons in an atom.

A short historical review of the development of the audion amplifier will simplify the understanding of its theory and powers. The electron theory is based on the modern conception of the atom, which is that of a positive or plus portion which carries the elemental characteristic and negative, or minus portions which are essentially alike in atoms of widely different elements. A diagrammatic representation of this theoretical conception would be somewhat as represented in Figures 1 and 2.

When these negative portions are torn away from the positive remainder by either chemical (the electrical battery) or mechanical (the dynamo) means, a void is created around the plus or positive remainder, which the minus bodies rush to satisfy (Fig. 2). As they are essentially alike, they push one another along a conductor, in sufficient amount to neutralize the void so that neutralization is accomplished by rearrangement of minus particles. The rearrangement or pushing along in the conductor is known as current. The particles themselves are ions, or, more particularly, electrons.

We are concerned with the behavior of these ions in heated metals and in vacuums.



BATTERY

A = ATOM

Fig. 2.—Separation of electrons by chemical action.

Elster and Geidel, in 1882, found that metals heated to redness gave off positive electricity and at white heat gave off negative charges. Edison found that negative electricity was given off by a carbon filament and taken up by an inserted metallic plate. J. J. Thomson (1899) measured the size of these electrons and found them to be  $\frac{1}{1800}$  of the size of an atom of hydrogen.

Richardson (1903) was able to develop the theory of the electron movement in gases from these phenomena. He assumed that electrons were held in metals as are molecules in a liquid, and as heat forces these molecules to escape the ions are forced or allowed to escape from the heated metal. He called this phenomenon thermionic emission, and plotted curves of their values. Langmuir<sup>1</sup> studied this process in vacuums and proved that the presence of gas was unnecessary.

1. Langmuir, J.: Pure Electron Discharge and Its Application to Radio Telegraphy and Telephony, P. I. R. E. 3: 261-293 (Sept.) 1915.



Fleming then built his "valve," which consisted of a heated wire filament and a cold plate, thus proving that only a small current would flow if the filament were made plus and the plate minus, while reversal of the polarity allowed transfer of large currents. DeForest<sup>2</sup> placed a gauze screen between the filament and the plate which "controlled" the current. This screen he called the grid, and named the new tube the "audion."

Dr. H. B. Williams<sup>3</sup> of New York used an amplifying system to record a cardiac murmur in December, 1920. Gen. George O. Squier<sup>4</sup> of the U. S. Signal Corps at the same time amplified the heart sound and reproduced it in the magnavox loud speaker for demonstration to assemblies and for long distance transmission.

#### THEORY OF THE VACUUM TUBE

The Fleming valve was the earliest form of tube having a practical application. Figure 4 shows a simplified diagram of the electrical components of a circuit containing the valve.

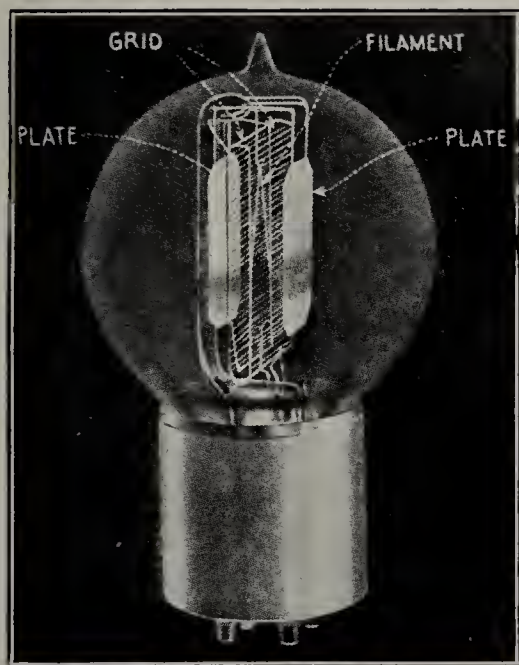


Fig. 3.—Audion amplifier.

The filament,  $F$ , is heated by the current from battery  $A$ . As it becomes hot the ions (electrons) are allowed to escape into the vacuum by the release of the surface tension (theory of Richardson<sup>5</sup>), and as they are all negatively charged, they repel one another and are repelled by the filament. They are attracted to and will continue to pass into the plate  $P$  as long as its potential remains positive or plus. Large currents will pass from  $F$  to  $P$  and only small ones from  $P$  to  $F$  as long as they are withdrawn from  $P$  to prevent saturation (neutralization). In this way the valve can act as a detector of the current direction.

DeForest added a third element to this vacuum tube. He interposed a "grid," which consisted of a wire gauze or screen between the filament  $F$  and the plate  $P$ . Figure 5 shows a circuit containing this member. As in the Fleming valve, the filament  $F$  becomes heated and gives off its ions to  $P$ , which is positive.  $G$ , the grid, has a negative charge and introduces a small cur-

rent from an outside source. The plate,  $P$ , while it remains positive will absorb the ions from both sources, and the sum of the two currents will be the result. This "amplified" current will continue flowing as long as electrons are withdrawn from the plate  $P$  circuit, keeping this member positive or plus. The grid,  $G$ , controls the ebb and flow of the ions passing between

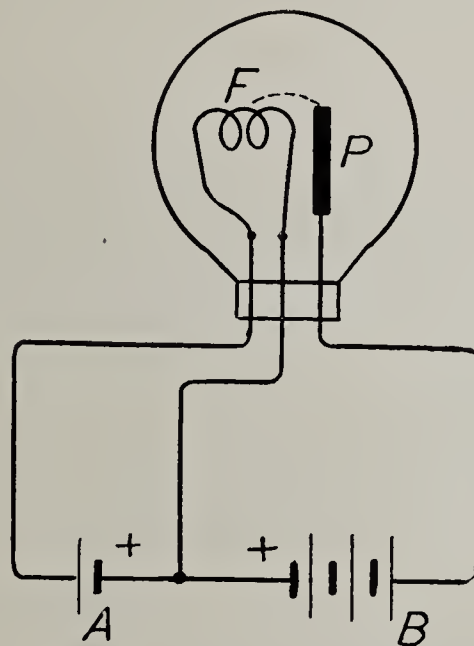


Fig. 4.—Fleming valve circuit.

the filament,  $F$ , and the plate,  $P$ , and does so with remarkably small changes of current strength. If the source,  $O$ , is a telephone transmitter, small movements of its diaphragm give rise to faint, but sufficient changes in the grid,  $G$ . These, however, are now impressed on the relatively large  $F$  to  $P$  flow of ions, and are magnified in a telephone receiver interposed in the plate  $P$  to  $B$  circuit.

Of course, there is a limit to the amount of amplification possible in each tube. Should the filament, for

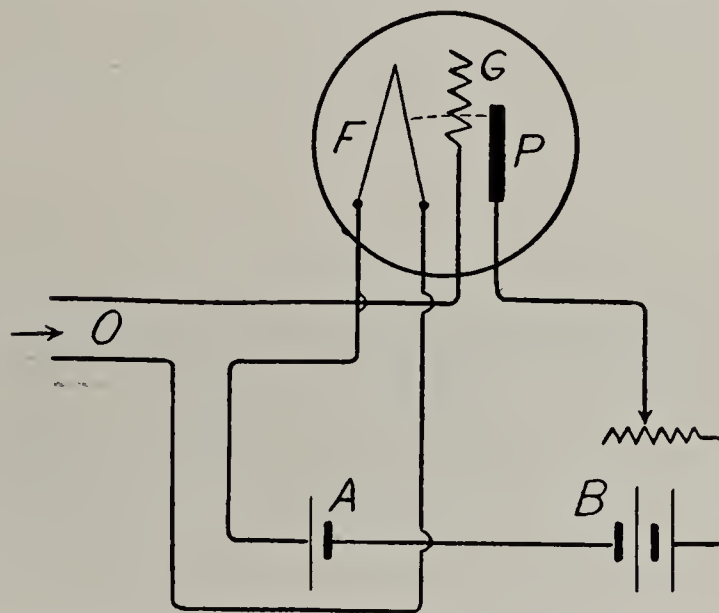


Fig. 5.—Amplifying tube (audion) circuit.

instance, become overheated, it would disintegrate or "burn out." There is a point of saturation, too, for the plate, which has been ascertained. Twenty-six amplifications seems to be the limit for each tube, but tubes can be "cascaded," i. e., the amplified current is brought to the grid of each tube in turn. As many as seventeen tubes were cascaded in England, I believe, but the practical limit is eight tubes. Screening against inductive interaction between the wires of different circuits

2. DeForest: Audion Detector and Amplifier, Electrician, Nov. 21, 1913; The Ultra-Audion Detector for Undamped Waves, Electrical World, Feb. 20, 1915, p. 465.

3. Williams, H. B.: New Method for Graphic Study of Heart Murmurs, Proc. Exper. Biol. Med. 18: 179 (March 9) 1921.

4. Squier, G. O.: Diagnosis by Wireless, Scient. Am., June 11, 1921.

5. Richardson: The Emission of Electricity from Hot Bodies, New York, Longmans, Greene & Co., 1916.



becomes almost impossible when this number is exceeded.

#### RECORDING APPARATUS

There are various electrical machines extant which record electrical currents photographically. The most important of these are the oscillograph and the Einthoven string galvanometer. Actual sound records can be made on the telegrafone, a form of electric phonograph.

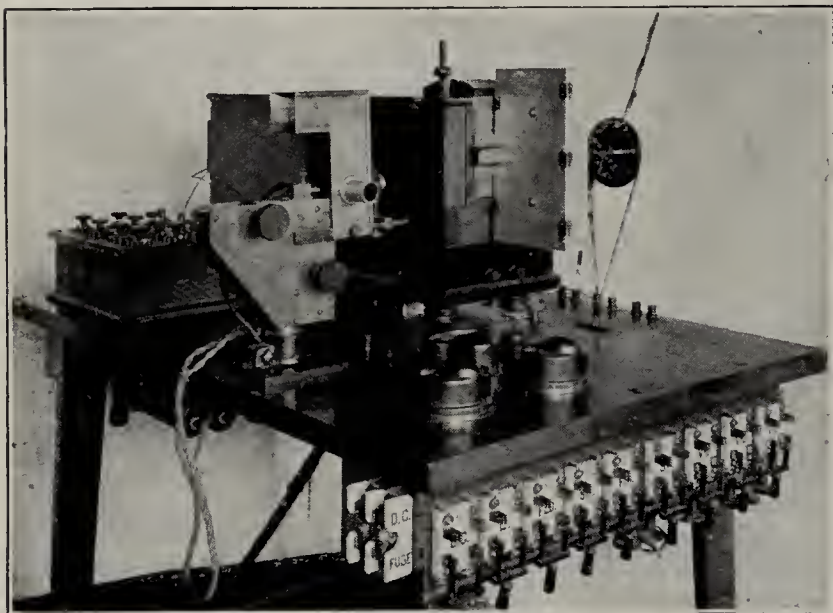


Fig. 6.—Oscillograph.

#### CLINICAL APPLICATION

The tremendous clinical importance of this electro-physical advance now becomes evident. Williams, in December, 1920, reproduced a presystolic murmur. Squier reproduced the heart sounds so as to make them audible to all in a large room. I have succeeded in getting photographic records of a hemic murmur and the râles of bronchitis. In conjunction with Dr. F. L. Hunt of the Bureau of Standards, I have recorded heart and lung sounds on the telegrafone and have amplified and reproduced them.<sup>6</sup> These records would lend themselves to the study of disease by students and medical assemblies.

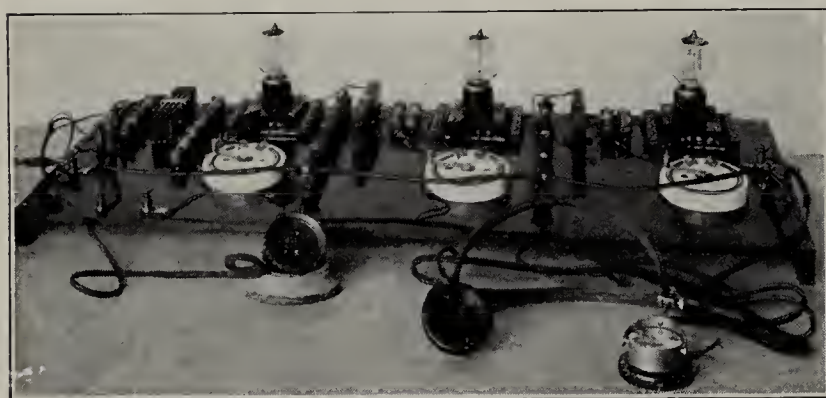


Fig. 7.—Amplifier.

#### THE AMPLIFIER

Figures 7 and 8 illustrate an amplifier which I have constructed at the Signal Corps Laboratories. The electric circuits and values are based on plans prepared by the Western Electric Company. Careful planning

of the wiring has eliminated induction between circuits, and the vacuum tubes have been suspended from sponge rubber to eliminate mechanical jar and vibration. This circuit contains no elements which make for distortion of the electric current.

#### NATURE OF SOUND

Correct recording of sound presupposes an accurate knowledge of the physical laws which govern its nature. These laws have been studied by telephone experts, whose problems are in many ways related to our new and more difficult problem.

Sound consists of simple or complex vibration. The number of these vibrations (frequencies) per second governs pitch. The amplitude, that is, the distance each particle vibrates from its position of rest, is loudness or intensity. Harmonics are exact multiples of the lowest frequency of a system, and tone quality is governed by the relative strength of all these components. Resonance is a prolongation or increase of sound due to sympathetic vibration of some body moving in the proper period. Period is the interval between a phase of vibration and its recurrence. Resonators are peculiarly constructed hollow globes designed to use this phenomenon to determine the pitch (frequency) of sounding bodies. The sound vibrations are best transmitted by certain solids and liquids. Air is not a good medium, as in air the sound varies inversely as to the

#### 3 STAGE AMPLIFIER

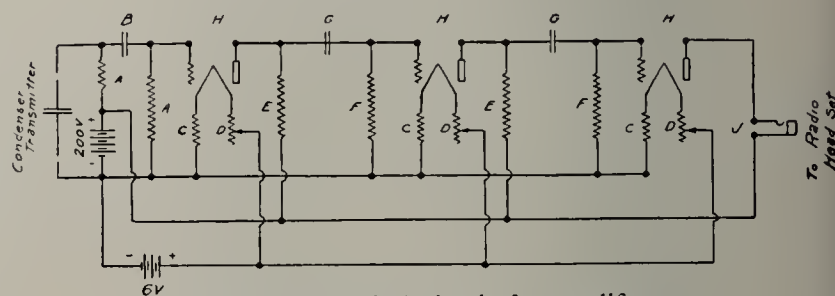


Fig. 8.—Electrical circuit for amplifier.

square of the distance. The human ear can perceive frequencies varying between 20 and 36,000 vibrations a second, although the average ear is limited to a range of 10,000, and the hearing faculty diminishes with advancing age.

Voice sounds in general range from 300 to 800 frequencies. The experience of telephone experts in voice transmission has shown the difficulty in making the surds (Latin, surdus, deaf) audible. The surds are f, p, wh, s, sh, t, th, h and r. The period of these sounds is similar to that of some cardiac murmurs (10,000 frequencies). If the telephone is to be of use in physical diagnosis, it must be made sensitive enough and must be given a sufficient range to make these sounds audible, thus giving them their proper value in the photographic record.

#### THE TRANSMITTER

The sound vibrations are transferred through the air or other medium and set the diaphragm of the transmitter in vibration. This varies the electrical current of the telephone circuit, and the amplitude of these vibrations are governed in part by its inherent period. Should this period be the same as that of the sound frequencies, an excessive value would be recorded.

The period of a vibrating body is governed by its geometric shape and by the material of which it is made. Variation of its period by limitation of its

6. Myres, M. J.: Cardiac Amplifier and Production of Records of Normal and Abnormal Cardiac and Respiratory Sounds, *Med. Mil.* 5, No. 7 (Oct.) 1921. Hunt, F. L., and Myres, M. J.: Experiments on the Recording and Reproduction of Cardiac and Respiratory Sounds, *Science*, Oct. 14, 1921.



motion and by changing the direction (damping) can raise or lower the period.

A mica diaphragm is least affected by these phenomena of resonance, and for this reason a mica diaphragm and a magnetic transmitter were used. The diaphragm of this instrument is balanced on a spring leading to an armature. This spring has its "period," but careful damping has eliminated distortion, and the variation of the damping has a clinical significance, as will appear later. Carbon transmitters are universally used in telephony. They are extremely sensitive and have inherent amplifying (microphonic) powers. They

By means of a variable damper, the period of heart and lung sounds can be ascertained. This, in questionable cases, will give rise to accurate differential diagnosis.

#### CONCLUSIONS

Experiments with the cardiac amplifier and recorder are still being conducted in the U. S. Signal Corps Research Laboratories, and I hope to be able to show sufficient records of normal and pathologic heart and lung sounds to establish the permanent worth of this system.

Army Medical School.

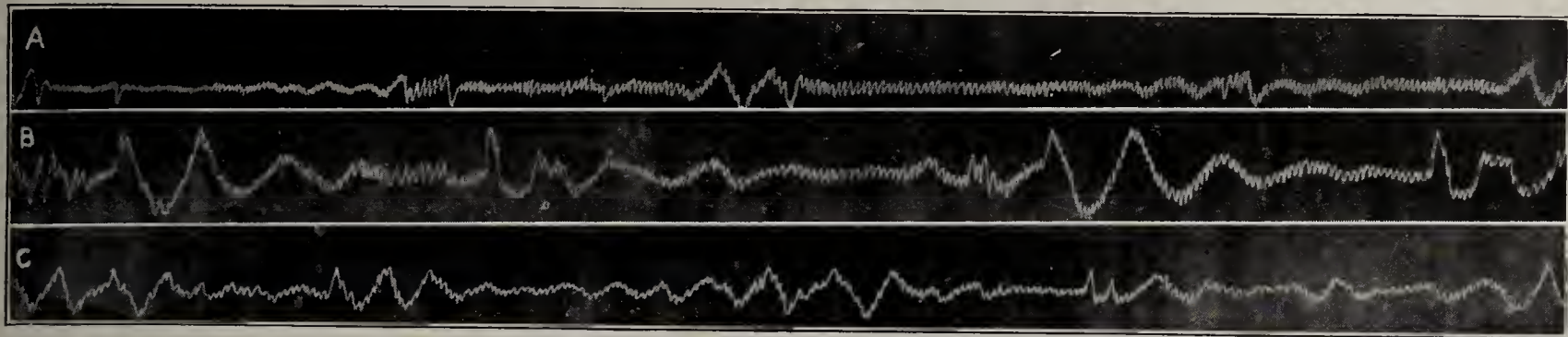


Fig. 9. Audion record, retouched for reproduction and reduced about one half. A, normal heart sound; B, systolic murmur at apex; C, double murmur. In the original,  $\frac{1}{1000}$  second =  $\frac{1}{100}$  inch in A and C;  $\frac{1}{1000}$  second =  $\frac{2}{100}$  inch in B.

are subject to extraneous roaring and to unexpected snapping sounds. When these are amplified and recorded, they lead to errors in interpretation. For this reason, I have discarded them for the study of heart and lung conditions.

Magnetic transmitters, while not as sensitive, record only sound transmitted to their diaphragms. Condenser transmitters are not as sensitive as the magnetic type. They transmit voice sound with no distortion whatever, but so far I have been unable to hear the heart sounds through them. They will operate only under heavy electrical charges and are, therefore, somewhat dangerous.

#### FUTURE OF THE AMPLIFYING TUBE IN MEDICINE

The amplifying tube is a means of enlarging the field of physical diagnosis. Where sound has entered into the study of pathologic changes in the body, little advance has been possible. All diagnosis has rested on the experience and opinion of the individual observer, but inaccuracies can be avoided by means of amplification and record.

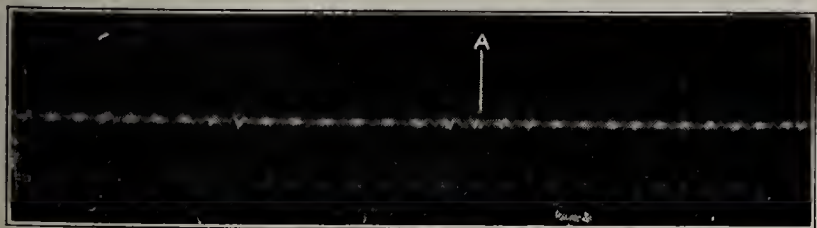


Fig. 10.—Audion record of bronchial rale in bronchitis (A), retouched and reduced about one half.

New fields have been opened. The heart sounds occupy a longer period of the cardiac cycle than generally has been known. This probably is due to vibration beyond the range of the average ear. A third sound, presystolic or diastolic, in time appears in all records of normal hearts examined. Its significance escapes me, but may be due to muscular contraction or to the rush of blood impinging on the ventricular valve.

Joint and muscular movements give rise to vibrations, and this field is new and open to investigation.

## METHODS OF PRECISION IN THE DIAGNOSIS OF DIABETES

### A NEW INSTRUMENT

HENRY J. JOHN, M.D.

CLEVELAND

The chances for error and the urgent need of precise methods in the treatment of diabetes are well illustrated by the case herewith reported.

#### REPORT OF CASE

*History.*—A girl, aged 18, was sent to the Cleveland Clinic, July 27, 1921, with the history that she had been well until last summer, when she noticed progressive weakness and loss of appetite. She was examined by her physician who found sugar in the urine and immediately put her on the so-called "Allen treatment" for diabetes, with the result that in about four months her weight dropped from 123 to 63 pounds (55.79 to 28.57 kg.). During most of this period, sugar was present in the urine. Her family history was negative. She had not menstruated for eighteen months. There had been no previous illnesses. She had had a tonsillectomy, three years before.

*Examination.*—The patient was moderately developed but markedly emaciated (Fig. 1), with a dry, ichthyotic skin; otherwise the physical findings were negative.

*Laboratory Examinations.*—The Wassermann reaction was negative. Blood examination revealed: red blood count, 3,590,000; white blood count, 9,400; hemoglobin, 65 per cent.; differential count, polymorphonuclears 82 per cent., basophils 1 per cent., small lymphocytes 17 per cent. Urine examination revealed the presence of sugar, otherwise it was negative. Phenolsulphonephthalein functional kidney test showed the excretion of 55 per cent. the first hour and 15 per cent. the second. Blood chlorids amounted to 522 mg. per hundred c.c. A glucose tolerance test was made, July 28, with the results given in Table 1, which are represented graphically in Figure 2.

#### COMMENT

The condition was diagnosed as diabetes mellitus by the patient's physician on the basis that she had sugar in the urine. She was put on a rigidly restricted diet and kept on it until she had lost almost 50 per cent. of



her weight; but she still showed sugar in the urine. Further examination revealed that she had a normal blood sugar content; and her ability to utilize carbohydrates—the glucose tolerance test—was demonstrated to be normal by a perfectly normal curve; that is, she was able to utilize all the carbohydrates one could give her. This was strikingly demonstrated in the hospital

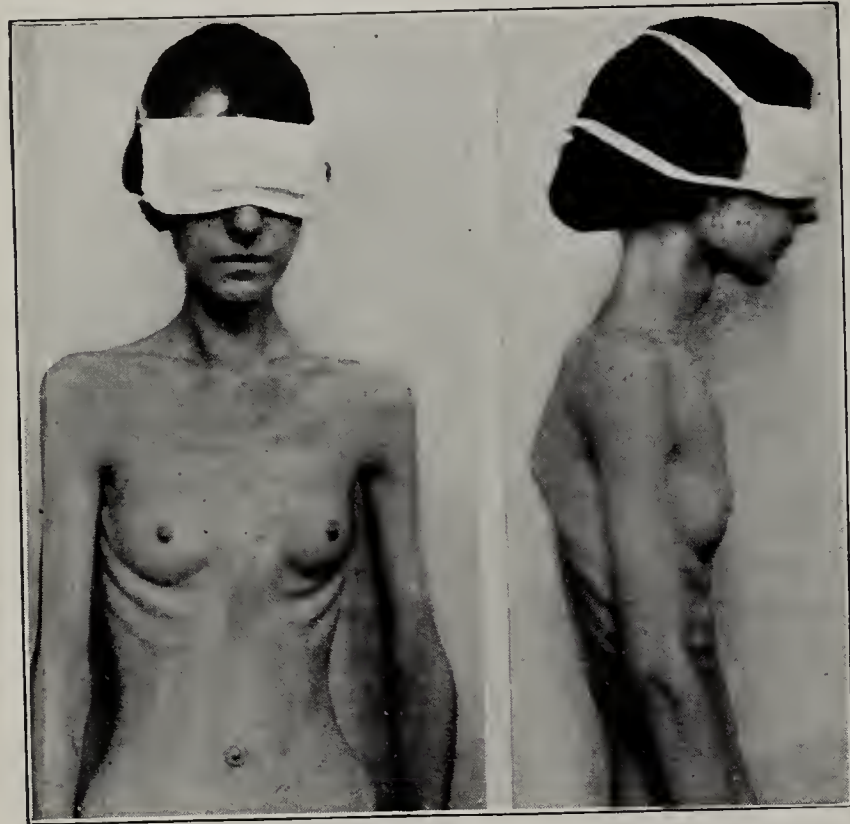


Fig. 1.—Patient at the end of four months under Allen treatment for diabetes.

later on, when a heavy carbohydrate diet, high in calories as well, failed at any time to bring her blood sugar above the normal level (Table 2). She has been kept on this high carbohydrate diet to the date of this writing (Sept. 14, 1921), and her last blood examination shows the blood sugar is still normal.

These findings show clearly that in this case we were not dealing with diabetes, in spite of the fact that there was sugar in the urine, but with a kidney permeable to sugar, a fairly common condition.

TABLE 1.—RESULTS FOLLOWING THE INGESTION OF ONE HUNDRED GRAMS OF GLUCOSE BY MOUTH

	Before Ingestion of Glucose	After the Ingestion of Glucose				
		½ Hr.	1 Hr.	2 Hrs.	3 Hrs.	4 Hrs.
Blood sugar (mg. per 100 c.c.).....	84	131	141	102	84	+
Urine sugar.....	+	+	+	+	+	+

The diagnosis of diabetes mellitus was, therefore, a mistake, but a legitimate mistake: one that would naturally be made by any one without access to biochemical laboratories, one based on the old teaching that sugar in the urine means diabetes. Allen says: "Without hyperglycemia, there is no diabetes"; but how is this dictum to be followed without ready means for establishing the presence or absence of hyperglycemia? Accurate blood sugar estimations require special training and laboratory equipment. Blood cannot be mailed to the laboratories for examination, since within a few hours, the enzymes change the sugar content. How then can laboratory facilities be made available to the general practitioner?

METHOD DEvised TO FACILITATE ACCESS TO BIOCHEMICAL LABORATORIES

If a delayed estimation is to be made, it is evident that something must be added to the blood which will kill the ferment, so that the specimen may be preserved indefinitely and an accurate analysis made at any time, whether three or three hundred hours from the time it is taken, and that whatever is used for this purpose shall not prevent constant results.

The standard laboratory technic for the preservation of blood for blood sugar analysis is briefly: One cubic

TABLE 2.—RESULTS OF SUBSEQUENT BLOOD SUGAR AND URINE EXAMINATIONS

Date	Blood Sugar (Mg. per 100 C.c.)	Urine Sugar
7/27.....	125	+
8/ 4.....	...	—
8/ 5.....	...	—
8/ 6.....	...	+
8/ 8.....	100	+
8/ 9.....	...	—
8/10.....	...	—
8/11.....	...	—
8/12.....	81	—
8/13.....	...	+
8/17.....	...	+
8/22.....	75	+
8/23.....	...	—
9/13.....	73	—

centimeter of blood (either whole blood or plasma) is accurately measured in an Ostwald pipet and run into 9 c.c. of distilled water. If whole blood is used, this is allowed to lake completely, after which the solution is saturated with picric acid and allowed to stand for from twenty to thirty minutes. A definite portion of the clear supernatant liquid is then taken, sodium carbonate is added, and the mixture is heated in a water bath for twenty minutes, when it is diluted to 12.5 or 25 c.c., and its color compared in a colorimeter with a standard quantity of glucose treated in a like manner.

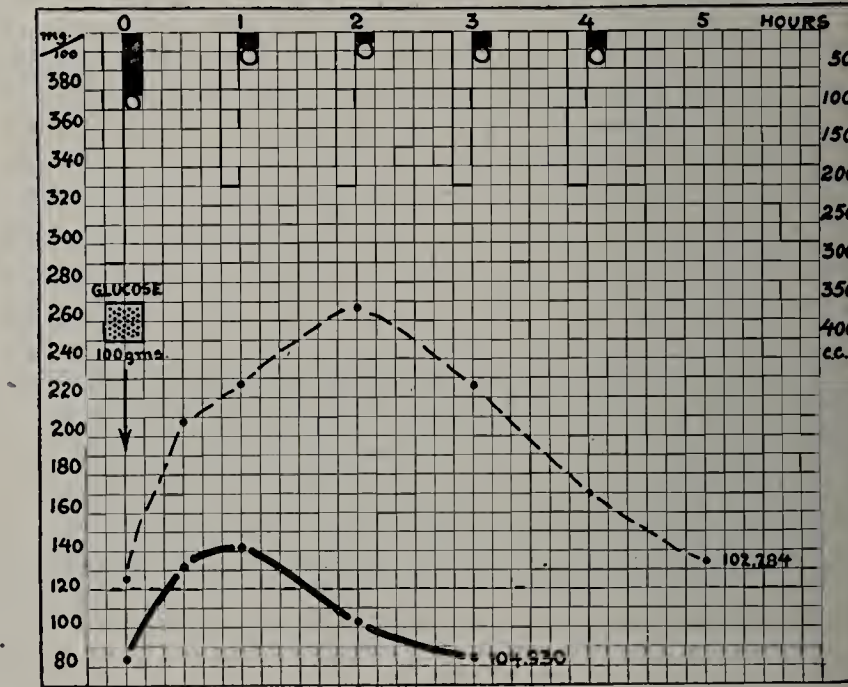


Fig. 2.—Glucose tolerance curve of patient, proving erroneous diagnosis of diabetes in patient showing sugar in the urine; 104.930, the curve of the patient; 102.284, the curve of a diabetic patient. (Note the delay in the rise and fall of the diabetic curve). The light spaces at the top indicate water intake. The black spaces at the top indicate urine output. The circles indicate sugar in the urine.

My first attempt to meet the problem of delayed examination was to run the whole blood directly into a saturated solution of picric acid in water; but I soon found that this made a rather heavy coagulation of the blood and that the readings, when checked against a



standard method were inaccurate. I then substituted for the saturated solution of picric acid very weak solutions, with the results shown in Table 3.

The analysis of these figures shows that 2 c.c. of saturated picric acid solution to 7 c.c. of water kills the enzymes and preserves the blood sugar.

This being established, it next became necessary to devise some method for securing and mailing the speci-

TABLE 3.—BLOOD SUGAR ESTIMATION, 1 C.C. OF SATURATED PICRIC ACID TO 8 C.C. OF DISTILLED WATER

	Standard Method		New Method			
	Blood Plasma	Whole Blood	Immed. Exam.	6 Hrs. Later	18 Hrs. Later	24 Hrs. Later
Sheep's blood.....	30	36.5	36.5	...	..	29.3
Case 106,017.....	288	300	288	292	..	..
Case 105,417.....	...	158	173	167	..	..
Case 106,053.....	...	75	91	...	70	..
Case 106,040.....	138	134	130	...	..	143
	98	113	102	...	..	92
	72	79	79	...	..	81
	67	69	75	...	..	88
Case 106,448.....	...	...	103	...	..	100
Case 106,098.....	...	...	117	...	..	98
Case 106,113.....	...	...	109	...	..	111
Case 106,038.....	...	...	100	...	..	96

men. To this end, I utilized the principle of a Keidel vacuum tube, placing in it a definite quantity of the picric acid solution, that is, 9 c.c. This tube (Fig. 3) is sent to the physician, who adds approximately 1 c.c. of the patient's blood, filling the tube to the marked point. Notice that I say approximately. Every

laboratory worker knows how difficult it is to run in from a vein an accurate quantity of blood. Even those that are most skilled fail in the attempt. But by this

method, the burden of accuracy is placed on the laboratory man, who can readily determine the exact amount of blood when the specimen reaches the laboratory, since the actual blood content will be the difference between the total contents of the tube and 9 c.c. The contents of the tube are emptied in the following manner: The tube is inverted with its large end upward, pointing into a narrow graduate. By a quick tap

Fig. 3.—Tube devised for securing, preserving and shipping specimens of blood for laboratory examination.

with a hammer, especially designed for this purpose (Fig. 4), made of hard steel with a sharp point, a

Fig. 4.—Hammer devised for breaking a hole in the top of tube shown in Figure 3.

hole is made in the top of the tube and the liquid immediately runs out into the graduate. The calculations are made according to the following formula:

$$\frac{\text{Reading standard}}{\text{Reading unknown}} \times \frac{\text{Volume unknown}}{\text{Volume standard}} \times \frac{\text{Quantity standard (in c.c.)}}{\text{Quantity unknown (in mg.)}} \times 100$$
  
= milligrams per hundred cubic centimeters.

The tube described above is made as illustrated with a sterile needle attached, so that all that is necessary is

to put the tourniquet on the patient's arm, sterilize the point of insertion with alcohol, and insert the needle, after which the sealed end of the tube within the rubber tubing is broken by means of a hemostat (Fig. 5) and

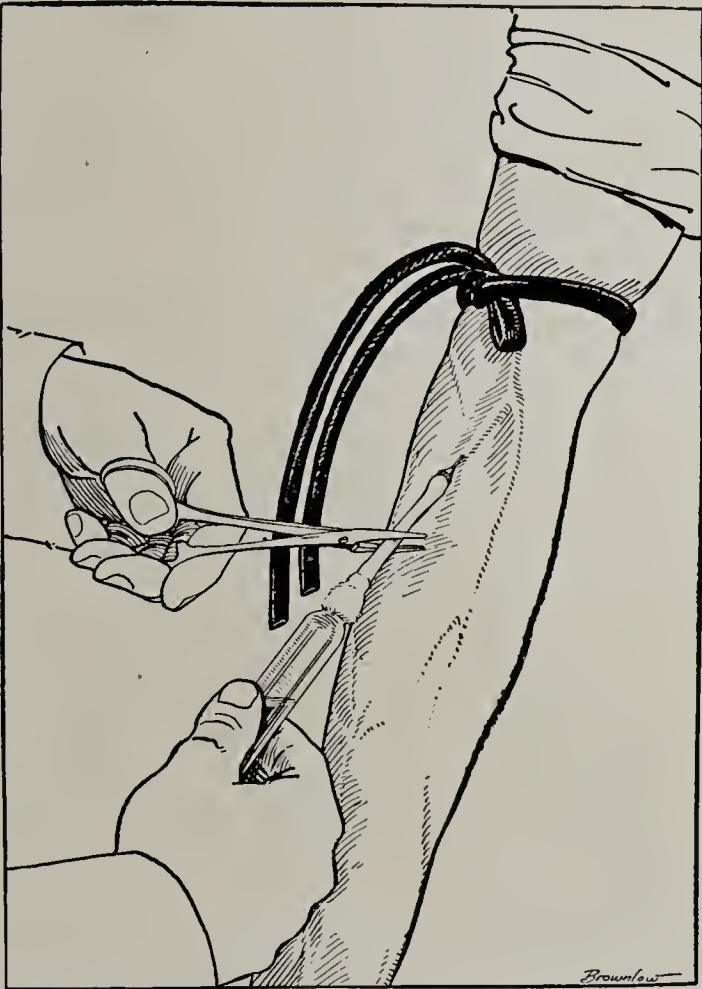


Fig. 5.—Method by which blood is drawn into the specially devised tube shown in Figure 3.

the suction draws in the blood. The mixture should be immediately well shaken and may then be mailed to any biochemical laboratory equipped for blood analysis.

TABLE 4.—BLOOD SUGAR ESTIMATION, 2 C.C. OF SATURATED PICRIC ACID TO 7 C.C. OF DISTILLED WATER

	Standard Method		New Method					
	Plasma Sugar	Whole Blood	Immed. Exam.	6 Hrs. Later	18 Hrs. Later	24 Hrs. Later	48 Hrs. Later	72 Hrs. Later
Sheep's blood	30	36.5	34	...	...	31.7	...	...
Case 106,017...	288	300	285	272	...	...	...	...
105,417...	...	158	187	176	...	...	...	...
106,029...	85	...	95	89	...	...	...	...
106,053...	...	75	92	...	90	...	...	...
106,040...	...	...	...	...	...	...	...	...
	155	140	146	...	...	146	...	...
	98	113	100	...	...	93	...	...
	67	69	...	...	...	75	...	...
106,146...	95	95	90	100	...	97	100	88
	140	117	130	...	...	...	123	...
	130	101	109	...	...	...	...	130
	147	147	123	...	...	...	111	106
	91	110	90	...	...	...	63	63
	96	77	91	...	...	...	91	100
	...	...	102	...	...	106	...	...

SUMMARY

1. The diagnosis of diabetes in a number of cases cannot be established without blood sugar determination.
  2. A simple time-saving and accurate method is described whereby blood sugar determinations are made readily available.<sup>1</sup>
- Euclid Avenue at Ninety-Third Street.

1. The sugar tube described in this article can be obtained from Hynson, Westcott and Dunning.



## Clinical Notes, Suggestions, and New Instruments

### A TRACTION SPLINT FOR FRACTURED METACARPALS AND PHALANXES

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Associate Surgeon, Robert Packer Hospital

One of the problems of treating fractures of the metacarpals and phalanges is the obtaining of proper traction. The ordinary straight splint does not suffice, as its proximal



Fig. 1.—Roentgenogram taken after application of splint.

end cannot be fixed properly. We must have an appliance that will allow constant, even traction and naturally give the most comfortable dressing.

The splint here described is made of cast aluminum, is very light, and does not interfere with the taking of satisfactory roentgenograms (Fig. 1). It also allows fluoroscopic examinations. All these points are of great value.

The body of the splint extends upward on the forearm and conforms with the contour of the wrist and proximal half of the palm. A palm piece which extends the whole width of the palm with ears on each side prevents abduction and



Fig. 2.—Splint applied to all fingers.

adduction of the hand (Fig. 2). The palm piece is notched so that it prevents lateral movement of the finger pieces. A threaded hole goes through the palm piece at the various positions of the finger splints, and accommodates a thumb screw which holds them in position (Figs. 2 and 3).

The finger splints are slightly concave and have a post at the distal end. This post allows the adhesive loop to go around it and furnishes the one point of fixation (Fig. 3) for the traction. The proximal half of the finger splint is

slotted so that it allows free movement of the splint. The proximal end is turned down in such a manner as to allow the surgeon a firm point to apply the traction (Fig. 3). When the desired traction is obtained, the thumb screw is tightened (Fig. 3).

On the body of the splint there are two sets of grooves to admit the thumb splint. This allows the splint to be used for either hand (Fig. 3). Another great advantage of the splint is that whatever finger splints are not needed may be removed (Fig. 3).

### FIBROID TUMOR OF OVARY IN A GIRL OF FOURTEEN

A. W. MACDONALD, M.D., VALLEY CITY, N. D.

The case herewith presented is of interest not only on account of the relative rarity of true fibroids of the ovary, but also on account of the youth of the patient, the age of the youngest patient reported in the literature<sup>1</sup> being 17 years. As Clark and Gabe,<sup>2</sup> in a recent case report, gave a general review of the subject, repetition is unnecessary.

#### REPORT OF CASE

*History.*—A. C., aged 14 years, referred to me by Dr. W. B. Wanner, had first menstruated, June 4, 1920, and

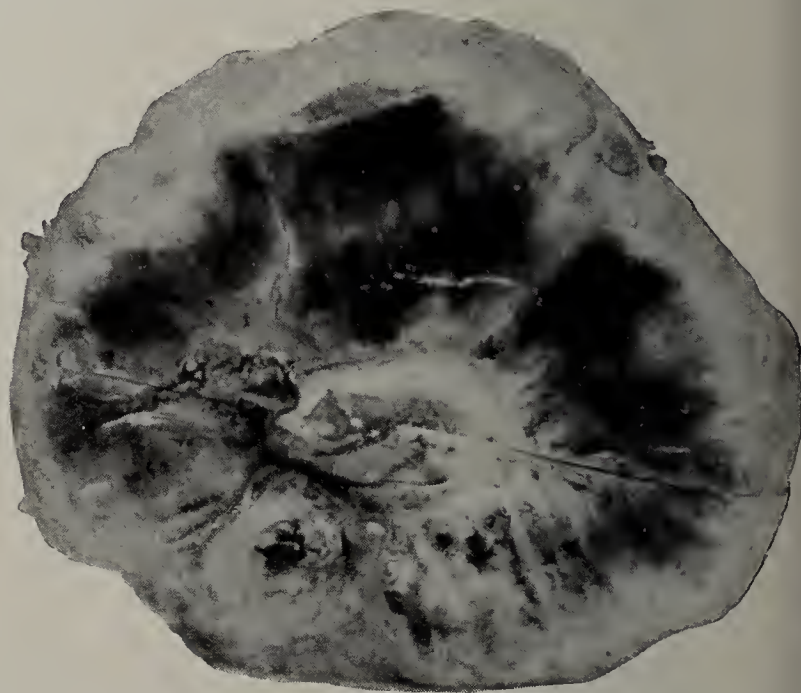


Fig. 1.—Under surface of tumor showing ovary cut through for microscopic section.

menstruation occurred regularly until Jan. 30, 1921, which was the date of the last period. The family history was negative. Late in 1918, the patient noticed slight pain in the left lower abdomen, which gradually became more severe during 1919 and 1920. This pain or discomfort was increased

on taking exercise, but was not thought of sufficient moment to warrant consulting a physician. The mother, during 1920, had noticed the gradual enlargement of the child's abdomen, but had thought it incident to her natural growth. Two weeks before her admis-

sion to the hospital, the child had gone for a horseback ride of 5 miles, and on returning home had fallen from her horse in a faint. She arose at once, walked into the house and complained of severe abdominal pain and weakness. After remaining in bed for three hours, she got up, but did not feel

1. Hellman: Ovarian Fibroids, Surgery., Gynec. & Obst. 20: 692 1915.

2. Clark and Gabe: Fibroma of Ovary, Am. J. Obst. & Gynec. 1 603 (March) 1921.



Fig. 3.—Splint applied to one finger.



well, and complained of pain over the entire abdomen. During the next three days she was up and around, but on the evening of the third day Dr. Wanner was called, and found the patient's temperature 100 F., pulse 90. There was moderate distention of the abdomen, with extreme pain on palpation. A large tumor mass was felt occupying the right abdomen, extending from the pubes to the costal margin. The patient was ordered to remain in bed, and an opiate was administered. During the next ten days the abdominal distention gradually increased, causing difficulty in respiration, intermittent pulse and slight cyanosis.

*Examination.*—The patient was well developed. The abdomen was greatly distended; the pulse rapid, weak and intermittent; respiration, difficult; marked cyanosis; a slight icteric tinge to the conjunctiva; no edema present. Owing to the patient's weakened condition, nothing more than a superficial examination could be made at this time, but after stimulants were administered, a large, hard tumor mass could be outlined, occupying the center and right abdomen; vaginal examination revealed an unruptured hymen; the cervix uteri was low down but of normal size.

Examination of the urine revealed specific gravity, 1.026; color, dark amber; appearance, cloudy; albumin and sugar, negative; large amount of urates, phosphates and bile pigments.



Fig. 2.—Lateral view showing ovary at left, and at right surface which was adherent to liver.

Blood examination revealed: leukocytes, 22,500; erythrocytes, 4,489,700; hemoglobin, 80 (Sahli); blood pressure, systolic, 100, diastolic, 60. It was decided to remove the abdominal tumor by operation.

*Operation and Result.*—The second day after admission the patient had sufficiently recovered to admit of an anesthetic being given. Under light ether anesthesia supplemented by morphin, the abdomen was opened through a right rectus incision. The peritoneum was found slightly adherent to the tumor mass, and when opened a large quantity of bile-stained, clear fluid, was evacuated. The tumor was pediculated. It occupied the center and right abdomen, being slightly adherent to the parietal peritoneum, and densely adherent to the under surface of the liver. The pedicle, including the left ovary, was ligated and removed with the tumor, and the abdomen was closed.

On gross examination of the tumor, it was found to consist of a firm, semihard mass the shape of a round disk, 10½ inches (27 cm.) in diameter, and weighing a little more than 10 pounds (4.5 kg.). Studded over the surface were several small encapsulated cysts and calcareous deposits. Ovarian fibroma was diagnosed, which was substantiated by the pathologists' report.

The patient made an uneventful recovery, except that the intermittence of the pulse continued for two weeks, and she had an irregular temperature, to 99.5. At the end of the third week she was discharged in apparent good health.

## A NEW RADIUM UTERINE APPLICATOR

PAUL EISEN, M.D., DETROIT

A very serviceable instrument for the intra-uterine application of radium which is easily inserted and accurately held in place has been fashioned in the following manner: To the

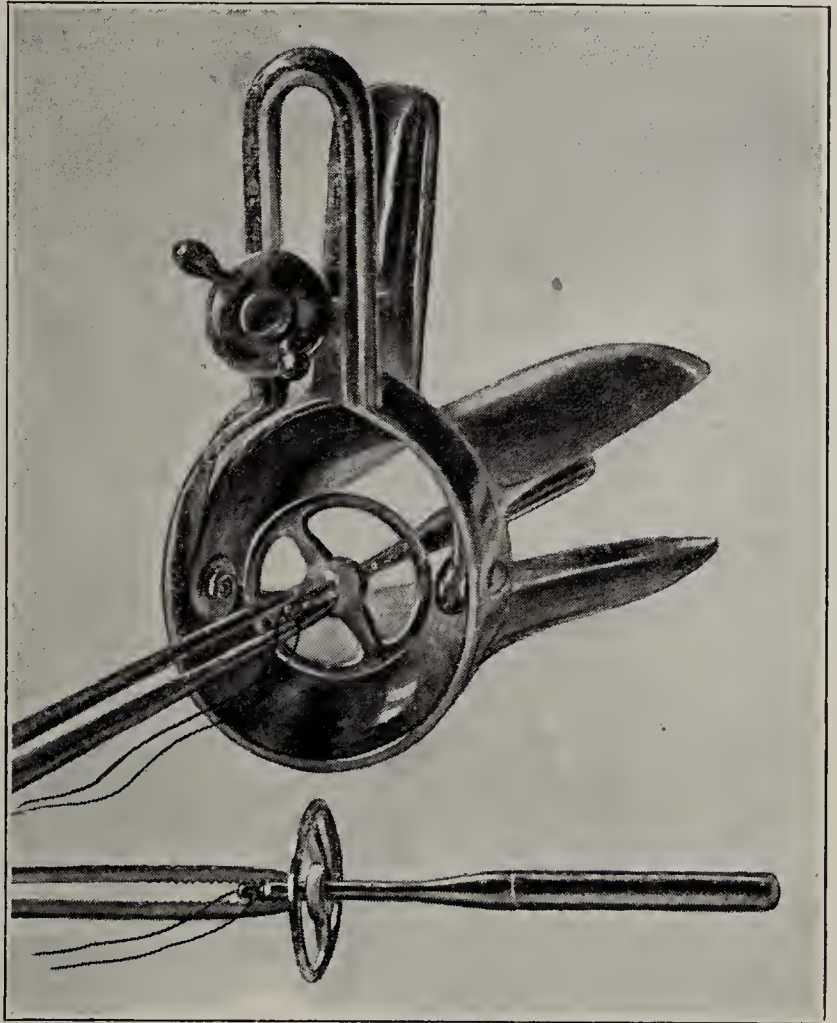


Fig. 1.—Above, method of insertion of applicator; below, applicator.

capsule which contains the radium a short stem is attached on which a disk with two large windows is firmly sealed. Beyond this disk is the end of the stem with an eyelet to

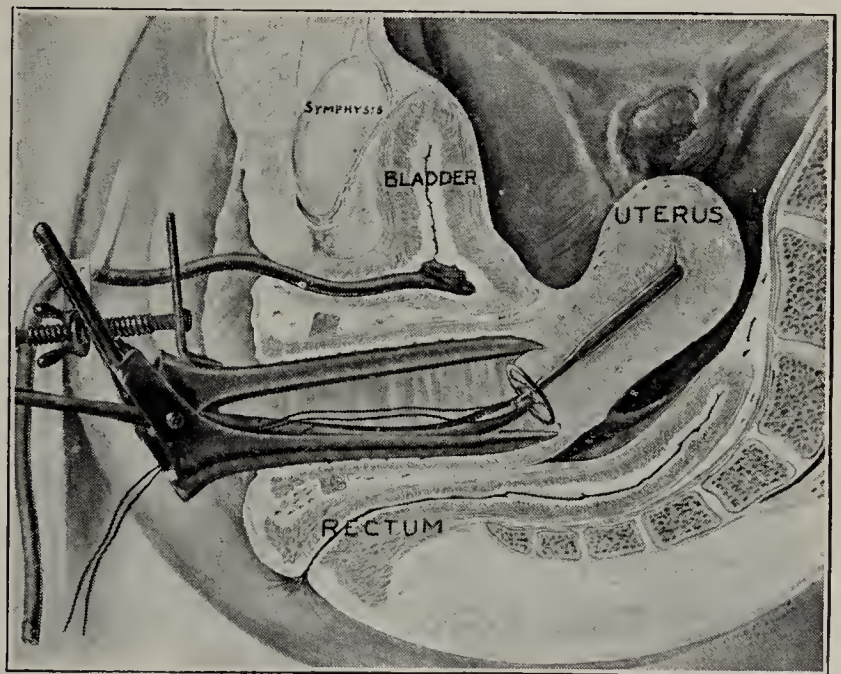


Fig. 2.—Position of applicator in uterus.

attach a silk thread. The double advantage lies in the fact that the windows in the disk allow its easy insertion under inspection into the cervical canal, and that gauze packing against the disk holds the applicator securely in place, besides pushing the rectum and emptied bladder away from the radium. The illustrations show the applicator, the method



of insertion with a long speculum whose blades are equally long and are opened just far enough to let the cervix slip in between, and the position the applicator occupies when inserted with curved forceps.

2201 Jefferson Avenue.

### TURNBUCKLE EXTENSION APPARATUS FOR THE REDUCTION OF FRACTURES

EDWARD J. LEWIS, M.D., CHICAGO  
Attending Surgeon, Cook County Hospital

Until very recent times, it has been the custom to regard fractures, other than compound fractures, as within the domain of minor surgery. In our large hospitals, the care of these cases has been entrusted to the junior surgeon or to the members of the resident staff, the patient receiving no further attention from the chief unless an open reduction becomes necessary.

Analyses of great numbers of fracture cases from our large clinics have brought forth results none too flattering. Our interest in these so-called "simple" fractures has been stimulated, moreover, by the great numbers of fracture cases seen during the war, and intensified by the searching inquiries on the part of our industrial commissions and compensation boards. In response to the demand for improvement, fracture wards have been established in some of our larger hospitals, and various new methods of treatment are being suggested and tried.

The appliance which I have designed is giving encouraging results in the reduction of certain fractures of the long bones. It consists of a number of units, usually three or four, all of which are alike. Each unit is made up of two steel rods which are brought into continuity by a turnbuckle having right and left threads. The rods are threaded at both ends and along their entire length, except for a short interval, to allow a hold for the wrench. Each unit acts as a truss rod, or support, for the broken bone by being locked at each end into anchor posts which have been incorporated into the plaster while the cast is being applied. The anchor posts consist of flat pieces of steel shaped to an inverted T. The base of the "T" is firmly set in the plaster; and the vertical limb, which protrudes, is perforated to receive and hold the end of the truss rod by means of lock nuts.

When four of these units are applied, they give the broken bone a sufficiently powerful support to maintain immobilization of the limb with most of the plaster cast cut away, as might be necessary in a compound fracture.

In fractures, other than compound, it is sufficient to divide the cast into an upper and a lower segment by making a circular incision at, or about, the point of the fracture, dividing the plaster throughout its entire thickness. By adjustment of the length of the truss rods at the anchor posts and through the central turnbuckle, the angulation and shortening

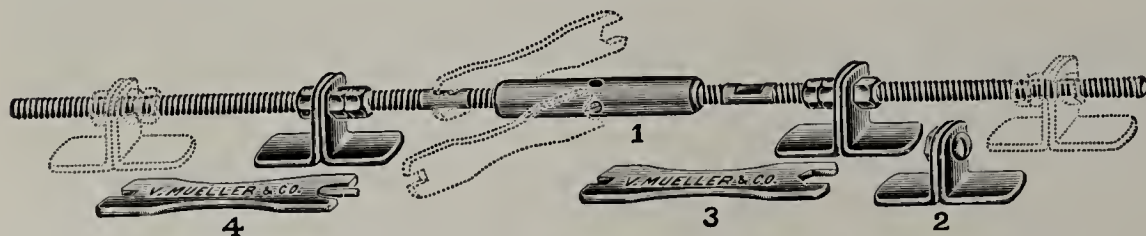


Fig. 1.—One of the Units: 1, turnbuckle; 2, anchor post; 3 and 4, two forms of wrench.

of the bone may be overcome. The finer manipulations are best carried out with the aid of the fluoroscope.

In applying the plaster cast, special attention is to be given to the use of sufficient and properly applied padding. The joints at the ends of the broken bone are flexed to a right angle if possible, and the cast allowed to extend for some distance above and below the injured part. The preliminary extension may be carried out very gradually if advisable; and the pull may be readily increased or decreased by adjusting the lock nuts.

Thus far, we have found this appliance most useful in transverse and dentate fractures of the tibia, and of the shaft

of the femur, and in fractures of one or both bones of the forearm. It has proved to be of particular value in cases with overriding or angulation. The results in oblique and spiral fractures have not been quite so satisfactory.

The advantages claimed for this appliance may be briefly stated. The instrument is light, and, when broken down, may be readily carried in the emergency bag. Certain frac-

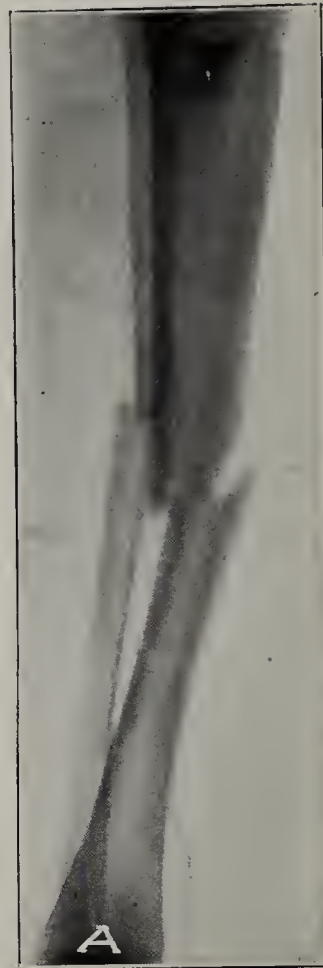


Fig. 2.—Fracture of both bones of the leg.

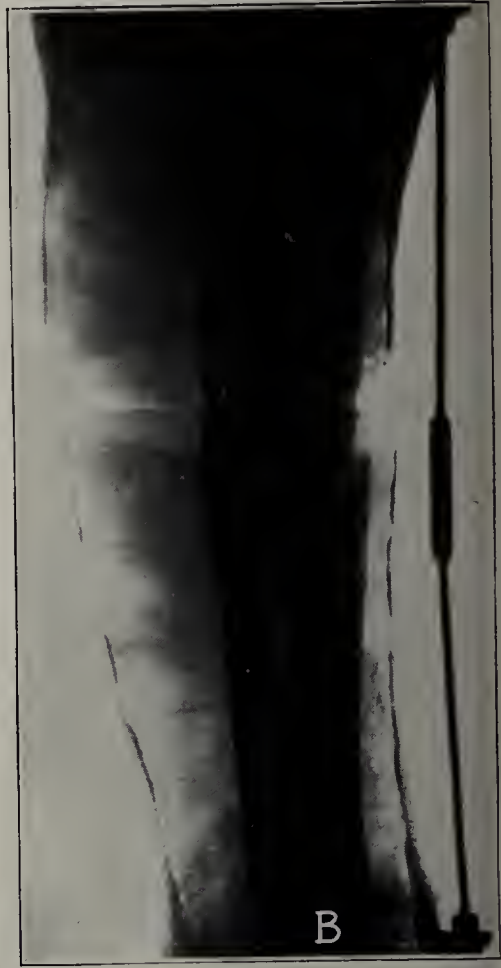


Fig. 3.—Appliance in use in connection with a split plaster cast.

tures of the long bones can be reduced without a general anesthetic or the use of expensive or cumbersome apparatus, such as the Hawley table or the Balkan frame. The extension and reduction may be carried out gradually; and the expenditure of physical strength on the part of the surgeon is unnecessary. The patient can be moved as soon as the extension apparatus is applied, and may be readily taken to the roentgen-ray laboratory for examination, and the reduction completed under fluoroscopic control. The extension apparatus is applied with the adjacent joints flexed, permitting a maximum of muscle relaxation. The segments of the plaster cast may be reunited after reduction is complete with

a feeling of assurance that the exactness of the fluoroscopic reduction will not be subsequently lost in the application of a new cast. The surgeon may apply the cast as soon as he arrives, after putting the parts in what appears to be good position. The anchor posts may be incorporated into the plaster at this time, and the rest of the appliance used only in case that a subsequent roentgen-ray examination indicates a need for correcting the position of the fragments. By this early and complete immobilization, further trauma to the soft parts is avoided, and muscular contractures can be prevented. In extensively comminuted fractures, it is useful in maintaining the length of the bone during healing.

25 East Washington Street.

**Antityphoid Vaccination Reduces Morbidity.**—By voluntary vaccination, typhoid in the Army was reduced 70 per cent., and by compulsory vaccination was well-nigh eliminated. *Pub. Health Rep.* 36:2313 (Sept. 23) 1921.



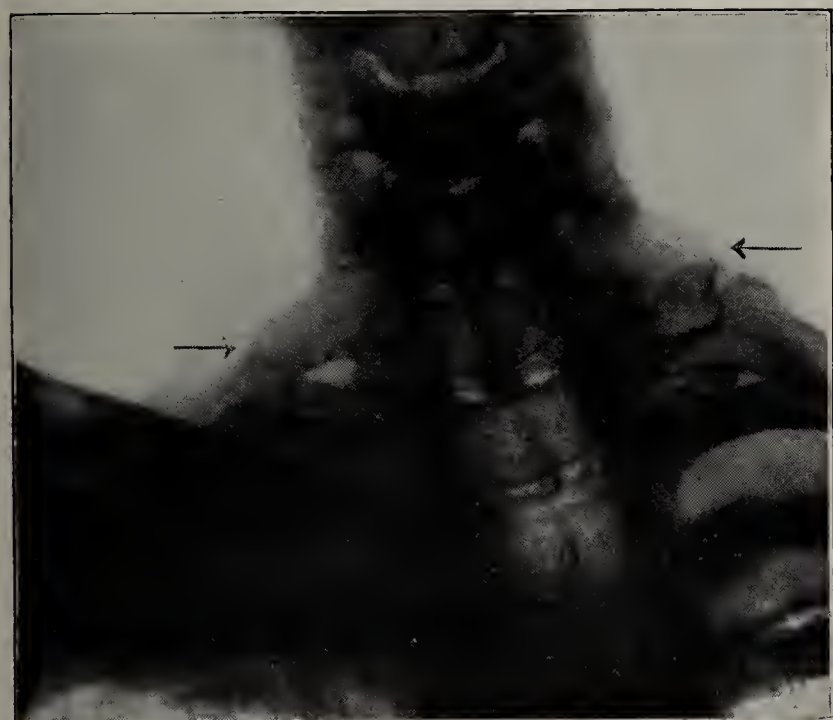
# A CASE OF SYRINGOMYELIA ASSOCIATED WITH CERVICAL RIBS

CORA HENNER MORRIS, M.D., NEW YORK  
Intern, Neurological Service, Bellevue Hospital

In an article entitled "The Coincidence of Cervical Ribs and Syringomyelia," Dr. Peter Bassoe<sup>1</sup> concludes that the presence of cervical ribs should arouse suspicion of the presence of other deformities.

This coincidence has an explanation in the development of the central nervous and skeletal system. In an embryo, of the twelve somites, there is a close association in the cervical region of the neural ectoderm, which is just closing over to form the neural tube, and the surrounding mesenchyma destined to form the bony framework, as well as the vascular supply of the spinal cord. It is easy to understand how a defect in germ plasm, causing abnormal development of one layer, might also affect the other, thus causing an association of cervical ribs with a syringal cavity in the spinal cord.

It is well known that syringomyelia may be found at necropsy in persons never having shown any clinical evidence of the defect. Both the cavity and the extra ribs gave no signs in the case herewith reported until the patient was 33 years old, which illustrates the fact that signs and symptoms of cervical ribs are often absent until the fourth decade.



Cervical region: arrows point to the cervical ribs.

The following case is another example of the coincidence of cervical ribs and syringomyelia and is reported on account of the relative rarity of these cases.

## REPORT OF CASE

**History.**—J. F., aged 63, Jew, junkman, was admitted to Bellevue Hospital in the medical service, July 10, 1921, complaining of numbness and loss of power in the right hand, of pain in the right shoulder and back of the neck, of four weeks' duration and of increasing severity. Thirty years before, after carrying a heavy bundle on his shoulder, he noticed a sudden numbness in the right hand. This was followed later by stiffness in the fingers and a contracture of the right thumb in flexion-adduction deformity. Four years ago, he was in Mount Sinai Hospital for three weeks with irregular twitchings of the left arm and hand.

**Examination.**—Neurologic examination revealed the right thumb in flexion-adduction deformity, weakness in flexion and extension of the right and left fingers, and atrophy of the intrinsic hand muscles. There was dissociated sensation, with diminution of pain and temperature sense bilaterally at the first and second dorsal vertebrae and below the second dorsal to the toes on the left side. The abdominal reflexes

1. Bassoe, Peter: The Coincidence of Cervical Ribs and Syringomyelia, Arch. Neurol. & Psychiat. 4: 542 (Nov.) 1920.

were absent, except the lower left; deep reflexes were active and equal, with bilateral clonus and Babinski sign. The roentgen ray showed bilateral cervical ribs. The spinal fluid, blood Wassermann reaction and urine were all negative.

## EXTENSIVE HEAD INJURY FROM CIRCULAR SAW

GEORGE A. DAVIES, M.D., Asbury Park, N. J.

A colored laborer, aged 25, while working under a rapidly revolving circular saw, attempted to rise, when his head came in contact with the saw (Fig. 1), which was 6 feet (183 cm.) in diameter, the teeth 2 inches (5 cm.) in length.

Examination a half hour following the accident disclosed a clean cut wound in the skull, 1.25 cm. (½ inch) wide, extending from the left mastoid to the median line. Profuse hemorrhage had taken place, and considerable brain tissue lay on the stretcher. The pulse was scarcely perceptible, and the patient was apparently moribund. The wound had been treated with iodine and a tight dressing applied by the first aid man immediately after the injury, which doubtless was an important factor toward controlling hemorrhage and subsequent infection, and favoring ultimate recovery.

The wound was swabbed with iodine and tightly packed. The scalp was sutured over the gauze, leaving free drainage from both ends of the wound. This resulted in complete hemostasis. Reaction soon took place, and within an hour the man had a fairly good pulse and required a hypodermic of morphine to keep him from injuring himself. Next day he was conscious at intervals, but motor aphasia and paralysis of the



Fig. 1.—Circular saw which caused head injury.



Fig. 2.—Appearance of wound four weeks after injury; the ear has been partially cut away.

right arm were present. Forty-eight hours after the accident the patient could write a few words by using his left hand. From this time he understood everything said to him, but could not express himself. He required morphine for four nights for restlessness. Amylene hydrate, from 2 to 4 c.c. (30 to 60 minims) was then substituted with the best of results. The wound was not dressed for seventy-two hours,



when the packing was removed. Bleeding was rather free from the mastoid end of the wound, so this was packed snugly and a through and through gauze drain continued. At the next dressing, irrigation with surgical solution of chlorinated soda (Dakin's solution) was started and continued for ten



Fig. 3.—Incision produced by saw.

days. As the saw had carried some hair and dirt down into the brain (particles coming away during the irrigations), serious infection was expected. However, the infection was slight and, as shown in Figure 2, reproduced from a photograph taken four weeks after the accident, a healthy, but largely granulating wound resulted. The patient left the hospital eight weeks after the injury, fully recovered. Six months later he had gained in weight and was apparently in excellent health, with speech and memory unaffected.

110 Grand Avenue.

#### MYOPLASTY TO RESTORE FUNCTION IN EXTENSOR COMMUNIS DIGITORUM

WILLIAM JACKSON MERRILL, A.M., M.D., PHILADELPHIA

Sergeant J. received a stab wound in the left forearm, March 5, 1918, which completely divided the left extensor

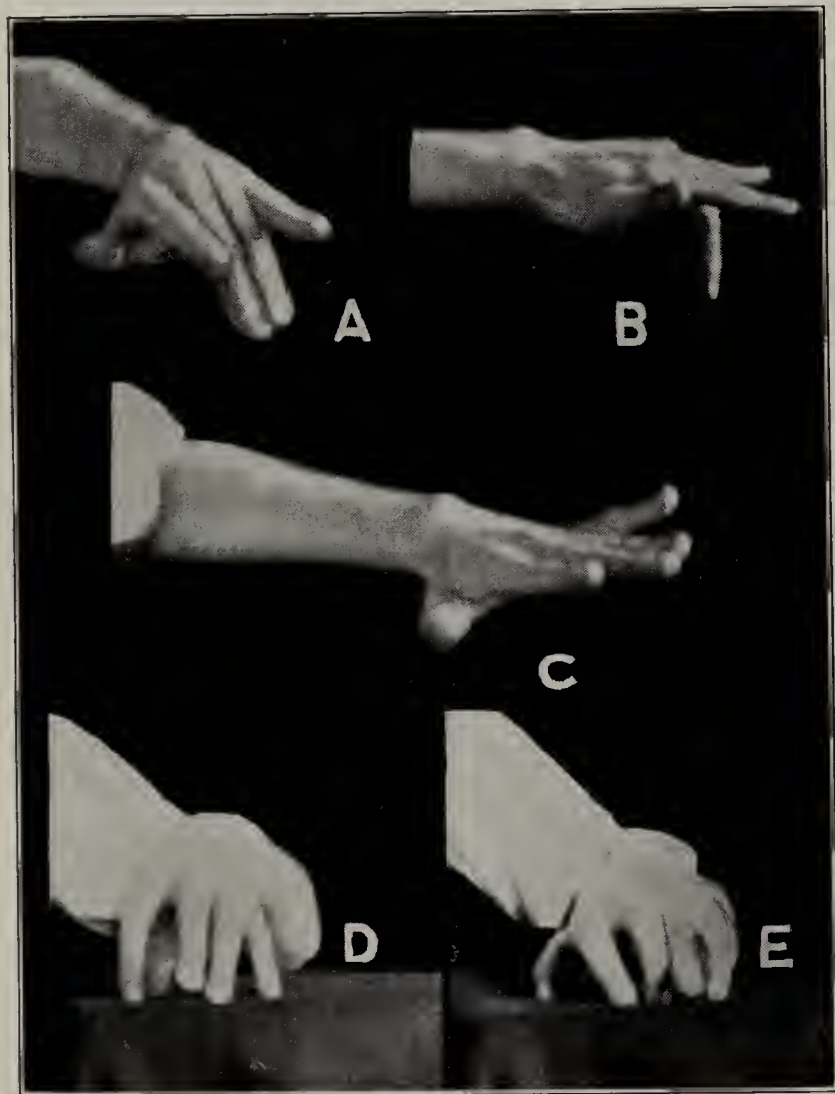


Fig. 1.—A, loss of power of extension of middle and ring fingers before operation; B, same, side view; C, ability to extend fingers after operation; D, ability to raise middle finger independently; E, ability to raise ring finger independently.

communis digitorum muscle at about the juncture of the middle and distal thirds. The wound was simply dressed,

and it healed in a short time with but little suppuration. The function of the muscle was completely destroyed. The position of the left middle and ring fingers is shown in Figure 1 A and B. There was an irregular scar adherent to the underlying structures.

The operation was performed fourteen months after the injury. An incision about 5 inches (12.7 cm.) long was made over the muscle. An organized blood clot and dense scar tissue about three-fourths inch (19 mm.) long separated the space between the portions of the severed muscle and was firmly bound to the adjacent structures (Fig. 2 A). This was completely resected, and the fresh muscle ends were approximated by parallel longitudinal sutures (Fig. 2 B). Strips of fascia were taken from the adjacent muscles to cover the communis muscle where its fascia had been destroyed. A thin pad of fat was stitched over the repaired muscle and the skin closed without drainage. The band was placed on a splint which dorsally flexed the wrist and extended the fingers. This position was maintained for about six weeks, after which time mild function was begun at intervals. Three weeks later, full function and special exercises were given to reestablish the normal muscle control. Figure 1 C shows the restoration of normal extension.

The patient is an organist, and the delicate control of these fingers is of vital importance. Figure 1 D shows the ability to raise the middle finger, and Figure 1 E the ability to raise the ring finger from the table independently of the others, in a nearly normal manner. The patient states that he plays the organ with the same ability as before the injury, and has no disability or inconvenience in the use of his hand.

My success in this operation was due undoubtedly to four factors: (1) the complete blunt dissection of all the scar tissue, completely freeing the cut ends of the muscle; (2) the use of separate longitudinal sutures with just sufficient tension to approximate the fresh ends of the muscle; (3) the use of fascia from the adjacent muscles to protect the raw surface of the communis, and (4) the use of the thin pad of fat to prevent adhesions.

2017 Spruce Street.

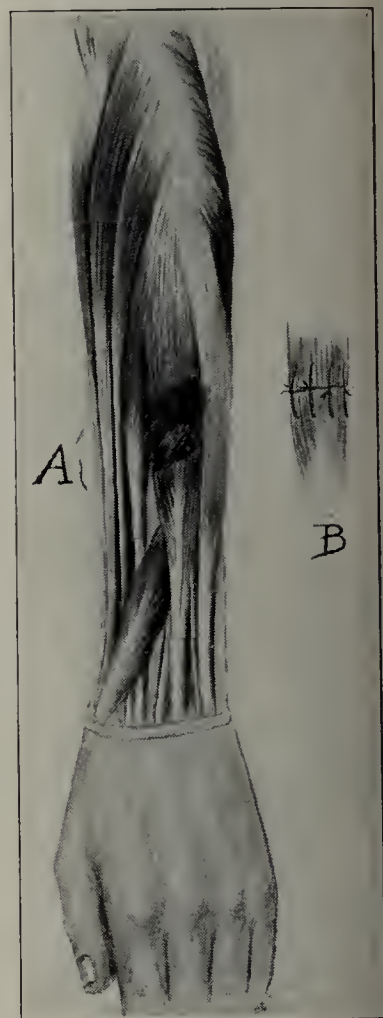


Fig. 2.—A, severed muscle and scar tissue; B, approximation of ends of severed muscle.

**How to Obtain Complete Hospital Records.**—In the matter of organization, it would be necessary only to establish a central office, preferably in the bureau of vital statistics of the city, where uniform reports would be received from each of the hospitals of the city for each patient on his discharge. Such a standard form would include such basic items as age of the patient, sex, color, nativity, occupation, duration of residence in Cleveland, address, diagnosis on admission and at discharge, a brief summary of the treatment, duration of the treatment, the date of discharge, and condition on discharge; a statement of the social service work done or contemplated would make a valuable addition. . . . It would be necessary only for the hospitals of the city to agree on a simple blank, including such items as these, and to send them as completed to the central record office immediately upon the discharge of the patient. A nomenclature and classification of diseases and of conditions or states of the patients on discharge should also be agreed upon.—H. Emerson, *Hosp. Soc. Service* 4:271 (Nov.) 1921.



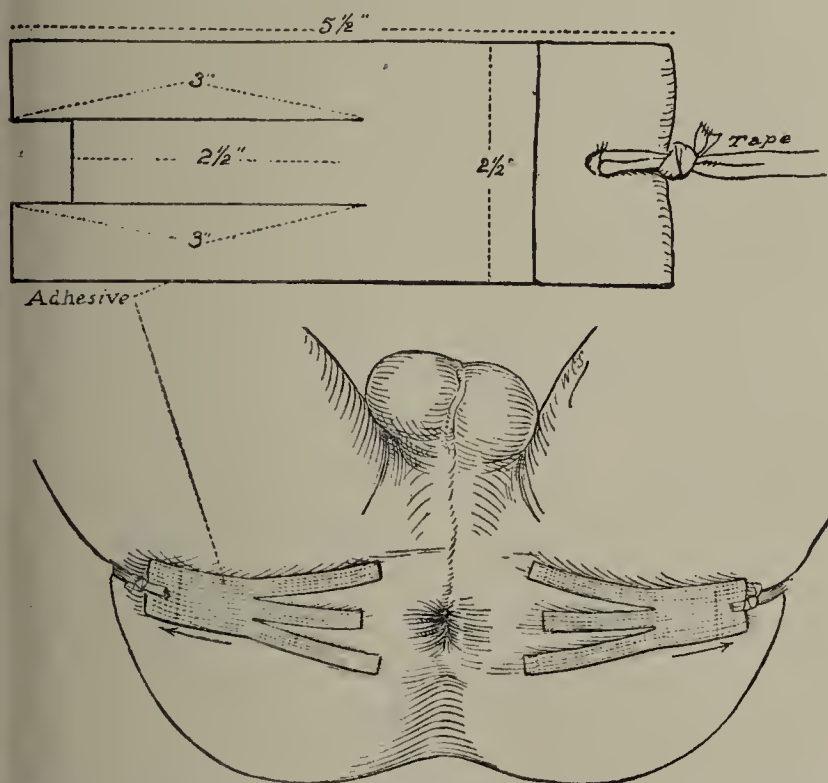
## ADHESIVE STRIPS FOR ANAL EXPOSURE IN SURGICAL PROCEDURES

HARRY C. W. S. DE BRUN, M.D., NEW YORK

Surgeons are called on frequently to operate on the anal region at a time when no assistance is available. Under such circumstances it is difficult to secure proper exposure.

I have utilized two adhesive strips about 5½ inches (14 cm.) long by 2 inches (5 cm.) wide, according to the size of the patient's buttocks. To one end, which has been folded upon itself, is attached a long strip of tape or bobbin. The other end is divided into three equal strips about 3 inches (7.5 cm.) long. The middle strip is then made a half inch (1.3 cm.) shorter.

The patient is put in the lithotomy position, knee chest position or bending over the table. The middle strip is attached at the side of the anus (the region being shaved), and the superior and inferior strips are fastened above and below. This procedure is repeated with the second strip on



Detail of adhesive strips and method of application in securing anal exposure.

the opposite side. The patient now pulls the buttocks apart while the surgeon ties the tape at the head piece of the operating table.

In practically every case I have found excellent exposure for the common surgical operations on the anus and rectum. 884 West End Avenue.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**LIQUID PETROLATUM.**—See U. S. Pharmacopeia and Useful Drugs under petrolatum liquidum.

**Liquid Petrolatum-Squibb, Heavy (California).**—A brand of liquid petrolatum-U. S. P., made from California petroleum and claimed to be composed essentially of hydrocarbons of the naphthene series.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patent or trademark.

Liquid petrolatum-Squibb, heavy (California), is colorless, non-fluorescent, practically odorless and tasteless. The specific gravity is from 0.886 to 0.892 at 15 C. or from 0.881 to 0.887 at 25 C. It com-

plies with the tests of the U. S. Pharmacopeia, and in addition to the following test:

If 5 Cc. of sulphuric acid-U. S. P. is mixed with 5 Cc. of nitric acid-U. S. P. in a 25 cubic centimeter glass-stoppered cylinder, and if after the mixture has cooled, 5 Cc. of liquid petrolatum-Squibb is added and the mixture shaken for thirty seconds, neither the test reagent nor the liquid petrolatum will assume a color deeper than canary yellow, nor will any matter separate at the junction of the liquids.

## CHAULMOOGRA DERIVATIVES

Chaulmoogra oil is a fixed (fatty) oil expressed from the seeds of *Taraktogenos kurzii*, a tree growing in India and adjacent countries. In addition to small quantities of the glycerides of the fatty acids commonly found in vegetable fats, chaulmoogra oil contains the glycerides of a series of highly unsaturated fatty acids, chiefly chaulmoogric acid,  $C_{18}H_{32}O_2$ , and hydnocarpic acid,  $C_{16}H_{28}O_2$ . This series of fatty acids differs from other ordinary fatty acids in being optically active and in possessing, as part of the molecular structure, a ring of carbon atoms. The therapeutic properties of chaulmoogra oil appear to be due to these optically active unsaturated fatty acids of the chaulmoogric series.

Chaulmoogra oil has been used in the treatment of leprosy for many years, the bulk of the evidence indicating that it is of value though not having specific, curative properties. The fatty acids of chaulmoogra oil have a destructive action on acid-fast bacilli, such as the bacillus of leprosy, and it is to this property that the beneficial effects of chaulmoogra oil derivatives in leprosy are probably due. Chaulmoogra oil is given by mouth or by hypodermic injection, although the latter procedure is not devoid of disadvantages (abscesses).

The sodium salts of the fatty acids of chaulmoogra oil and the ethyl esters prepared from these fatty acids have been introduced for hypodermic use in the treatment of leprosy with the claim that they are better tolerated than the oil. In India, preparations of the first kind have been used considerably and Leonard Rogers, in particular, reports the successful use of the sodium salts at first subcutaneously and later on intravenously. The ethyl esters prepared from the fatty acids of the oil have been used by several observers for the last fifteen years; recently H. T. Hollmann, J. T. McDonald and A. L. Dean in Hawaii, by employing the esters by deep intramuscular injections, claim to have met with much greater success than had attended the work of others who had used the preparations earlier.

**CHAULMOOGRA OIL.**—*Oleum chaulmoograe.*—A fixed oil obtained by expression from the ripe seeds of *Taraktogenos kurzii*.

**Actions and Uses.**—See preceding general article, Chaulmoogra Derivatives.

**Dosage.**—By mouth, 0.3 Cc. (5 drops) in capsules thrice daily increasing to the point of tolerance. By hypodermic injection it has been used mixed with olive oil, the following being a typical formula: chaulmoogra oil, 500 Cc.; olive oil, 500 Cc.; camphor, 5 Gm.; guaiacol, 10 Gm.

Such mixtures are given by intramuscular injection in doses of from 2 to 10 Cc. once a week.

Chaulmoogra oil is a yellow, or brownish-yellow, liquid or, at a temperature below about 25 C., a whitish, soft solid. It has a characteristic odor and a somewhat acrid taste. It is sparingly soluble in alcohol; soluble in benzene, chloroform, ether and petroleum benzin.

Specific gravity about 0.950 at 25 C., or about 0.940 at 45 C. The specific optical rotation in chloroform solution is +48° to +60°. Acid value, 10 to 25. Saponification value, 198 to 213. Iodine value, 98 to 104.

**CHAULMESTROL.**—Ethyl esters of the fatty acids of chaulmoogra oil. Essentially a mixture of the ethyl esters of the unsaturated fatty acids of chaulmoogra oil.

**Actions and Uses.**—See preceding general article.

**Dosage.**—Orally, chaulmestrol is administered in gradually increasing doses of from 1 Cc. to 5 Cc. daily after meals with warm milk or hot tea. Intramuscularly, 1 Cc. is the initial dose, this being increased by 1 Cc. every second or third injection until a maximum of 3 Cc. to 5 Cc. is reached. The injections are administered once a week.

Manufactured by The Bayer Company, Inc., Rensselaer, N. Y. (Winthrop Chemical Co., New York, distributor). U. S. patent 957633 (May 10, 1910; expires 1927). U. S. trademark.

Chaulmestrol is obtained by saponification of chaulmoogra oil and separation of the fatty acids. The fatty acids thus obtained are crystallized from alcohol to remove the larger portion of the palmitic acid; these fatty acids are esterized with ethyl alcohol in the presence of small amounts of sulphuric acid and the esters so obtained are purified by distillation under reduced pressure.

Chaulmestrol is a limpid, almost colorless, oily fluid, neutral in reaction and having a faint odor and not unpleasant taste. It is insoluble in water, but miscible in all proportions with alcohol and ether.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 14, 1922

## THE RELATION BETWEEN TUMORS IN PLANTS AND IN ANIMALS

Any new observation that bears either directly or indirectly on the nature or etiology of cancer is seized with avidity and subjected at once to close scrutiny, in order that it may be fitted into its proper place in the foundation of sound knowledge which is being so painstakingly erected. Comparative pathology has furnished much valuable information concerning the nature of tumor growth, and promises to furnish much more. Plant pathology has also offered contributions, but as yet their applicability to the problems of oncology has not been finally determined. It is common knowledge that trees and plants may develop tumors of some sort wherever they are injured, or where parasites attack them, and the resemblance of these to human tumors has been commented on probably as long as human beings have talked about tumors. Only with the development of the science of plant pathology in recent years has a more exact evaluation been attempted.

Jensen, known for his successful transplantation of mouse cancer, turned his attention to plant growth, and in 1910 discussed the resemblance to mouse cancer of the tumorous growths in turnips, in that they can be transplanted into other turnips and retransplanted through repeated generations. A greater impetus came from the careful and extensive investigation of Erwin Smith of the United States Department of Agriculture, who with his collaborators found in 1907 that a tumor-like growth in plants, known as crown gall, is the result of infection by a specific bacterium, which was isolated in pure culture. This discovery has been repeatedly corroborated and marks an important contribution to plant pathology. Whether it can be applied to the problem of cancer etiology is another question. There is no doubt that inoculation of the proper species of plants with *Bacterium tumefaciens* of crown gall will produce growths in plants, and that these exhibit certain resemblances to mammalian cancer. Not only is there a new growth, but pieces from this implanted in other plants will produce new growths again, and sometimes a plant

bearing a crown gall produced by inoculation is seen to develop new growths at a greater or less distance, suggesting an analogy to metastasis. If the inoculation is made into the proper part of the plant, where dormant axillary buds or potential germ cells are present, the resulting growth may consist of a hodgepodge of plant structures, recalling in complexity the teratomas.<sup>1</sup> Because of these facts some students of cancer have considered these plant growths to be essentially cancers of vegetable tissues, and of the same nature fundamentally as human cancer. If this is true we have an example of a cancer produced by a specific infection, which is a thing not yet accepted as demonstrated for mammalian cancer.

This American work has attracted much attention, and recently Blumenthal and Hirschfeld<sup>2</sup> have considered critically the question whether or not these plant growths are essentially true cancers. They corroborate Smith in finding nuclear division in the plant growths; but this, of course, does not mean anything at all concerning their nature. As to the secondary growths, these are connected to the primary growth by a cord of tumor tissue, and *Bacterium tumefaciens* is present in all parts, so this may be merely a growth of the bacterium through the tissues and hence not the same thing as cancer metastasis. The difficulty in interpreting the significance of this extension of the tumor growth lies in the fact that plants having no circulatory system capable of transporting cells could not well produce discontinuous metastatic growths even of true cancers. But Smith has shown that the secondary growths are not produced from the tissues where they are found, as would be the case if they were simply the result of transportation of an infection, for they have the structure of the primary tumor; thus, a secondary tumor on a leaf is composed of root cells if the primary growth arose in the root, or stem cells if the growth began on the stem. Therefore he holds that the bacterium carries on a symbiotic growth with the plant cells, stimulating them to lawless growth, by which the bacteria are transported in the growing tissues. He likens his plant metastases to the common form of lymphatic extension of cancer along lymphatic vessels as a continuous cord of growing cells, and believes that the only difference between human cancer and crown gall is that in the latter the causative organism can be demonstrated in all the growths.

One of the most characteristic features of human cancer is the destructive effects of its growth, and this feature is not shown to any comparable degree by the inoculated crown galls, for plants may develop normal blossoms and fruit on the branches bearing the tumors, and may flourish as well as uninfected plants. Hence if the plant tumors are to be compared with human neoplasms, they can at most be likened to the benign

1. Smith, E. F.: Embryomas in Plants, Bull. Johns Hopkins Hosp. 28: 277 (Sept.) 1917.

2. Blumenthal and Hirschfeld: Ztschr. f. Krebsforsch. 18: 110, 1921.



growths, despite the secondary extensions that have been described. On the other hand, Smith calls attention to the fact that we cannot expect plant tumors to produce the same disastrous effects in the host as animal tumors, since the whole organism is not in communication with the tumor through circulating fluids: In a tree, the circulation on opposite sides of the trunk is almost as distinct as it would be in two separate animals, there being an up and down circulation but little sidewise movement.

Jensen has produced growths on turnips with *Bacterium tumefaciens* which can be transplanted into other turnips, and in these transplanted growths he could not find the bacterium. Blumenthal and Hirschfeld could get transplants in parsnips only when the bacteria were present, and the negative findings of Jensen are far from conclusive in view of the difficulty of the demonstration of *Bacterium tumefaciens*. A study of the relation of crown gall to cancer by Levin<sup>3</sup> led him to the conclusion that crown gall occurs as a benign growth analogous to granuloma or keloid in animal tissues, and caused by *Bacterium tumefaciens*; and also sometimes as a true malignant growth analogous to cancer and not directly caused by this organism. The latter, when following an infectious lesion, is comparable to a malignant growth arising in the cell proliferation caused by specific infections such as tuberculosis and syphilis, which continues to grow independent of these organisms.

The fact that *Bacterium tumefaciens* produces the same sort of growths in plants of many genera, as different as daisies, cabbage and tobacco, is certainly in marked contrast with the extremely marked degree of specificity exhibited by spontaneous tumors in animals, which usually grow with great difficulty or not at all in even the most closely related species, and commonly can be transplanted only to the identical animal on which the primary tumor arises. It is to be considered, furthermore, that plants, having no blood and leukocytes, can react to infection or injury only by tissue proliferation, and hence comparison of animal and plant lesions is difficult and dangerous, and Smith himself has pointed out the readiness with which simple chemical stimuli cause tissue masses to grow in plants. It is probably fair to state that at the present time the identity with cancer in animals of the growths in plants produced by *Bacterium tumefaciens* is not accepted by most of the pathologists who have made a special study of cancer, but interesting and instructive analogies are seen between some forms of plant gall and animal cancer. Still less ready are they to accept the conclusion that, because these plant growths can be produced by inoculation with *Bacterium tumefaciens*, a specific cancer parasite is probably responsible for cancer in man. In discussing this subject, even so zealous a searcher

for cancer parasites as Gaylord<sup>4</sup> remarked, "I think that no one has any idea today that one organism is the cause of cancer, no matter to what extent they may believe that certain tumors are parasitic."

#### THE TOTAL AMOUNT OF CIRCULATING SUGAR IN THE BLOOD

Current estimations of blood sugar are mostly concerned with the percentage content of the circulating fluid in glucose. Of late the question of the relative participation of the plasma and erythrocytes as carriers of the carbohydrate has formed a subject of discussion on which unanimity of opinion has by no means yet been reached. Several years ago, Epstein and Baehr<sup>5</sup> of New York suggested that in diabetes the total amount of circulating sugar may bear a more important relation to glycosuria than does the mere concentration of the sugar per unit of blood. Other investigators have expressed somewhat similar views. It has become of interest, therefore, to learn something more definite about the factors referred to. Fitz and Bock<sup>6</sup> of the Massachusetts General Hospital have estimated the total blood sugar and its distribution between plasma and corpuscles in a number of cases. In the normal persons studied, the total amount of sugar based on careful determinations of the blood volume varied, but did not exceed 7.5 gm. The plasma sugar was almost always considerably greater than the corpuscular sugar, but it did not exceed 4.85 gm. The total amount of sugar in the blood of nine diabetic patients also varied considerably. The highest blood sugar content estimated was 15 gm., and the highest plasma sugar was 10.78 gm. The data indicate that the blood corpuscles, as a whole, are little concerned with sugar transportation and do not always contain increases in sugar proportional to that found in the fluid plasma.

Fitz and Bock found that the plasma of the blood of diabetics contained relatively much more sugar than did the corpuscles. They contend that the plasma in diabetes is a vehicle for the transportation of sugar from the body cells, which are unable to burn or store it, to the kidney which excretes it; and that the blood corpuscles are little concerned with such transportation of sugar, a statement which is supported by the fact that the sugar content of the individual corpuscle tends to be fixed within rough limits.

When the number of corpuscles is increased or decreased, as in polycythemia or anemia, the amount of corpuscular sugar may vary. According to the Boston clinicians, however, glycosuria does not occur unless the plasma sugar exceeds a certain threshold

4. Gaylord, Harvey: J. Cancer Res. 5: 102, 1920.

5. Epstein, A. A., and Baehr, G.: Certain New Principles Concerning the Mechanism of Hyperglycaemia and Glycosuria, J. Biol. Chem. 18: 21, 1914.

6. Fitz, R., and Bock, A. V.: Studies on Blood Sugar: The Total Amount of Circulating Sugar in the Blood in Diabetes Mellitus and Other Conditions, J. Biol. Chem. 48: 313 (Oct.) 1921.

3. Levin, Isaac, and Levine, Michael: Malignancy of the Crown Gall and Its Analogy to Animal Cancer, J. Cancer Res. 5: 243 (July) 1920.



regardless of what the sugar content of the corpuscles may be. It will require more extensive data to determine convincingly whether the current mode of evaluating the level of sugar in the blood by determining the percentage content should give way in clinical practice to the more difficult scheme followed by Fitz and Bock, when diagnostic or prognostic features are under consideration.

#### IMPORTANT CONTRIBUTION TO EGYPTIAN MEDICINE

One of the most important announcements made at the recent annual meeting of the American Historical Association at St. Louis is of special interest to physicians. Professor Breasted of the University of Chicago told of the recent discovery in this country, where it has been for a number of years without its value being recognized, of an Egyptian papyrus on medical science. This proves, indeed, on investigation to be one of the four most important medical documents from Egypt which the modern world has discovered. These four are the Ebers Papyrus of Leipzig, the Berlin Medical Papyrus, the Hearst Medical Papyrus, which is in this country at the University of California, and now the Edwin Smith Medical Papyrus, as it has been decided to call it, which was found among the collection of the New York Historical Society, by Dr. Caroline Ransom Williams, while making a catalogue of their Egyptian department. This papyrus was probably written in the sixteenth century B. C., some 3,500 years ago, and consists of about 500 lines, most of it in excellent preservation. The fact of its possession in this country gives America a distinct preponderance in this sort of literature.

The preliminary announcement with regard to it, made by Professor Breasted, gives an excellent idea of its contents. It is a discussion of forty-seven different cases. Particularly noteworthy is the care the writer takes to locate exactly the seat of the trouble and the organ which he thinks is affected. He was evidently groping for words that would express exactly his idea, and he did not hesitate to use many words so as to be sure to convey his meaning. Most of the cases discussed in the papyrus are affections or injuries of the head. In one case, the pain is described as located at the root of the nose, exactly between the eyebrows, yet, as it were, within the forehead itself, and is manifestly the first record of a pathologic condition of the frontal sinus ever written. A number of knife wounds of the head are described, some of them penetrating only the scalp, but some perforating the cranial cavity and some of them noted as producing fracture of the skull. Even the worst of these cases are declared not to be necessarily fatal; in fact, a certain number of skulls from this period have been found in which even perforating wounds of the cranium are noted as having been healed.

Our Egyptian colleague of three and a half millenniums ago carefully describes the technic of bandaging wounds of the scalp so as to bring the two lips of the wounds together (these are his own words), and it is evident that he realized all the danger there would be from an open wound of the scalp because of possible burrowing of infectious material. He has a series of cases of affections of the nose and the mouth, and then takes up other organs on the way down the body, his last case being one of the after parts, probably the rectum. As the oldest prescription in the world, which is in the collection of the Metropolitan Museum in New York, is for hysteria, supposed to be due to a dislocation of the uterus upward, to be treated by a fumigation, which would relieve the ball in the throat by supposedly causing the uterus to descend, it was not because of any lack of development of gynecology, but apparently because of defect in the manuscript, that the chapter of women's diseases is not included here.

Added in another hand, at the end of the manuscript, but coming from a date not much later than the preceding portion, is a series of hints as to how the transformation of an old man into a young man may be brought about. They were evidently looking for the elixir of life thirty-five hundred years ago, quite as much as they are in our own time, and probably with as little success.

#### THE EFFECT OF SOLUTIONS OF VARIOUS CONCENTRATIONS ON INTRA- CRANIAL PRESSURE

The last two years have witnessed a number of experimental investigations on changes in the volume of the brain under a variety of circumstances which promise to find some direct application in the clinic. These novel studies had their beginning in the demonstration by Weed and McKibben<sup>1</sup> in 1919 that it is possible to diminish the bulk of the brain by the simple procedure of injecting a hypertonic solution, such as is represented by a 35 per cent. solution of common salt, into the blood stream. At the same time the pressure of the cerebrospinal fluid is reduced. The same investigators showed, conversely, that the pressure and the bulk of the brain could be increased by injection of hypotonic solutions such as water represents.

Soon afterward, these findings were abundantly confirmed by other workers, and it was demonstrated that comparable fall in intracranial tension and decrease in brain volume can be brought about by the oral introduction of strong salt solutions. Thus, Foley and Putnam<sup>2</sup> showed convincingly that the gastro-intestinal route of administration is more convenient, and by its use the disturbances of circulation and respiration com-

1. Weed, L. H., and McKibben, P. S.: *Am. J. Physiol.* **48**: 512, 531 (May) 1919.

2. Foley, F. E. B., and Putnam, T. J.: *The Effect of Salt Ingestion on Cerebro-Spinal Fluid Pressure and Brain Volume*, *Am. J. Physiol.* **53**: 464 (Oct.) 1920.



mon with intravenous infusions are avoided. The responses are also obtained whether the saline solution is introduced directly into the duodenum or by rectum. It was not long before clinicians were emboldened to test the method in its applicability to human patients. There are several reports already published on the use of strong salt solution in the control of intracranial tension, such as may occur in persons suffering from a cerebral tumor.<sup>3</sup> Sachs and Malone<sup>4</sup> have determined the conditions under which the brain volume changes can be secured with greatest safety. The effect of the hypertonic saline solution persisted for hours. Damage to the red blood cells was not detected in the patients subjected to the tests. Sachs and Malone's studies lead them to conclude that the intravenous injection of hypertonic salt solution is a valuable aid in reducing brain volume in cases of increased intracranial pressure.

Weed and Hughson<sup>5</sup> of the Johns Hopkins University have recently secured further data regarding the general systemic effects of the intravenous injection of solutions of various concentrations. Their findings indicate that the bony coverings of the central nervous system constitute, within tested physiologic limits, inelastic and rigid containers; the ordinary physical laws of a "closed box" may therefore be applied to the cranium. The intravenous injection of strongly hypertonic solutions causes a prolonged and profound fall in the pressure of the cerebrospinal fluid, preceded usually by a sharp rise. The changes in cerebrospinal fluid pressure induced by the intravenous injection of solutions of various concentrations seem to be independent of the changes in the systemic arterial or venous pressures. Weed and Hughson point out that thus far it has not been possible to demonstrate with certainty whether, following the intravenous injection of the hypotonic solution, there is an increase in quantity of the cerebrospinal fluid; nor has it been possible to determine an additional absorption of the fluid due to injection of a hypertonic solution. The evidence, they state, is clear that the alteration in osmotic pressure of the blood changes the size of the brain, the large brain resulting from the hypotonic solution and the small brain from the hypertonic.

It is too early to forecast the manifold clinical possibilities bound up in all these recent studies. Cushing has already suggested that a relief of "tension headaches" may be found in the action of salines which in

ultimate analysis behave like hypertonic solutions. The adaptability of the principles discussed in connection with cranial operations, whereby these are made easier by lowering tension and diminishing brain volume, is already more than mere conjecture. Once again the laboratory has furnished useful clues to the clinic.

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## Current Comment

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### LESLIE'S ON CHIROPRACTIC

There is no information which the public needs more than that which will reveal the actual character of the claims made by certain medical cults—chiropractic in particular. This information is now forthcoming through a series of articles addressed to the public. Six articles entitled "Is It Chiro-Quack-Tic?" by Severance Johnson are now running in *Leslie's Weekly*, two instalments having appeared in the issues for January 7 and January 14. The medical profession has from the beginning recognized the ridiculously unscientific character of the claims made by these cultists and has repeatedly shown that chiropractors are working directly against public welfare; that they attempt—and with some success—to break down medical practice laws, and frequently and openly violate these laws, aided and abetted in doing so by the so-called colleges that are grinding them out. But the public also has large financial interests at stake. Public funds are now being appropriated to help educate competent medical men. To conduct a medical school today costs several times what the institution receives from students' fees, and this deficit is being offset either by state appropriations or private endowments. The expense is being further added to by a gradually increasing provision for scholarships for deserving students who are unable to pay tuition fees. Are the benefits of these expenditures to be lost or dissipated through the spread of chiropractic? Because of the great expense involved in training competent physicians, medical schools conducted for profit have practically disappeared. But the place of the old, low-grade, commercially conducted medical school is now being taken by chiropractic schools. Within a score of years, by charging maximum fees for a minimum of education, a long-haired but shrewd advertiser has amassed millions<sup>1</sup> through conducting a chiropractic "college." A comparison of the brevity of the "professional" course and the common school education, required for admission, with the ten or eleven years of high school, collegiate and professional instruction required to develop a competent practitioner of scientific medicine should at once show the inadequacy of the training obtained by chiropractors. The manner in which chiropractors disclaim the need of diagnosis and flout the fundamental sciences of chemistry and bacteriology should reveal to any intelligent layman the utter unreliability of chiropractic as a system of heal-

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1. Dock, George: A Visit to a Chiropractic School, *J. A. M. A.* 78: 60 (Jan. 7) 1922.

3. Sachs, Ernest, and Belcher, G. W.: The Use of Saturated Salt Solution Intravenously During Intracranial Operations, *J. A. M. A.* 75: 667 (Sept. 4) 1920. Ebaugh, F. G., and Stevenson, G. S.: *Bull. Johns Hopkins Hosp.* 31: 440 (Dec.) 1920.

4. Sachs, Ernest, and Malone, J. Y.: The Use of Hypertonic Salt in Experimental Increased Intracranial Pressure, *Am. J. Physiol.* 55: 277 (March) 1921.

5. Weed, L. H., and Hughson, W.: Systemic Effects of the Intravenous Injection of Solutions of Various Concentrations with Especial Reference to the Cerebrospinal Fluid, *Am. J. Physiol.* 58: 53 (Nov.) 1921; The Cerebrospinal Fluid in Relation to the Bony Encasement of the Central Nervous System as a Rigid Container, *ibid.*, p. 85; Intracranial Venous Pressure and Cerebrospinal Fluid Pressure as Affected by the Intravenous Injection of Solutions of Various Concentrations, *ibid.*, p. 101.



ing. It is high time that the public became fully informed in regard to the workings of this organized system of quackery, and *Leslie's Weekly* is rendering the public a great service by publishing the information.

#### A PLEA FOR ACCURACY

Inaccuracy of description is a common sin in medical literature. Some articles give the reader the impression that the author has not been informed that there exist standard systems of weights and measures. We are told that a nodule the size of a chestnut was present in the abdominal wall, or that an ulcer the size of a dime was located on the forearm. These descriptions may mean something to the writer who saw the objects, but they carry much less information than they should to the reader. Too many writers seem to forget that medical literature is international, and that their reports, if of any value, will be read in all parts of the world, and possibly for many years. Just what will the Russian scientist know about the size of a dime? How large is a chestnut? Very different sizes will register in the minds of an Italian and a New Englander. The orange is a popular unit of measurement; but what sort: Messina or Florida? They are as one to five or more. Coins fluctuate from generation to generation, vegetable products vary in size, and many are referred to by local names. What are foreigners to understand by references to such standards of measurement as horse beans, cow peas, footballs (Rugby or soccer not specified), baseballs, bird shot (for snipe or turkey?), ping pong balls or grapefruit? How big is a cherry, a potato, a watermelon? Yet these are used as if centimeters or inches had never been defined. The literature is full of lesions that are "fünfpennig-gross" or "zweimarkstück-gross"; but with the disappearance of metal coins in central Europe, what will these terms mean to future generations? Imagine a scientist in Dutch Java fifty years from now trying to figure out how large a "fifty kopeck sized eruption" really was. So inaccurate and inconsiderate become the thoughts of men who use such units of measurement that the statements often are even grotesquely vague: we have seen tumors described as the size of a bean, the size of a nut, the size of a bird's egg, and once, most delightful of all, a patient presented a tumor mass "the size of a hat." There's a doctor for you—to whom fashion's vagaries mean nothing! We are still looking for a lesion "as long as a piece of string," and confidently expect to read about it some day.

**Routine Wassermann Test for Pregnant Women.**—It is so important to protect the unborn child from syphilis that if one accepts at its face value the statement that 10 per cent. of the married women are syphilitic it might be worth while to consider the feasibility of a routine Wassermann test for all pregnant women. Certainly wherever such a woman has a history of previous miscarriage or there is other reason for suspecting syphilis, both a clinical examination and a Wassermann test should be made. In all cases where syphilis is discovered in a pregnant woman, vigorous treatment should be given. The best way to treat a syphilitic child is to treat the mother before the child is born.—M. Knowlton, *Pub. Health Rep.* 36:2311 (Sept. 23) 1921.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

#### ALABAMA

**County Health Officers' Meeting.**—Under the auspices of the Post-Graduate Medical School of the University of Alabama, the county health officers' meeting was held at Birmingham, Dec. 12-14, 1921. Among the speakers were Dr. William H. Park in charge of the Bureau of Laboratories, New York City, subject, "The Control of Diphtheria"; Colonel Frederick F. Russel of the International Health Board, who spoke on inspection and standardization of laboratories; Dr. Lunsford D. Fricks, U. S. Public Health Service, who discussed malaria and malaria control, and Dr. Wade H. Frost, professor of epidemiology, Johns Hopkins University, Baltimore. The meeting was presided over by Dr. Samuel W. Welsh, state health officer.

#### CALIFORNIA

**State Board Would Deport Chinese with Clonorchiasis.**—It is reported that thirty-two Chinese afflicted with clonorchiasis were released on bond and permitted to land at San Francisco. They are being sought by Dr. George E. Ebricht, president of the state board of health, who, in a letter to Commissioner of Immigration Edward White, asked cooperation in the search for the Chinese, and requested that they be apprehended and deported.

**Personal.**—Dr. Samuel R. Downing, Oakland, has been appointed major of the medical corps of the California National Guard. Major Downing served overseas during the World War at Base Hospital No. 47, with the rank of captain. —The Medical Society of the State of California, Dec 24, 1921, gave a dinner and reception in honor of Dr. and Mrs. William E. Musgrave, who have recently returned from their wedding journey. Dr. John H. Graves, president of the state society, presided as toastmaster.

**Hospital News.**—Oakdale, with a tributary population of about 8,000, is said to have closed its only hospital last month after having operated it for twelve years at a loss. The building is to be converted into an apartment house. —According to the annual report of the state board of charities and corrections, 17,080 persons are now confined in state institutions. This is an increase of 1,328 during 1921. One of the most important accomplishments of the board during the year was the standardization and unification of records in the various state hospitals.

#### CONNECTICUT

**New Medical Building for Yale.**—It is announced that \$1,320,000 has been appropriated for the erection of a new medical building, at Yale University, to be known as the Sterling Hall of Medicine. The university has acquired the block bounded by Cedar, Broad, Palmer and Rose streets where the dispensary now stands, opposite the New Haven Hospital. The building will have a central entrance and contain (a) a library of approximately 12,000 volumes; (b) an amphitheater with seating capacity of about 250; (c) the administrative offices of the dean and registrar; (d) a room for faculty use; (e) students' common room, and (f) single rooms for unmarried instructors in the preclinical subjects. A wing will provide laboratories on the first and second floors for (a) the department of physical physiology, with like provision on the third and fourth floors for (b) the department of pharmacology and toxicology. Another wing will provide on the first and second floors, space for (c) the department of chemical physiology, the two upper floors being given to laboratory space for (d) anatomy. It is hoped that in the near future a department of psychiatry will be added. There will also be an animal house, and a power house of sufficient capacity for future requirements of the hospital and the school. One of the outstanding features of the expansion of Yale School of Medicine has been its closer affiliation with the New Haven Hospital and the dispensary. In addition the finances of the hospital have been placed on a stronger footing and the physical rehabilitation has been begun. Placing the faculty of the medical school on a basis of full-time organization in the clinical service has been an important step in the consolidation of the medical school and the hospital.



## ILLINOIS

## Chicago

**Virulent Smallpox in Chicago.**—The commissioner of health has issued a statement that the virulent type of smallpox has found its way into Chicago. All persons known to have been exposed to the disease in Kansas City, it is asserted, who came to Chicago—four in number—have died of the disease. Kansas City has a 34 per cent. death rate from smallpox. The department of health prefers that vaccination should be done by the family physician, and has issued a card to the public which physicians are requested to post in their offices.

## INDIANA

**Public Health Institute.**—The Indiana Public Health Institute, under the auspices of the U. S. Public Health Service, will be held at the Lincoln Hotel, Indianapolis, February 13-18.

**Hospital News.**—A vocational training center is to be established at the Irene Byron Tuberculosis Sanatorium, Fort Wayne. Dr. John H. Rhys will have charge of the work. The old sections of the City Hospital, Indianapolis, will be razed and a new unit constructed at a cost of about \$200,000. The contract has been awarded for the new tuberculosis sanatorium at Marion, at a cost of \$97,000.

**Medical Society Meetings.**—The annual meeting of the Indiana Academy of Ophthalmology and Otolaryngology will be held at Indianapolis, January 18. The Indianapolis Medical Society at the recent annual meeting elected Dr. Lafayette Page, president; Dr. George S. Row, first vice president; Dr. Harry K. Langdon, second vice president, and Dr. William A. Doeppers, secretary-treasurer.

**Personal.**—Dr. Richard A. Poole has been appointed superintendent of the City Hospital, Indianapolis. Dr. E. E. Hodgins has been made president of the board of health, Indianapolis. The following physicians have been appointed new members of the board: Karl Ruddell, Goethe Link and Arthur E. Guedel. Dr. William N. Wishard, Indianapolis, has been confined to his home for several weeks on account of illness. Dr. James Wilson, Wabash, was inaugurated mayor of that city, January 2.

## IOWA

**Prenatal Clinic.**—The Community Hospital, Grinnell, early in January, will open and conduct a prenatal clinic which will supplement the child welfare clinic that has been in operation since the opening of the hospital. In cases of patients who have already engaged a physician, the examination will be referred to the physician in charge. For those patients who do not come in under the care of a physician, a staff physician will be available to conduct this examination.

## MARYLAND

**Requests for Clinics.**—Requests are coming in for clinical meetings to be held under the auspices of the university in various parts of the state. The first of these to be acted on is that from the Washington County Medical Society, for a series of clinics to be held in Hagerstown in May.

**Personal.**—Dr. William A. Fisher, Baltimore, who served eighteen months with the American Expeditionary Forces as assistant to Dr. John M. T. Finney, Baltimore, has been awarded the Distinguished Service Medal for "exceptionally meritorious and distinguished services in a position of great responsibility." The presentation will be made shortly at the Third Corps Area Headquarters, at Fort Howard. Dr. Julius Friedenwald, Baltimore, has been secured to give a series of lectures on organic and functional diseases of the digestive tract in the university extension course of the University of Maryland. This announcement has just been made by Dr. Maurice C. Pincoffs, professor of medicine at the university. The lectures will be given on the remaining Mondays in January, and will be in addition to the clinics given by Dr. Llewellys F. Barker. Knight Dunlap, Ph.D., professor of experimental psychology at the Johns Hopkins University, has been elected president of the American Psychological Association. Dr. Harold L. Amoss of the Rockefeller Institute, New York City, delivered an address, January 3, at a meeting of the Baltimore City Medical Society, at the Faculty Building. His subject was "An Experimental Study in Epidemiology." Dr. Amoss has been engaged in research work at the Johns Hopkins Medical School for several months. Mr. Alan Johnstone, Jr., executive secretary of the

Maryland Social Hygiene Society, is among those selected by the Federal Interdepartmental Social Hygiene Board to give a series of health talks under the auspices of the health boards of the various states and the U. S. Public Health Service. Mr. Johnstone has been assigned to deliver lectures at Portland, Spokane and Denver.

## MASSACHUSETTS

**Meeting of the Boston Association of Cardiac Clinics.**—Dr. William P. St. Lawrence, New York City, will give an address at the Peter Bent Brigham Hospital, January 19, on "Potential Cardiac Disease and the Development of Organic Heart Disease in Children."

## MICHIGAN

**Hospital News.**—Plans are now being formed for the erection of a sanatorium for tuberculous patients by the combined efforts of Lapeer, Sanilac and St. Clair counties. Plans are now being drawn for the new county hospital at Albion, which will be constructed in the spring.

## MINNESOTA

**Southern Minnesota Medical Meeting.**—The annual meeting of the Southern Minnesota Medical Association was held at Mankato in December, 1921. The following officers were elected for the ensuing year: president, Dr. William F. Braasch, Rochester; vice presidents, Drs. William H. Condit, Minneapolis, and Gustav H. Luedtke, Fairmont; secretary-treasurer, Dr. Henry T. McGuigan, Red Wing. Dr. Aaron F. Schmitt, Mankato, was reelected secretary general.

## NEW YORK

**Hospital News.**—A modern hospital for veterans of the World War suffering from tuberculosis will be built in the Adirondacks, probably at Saranac Lake. Plans and specifications have been prepared for a new tuberculosis sanatorium for men at Willard State Hospital. It will cost about \$40,000.

**Epidemic Jaundice Suspected in the State.**—According to a report of the state department of health, the state health officers are actively investigating what is suspected to be epidemic infectious jaundice, a disease hitherto rarely reported in the United States. Following recent descriptions of several groups of suspicious cases in Madison, Oswego, and St. Lawrence counties, State Health Commissioner Hermann M. Biggs has directed that the full resources of the department be employed in a state-wide investigation through the sanitary supervisors and the laboratory staff.

**Increase in Insanity.**—More persons were sent to the insane asylums in this state last year than in any previous year, according to the report of the state charities aid association recently submitted to the state hospital commission. At the end of 1921, there were 39,736 patients in the thirteen hospitals for the insane, 1,445 more than there were a year ago and 6,642 more than the rated capacity of the hospitals. The increase is attributed to unemployment and distress due to economic conditions. The report urges the establishment of occupational schools in connection with state hospitals as a valuable therapeutic adjunct, and the extension of the mental clinics. Last year 13,328 visits were made to these clinics, of which 4,928 were by new patients. These clinics have shown themselves to be an important factor in aiding discharged patients to reestablish themselves in the community.

## New York City

**Personal.**—Dr. and Mrs. Charles H. Chetwood sailed for Europe on the *Nieuw Amsterdam*, January 3.

**Italian Physicians Association.**—With the objects of bringing together groups in New York and out of town members, and to encourage the organization of similar groups throughout the country, to raise the standard of medical education among Italian physicians and those of Italian origin in this country, the Italian Physicians Association will hold its first social event—a dinner dance—January 14, at the Hotel Biltmore, New York City.

**Sydenham Hospital Buys Site.**—The Sydenham Post-Graduate Hospital has purchased the block front on the west side of Manhattan Avenue from West 123d to West 124th streets and extending through to Hancock Place. The new building, including the land and equipment, will cost, according to estimates, \$1,000,000. A feature of the new hospital will be the elimination of wards, as every patient, whether free or contributing, will have a separate room.



**Antivivisectionists Censured.**—Mr. Harold Baynes, in an address before the Brooklyn Institute of Arts and Sciences, at the Brooklyn Academy of Music, scored antivivisectionists. He declared that those paying dues to antivivisection societies were hindering the progress of medical science, and therefore causing unnecessary death from disease. Mr. Baynes directed his attack upon the Vivisection Investigation League and the New York Antivivisection Society, which he charged with giving false and misleading information in their pamphlets.

**Dr. Gibney Honored for Long Service.**—On the occasion of his fiftieth anniversary as head of the Hospital for Ruptured and Crippled, Dr. Virgil P. Gibney was presented with a loving cup which bears the following inscription: "1871-1921, Dr. Virgil P. Gibney, who for half a century has devoted his faithful services and masterful ability to the advancement and guidance of the New York Society for the Relief of the Ruptured and Crippled. Presented by the Trustees and Staff of the New York Society for the Relief of the Ruptured and Crippled." A record of the work done by the hospital has been compiled in connection with the celebration of Dr. Gibney's fiftieth anniversary as head of the institution which shows that 503,403 patients have received treatment there.

**Plan to Enlarge Reconstruction Hospital.**—A movement has been launched to enlarge the Reconstruction Hospital, 100th Street and Central Park West, and develop it into one of the largest institutions for postoperative treatment in the country. The directors have formulated plans to raise \$1,500,000 with which to erect a twelve-story hospital to be devoted to the treatment of industrial accidents and diseases. The Reconstruction Hospital was incorporated, Feb. 19, 1921, through the consolidation of the Clinic for Functional Reeducation, the Demilt Dispensary, the Park Hospital, and the Institute for Crippled and Disabled Men. Since the institution was opened 3,555 patients have been given 206,146 treatments. At first the cases were practically 100 per cent. government cases. The government cases have fallen to 25 per cent. while industrial cases have risen to 75 per cent. of the total. Dr. William Gilman Thompson is president of the Reconstruction Hospital.

#### NORTH CAROLINA

**Hospital News.**—The cornerstone of the Hicks Memorial Hospital, Oxford, has recently been laid.

**Appointments on Hospital Visiting Staff.**—Governor Morrison has recently made the following appointments of physicians for the visiting staff of the state hospital: Internal medicine—Drs. R. B. Smith, Asheville; Leone B. Newell, Charlotte; Houston B. Hiatt, High Point; Samuel F. Pihol, Winston-Salem; S. S. Dodson, Greensboro, and Henry F. Glenn, Gastonia. Eye, ear, nose and throat specialists: Drs. Henry H. Briggs, Asheville; James P. Matheson, Charlotte; Robert V. Brawley, Salisbury; Thomas W. Davis, Winston-Salem, and John W. MacConnell, Davidson. The foregoing, with the following visiting surgeons who were appointed some time ago, constitute the visiting staff for the Morganton Hospital: Drs. Addison G. Brenzier, Charlotte. John T. Burrus, High Point; W. F. Griffith, Asheville; Henry F. Long, Statesville; Henry Norris, Rutherfordton, and James E. Stokes, Salisbury. The appointment of Dr. S. Westray Battle, Asheville, as a member of the state geological board was also announced by the governor.

#### OHIO

**Personal.**—Dr. Mark D. Godfrey, Columbus, who has been specializing in infants' diseases in Vienna for the last year, has been chosen as one of the ten physicians to go with the relief expedition to Moscow, Russia.

#### PENNSYLVANIA

**Hospital Gets \$25,000 in Waynesboro Hotel Sale.**—A deal for the sale of the Hotel Central, one of the oldest hotels in Waynesboro, but now being conducted as an apartment house, was concluded whereby the Waynesboro Hospital Association becomes owner of the property. The consideration was \$50,000, half the purchase price being credited on the owner's subscription of \$25,000 to the hospital fund. The owner immediately resold the property. The west half, or hotel proper, was bought by Simon Weiner and Maurice Harbaugh for \$25,000 and the east half, or business block, by Roy Wishard for \$25,000.

#### PHILIPPINE ISLANDS

**Health Campaign for Philippine Islands.**—Governor General Wood has inaugurated a campaign to improve health conditions in the Philippine Islands by teaching the people how to avoid and combat the more common diseases. He has instructed the director of the Philippine health service to prepare a circular setting forth the causes of the various diseases and the methods which can be used to prevent them and stamp them out. The circulars are to be posted in public places in every municipality of the islands and are to be read in every class in the public schools.

#### PORTO RICO

**Annual Medical Meeting.**—The twentieth annual meeting of the Porto Rico Medical Association was held in San Juan, Dec. 17-18, 1921, under the presidency of Dr. I. González Martínez. The following officers were elected for the ensuing year: president, Dr. Pedro Gutiérrez Ingaravidez; vice president, Dr. Rafael López Nussa; secretary, Dr. Augustin R. Laugier, and treasurer, Dr. Jacinto Aviles Borrero. The city of Ponce was chosen for the next meeting, which will take place, Dec. 15-17, 1922.

#### TEXAS

**North Texas Medical Association.**—At the December meeting of the association, held at Dallas, Dr. James J. Terrill, Dallas, was elected president of the association; Dr. Charles A. Schultz, Alvarado, vice president, and Dr. William S. Horn, Fort Worth, secretary-treasurer. The next meeting will be held at Gainsville in June, 1922.

**Dr. Fuchs to Visit Texas.**—Prof. Ernst Fuchs of Vienna will be in Houston, January 16, to give a series of lectures and demonstrations in ophthalmology. Ophthalmologists of the Southern and Midwestern states are cooperating in arranging for these lectures. Those desiring to participate in the course may consult with Dr. Sidney Israel, Carter Building, Houston, who is in charge of the arrangement.

#### WISCONSIN

**Hospital News.**—Contracts have been awarded for building the new government hospital, near the present site of the Soldiers' Home in Wauwatosa.

**Personal.**—Dr. John E. Brown, superintendent of the Central State Hospital for the Insane, Waupun, recently suffered a scalp wound and an injury to his ankle when his automobile was struck by a train.

#### WYOMING

**Medical Society Meetings.**—The following officers were elected by the Sheridan County Medical Society for the year 1922: president, Dr. Ernest E. Levers, Sheridan; vice president, Dr. Vincent J. Keating, Sheridan, and secretary-treasurer, Dr. Alexander K. DeJarnette, Dietz.—The Wyoming State Medical Society will hold its 1922 meeting in Sheridan, June 20-22. The secretary of the state medical society, Dr. Edwin Earl Whedon, Sheridan, would be pleased to learn of members of the American Medical Association who expect to be in Wyoming during the month of June and who would present papers before the state society.

#### CANADA

**Personal.**—The British Columbia Medical Association has secured as its secretary Mr. C. J. Fletcher. Mr. Fletcher was formerly with the medical department of the Department of Soldiers' Civil Reestablishment at Vancouver, B. C.

**Hospital News.**—In response to urgent requests from medical graduates living in Montreal P. Q., the attending physicians of the Children's Memorial Hospital have arranged to give a series of clinics this winter, illustrating the more important subjects in pediatrics. These clinics will be at least twenty in number, and will be held semiweekly in the hospital.

**Provincial Medical Association.**—Arrangements are now under way for the formation of a provincial medical association for the province of Quebec. The first meeting will be held this month. It is expected that the organization will bring together the French and English members of the profession and that conjoint clinics will be held in some of the larger French and English hospitals in Montreal.

**Centennial Endowment Fund.**—The sum of \$3,810,000 has, to date, been collected by McGill University out of \$6,440,000



subscribed during the centennial endowment campaign of last October. An endowment of \$3,500,000 is now being set aside to meet an increase in the annual budget of \$210,000. The balance of the fund will be devoted to a program of development in the various faculties, and to the erection of new buildings.

**Semcentennial of Canadian Medical Journal.**—The Montreal French monthly, the *Union Médicale du Canada*, was founded in 1872 and has thus completed a half century. It enters on its fifty-first year with Dr. A. Lesage continuing as editor in chief, nine of the professors of the Montreal medical faculty completing the staff. Prof. Z. Rheaume, president of the Société Médicale de Montreal contributes to the January number his report as delegate to represent Canada at the laying of the cornerstone of the library at Louvain, which is being restored by an international committee after its destruction by the enemy during the war.

**Public Health News.**—The department of health, New Brunswick, has recently issued a pamphlet entitled "Prevention," in which it proposes to carry on a campaign of education in public health, and to supply such information as may lead the public to estimate the value of preventive medicine. —The Kiwanis Club of Hamilton, Ont., recently presented to Dr. John H. Holbrook, medical superintendent of the Mountain Sanitarium, a check for \$500 to aid in the work in connection with the ward it maintains there. —A marked decrease in communicable diseases is shown in the December report just issued by the provincial board of health, Ontario. There is a reduction in every disease on the list. The total number of cases of communicable diseases for the month was 1,872, or less than half the number for the corresponding month in 1920, when the total number of cases was 3,651. There was also throughout the year a remarkable decrease in the number of deaths arising from these diseases. The total number of deaths was 5,094, or slightly more than half the number for 1920. The total number of cases decreased from 61,074 to 23,398. —The Red Cross Society of Canada has recently set aside \$15,000 for the carrying out of medical extension lectures throughout the provinces. All of the money, which comes in instalments of \$5,000 a year will be handled by the Ontario Medical Association, which will make appropriations to other branches immediately, so that lectures can be given at various points this winter. About twenty-two medical men throughout the province of Ontario will take part in this extension work.

#### GENERAL

**Committee on Tuberculosis Among Indians.**—Dr. James Alexander Miller, president of the National Tuberculosis Association has appointed the following physicians to the committee on tuberculosis among the Indians: Drs. George M. Kober and Joseph A. Murphy of Washington, D. C., and Dr. Hoyt E. Dearholt, Milwaukee.

**Phi Delta Epsilon Fraternity Conference.**—At the eighteenth annual conference of the Phi Delta Epsilon Fraternity (Medical) held at Philadelphia, Dec. 27-28, 1921, the following officers were elected for the year 1922: grand consul, Dr. Leo S. Schwartz, Brooklyn; vice consul, Dr. Louis Bothman, Chicago; grand chancellor, Dr. Benjamin Edgar Spiegel, New York City; scribe, Dr. Monroe E. Greenberger, New York; historian, Dr. Charles Englander, Newark, N. J.; marshal, Dr. Henry B. Boley, Brooklyn, and editor-in-chief, Dr. Aaron Brown, New York City.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Roosevelt Hospital, New York City, a sum in excess of \$400,000 by the will of Miss Helen T. Cole.

Mount Sinai Hospital, New York City, \$50,000; United Hebrew Charities and Montefiore Home, each \$2,000; Beth Israel Hospital, New York City, and the National Jewish Hospital for Consumptives, Denver, Colo., each \$500, by the will of Morris S. Barnett.

Children's Seashore Home, Atlantic City, N. J., and the North American Sanatorium, Ventnor, N. J., each \$10,000; Home for Incurables, Lankenau Hospital, Episcopal Hospital, Philadelphia, each \$5,000; Germantown Hospital, Philadelphia, \$1,000, at the death of his widow, by the will of Frank P. Brinhurst.

St. Joseph's Hospital, Philadelphia, \$5,000 for a free bed in memory of her mother, Catherine Riley, by the will of Catherine Buckee.

**American Society of Tropical Medicine.**—The American Society of Tropical Medicine at its last meeting, Nov. 14, 1921, at Hot Springs, Ark., elected the following officers for the ensuing year: president, Dr. Victor G. Heiser, New York City; first vice president, Dr. George G. Dock, St. Louis; second vice president, Dr. Sidney K. Simon, New Orleans; secretary-treasurer, Brayton H. Ranson, U. S.

Bureau of Animal Industry, Washington, D. C.; assistant secretary, Dr. Allen J. Smith, Philadelphia, and counselor to serve for five years, Karl F. Meyer, San Francisco. The next meeting of the society will be held in Washington, D. C., May 2-3, 1922, in conjunction with the Congress of American Physicians and Surgeons.

**International Serum Standards.**—Cooperation of the foremost laboratories of the world for the unification of international standards of antitoxic serums has been begun on a large scale by the League of Nations Health Committee. Already preparatory conferences have been held, the work has been divided among the various national laboratories, and the individual studies started. The United States has agreed to cooperate in this work through the U. S. Public Health Service at Washington, and through the presence at the conference of Dr. Rupert Blue, assistant surgeon-general, stationed at Paris. German scientists will also take part. The work involved is considered of great importance to the medical world. Confusion in the various national standards of measuring the strength of antitoxic serums for diseases has had serious effect. First, the American scientist, for instance, is handicapped in studying methods of treatment of various vital diseases abroad, because of the different standards of measuring the strength of the antitoxic serums employed; second, as international trade in serums is increasing, it is not only an inconvenience, but a positive danger to have their strengths listed according to varying standards.

**Rockefeller Institute Worker Victim of Yellow Fever.**—Howard B. Cross of the Rockefeller Institute of Medical Research, who went to Vera Cruz, Mexico, early in December to study yellow fever, contracted the disease when inspecting sanitary conditions at Tuxtepec, the center of the yellow fever district, and died at Vera Cruz, December 27, at the age of 32. After teaching zoology for two years at the University of Oklahoma, his alma mater, he became a graduate student at the University of Chicago and later at the Johns Hopkins University, Baltimore, where he received the degree of doctor of philosophy. He had enlisted in the Army during the late war but, because of his special qualifications, he was sent to the Johns Hopkins Army Medical School to take part in the investigation being conducted there, under the direction of the Surgeon General of the Army. Since last April he has been making a special study, at the Rockefeller Institute, of the microbe that causes yellow fever, under Dr. Hideyo Noguchi. By direction of President Obregon the body of Professor Cross was taken to Mexico City for special honorary ceremonies, and while there was held under guard of honor headed by Dr. Gabriel Malda and Dr. Alfonso Pruneda, president and secretary of the sanitary department. Burial was at Enid, Okla.

**Congressional Resolutions on Narcotic Addiction.**—On January 4, Mr. Volk, Brooklyn, submitted the following resolution in the House of Representatives, which was referred to the Committee on Interstate and Foreign Commerce and ordered to be printed:

*Resolved*, That the Secretary of the Treasury be, and he is hereby, authorized to transmit to the House of Representatives the facts in his possession on which, under date of October 19, 1921, R. A. Haynes, prohibition commissioner, did cause to be set forth and publish a ruling or regulation outlining treatment of "narcotic drug addiction" permissible under the Harrison law, and under section b of the aforesaid rules and regulations entitled "The ordinary addict," stated:

"It is well established that the ordinary case of addiction yields to proper treatment and that addicts will remain permanently cured when drug taking is stopped and they are otherwise physically restored to health and strengthened in will power. This bureau has never sanctioned or approved the so-called reductive ambulatory treatment of addiction, however, for the reason that where the addict controls the dosage, he will not be benefited or cured.

"Medical authorities agree that the treatment of addiction with the view to effecting a cure, which makes no provision for confinement while the drug is being withdrawn, is a failure, except in a relatively small number of cases where the addict is possessed of a much greater degree of will power than that of the ordinary addict.

"The good faith of the physician and the bona fides of his treatment in a given case will be established by the facts and circumstances of the case and the consensus of medical opinion in regard thereto, based on the experience of the medical profession in cases of a similar nature.

"The following resolution passed by the Council on Health and Public Education of the American Medical Association, at the meeting on November 11, 1920, is pertinent in determining the period over which narcotic treatment should be extended in purely addiction cases:

"*Be it resolved*, That the Council on Health and Public Education of the American Medical Association indorse the principle expressed in the California law (section 8½), which forbids the use of opium and its derivatives in the withdrawal treatment of those addicted to the use of these drugs for a period of more than thirty days after the commencement of the withdrawal treatment."

"This bureau can not under any circumstances sanction the treatment of mere addiction where the drugs are placed in the addict's possession, nor can it sanction the use of narcotics to cover a period in excess of thirty days, when personally administered by a physician to a patient neither in a proper institution nor unconfined.



"If a physician, pursuant to the so-called reductive ambulatory treatment, places narcotic drugs in the possession of the addict who is not confined, such action will be regarded as showing lack of good faith in the treatment of the addiction, and that the drugs were furnished to satisfy the cravings of the addict.

"Doubtful cases, or those not falling within any of the above instructions, upon request will be investigated and special instructions, based upon the recommendations of the inspecting officers, will be issued."

*Resolved further*, That the Secretary of the Treasury is also hereby directed to inform the House as to the facts (1) on which a curb is placed upon the professional judgment of the doctor treating addiction, (2) which necessitate the direction of medication by the prohibition commissioner or his inspectors, (3) which show the qualifications of the prohibition commissioner or his inspectors charged with this work to pass upon medical treatment of narcotic drug addiction; their association with or knowledge of addiction treatment; or their qualifications as either physicians, dentists, or veterinarians, or their training in the science of medicine or its branches, such as therapeutics, pathology, or as laboratory specialists, blood analysts, clinicians, or as general practitioners, which would enable them to qualify to pass judgment upon cases of narcotic addiction or issue special instructions with regard to the treatment thereof.

*Resolved further*, That the Secretary of the Treasury is also hereby directed to inform the House as to the facts concerning the existence of any statute under and by virtue of which the Secretary of the Treasury, or, through him, the Federal Prohibition Commissioner by rules and regulations, is empowered to set aside known facts in medical science and curb the legitimate practice of medicine; and to nullify an Act of Congress, to wit, the Harrison narcotic law, passed in 1914, and which as revised and amended, sets forth in section 1, as follows:

"That the provisions of this paragraph shall not apply \* \* \* to the dispensing, or administration, or giving away of any of the aforementioned drugs (opium derivatives) to a patient by a registered physician, dentist, veterinarian, or other practitioner in the course of his professional practice, and where said drugs are dispensed or administered to the patient for legitimate medical purposes, and the record kept as required by this Act of the drugs so dispensed, administered, or given away."

*Resolved further*, That the Secretary of the Treasury is also hereby directed to inform the House as to the facts which necessitate denying to the narcotic addict the advice and treatment of his family physician, and which under the rules and regulations as issued seek to force him to accept the treatment provided by penal institutions, private sanitariums, and quack "drug-cure" proprietors.

*Resolved further*, That the Secretary of the Treasury is also hereby directed to correlate and inform the House the facts or addenda covering the following interrogations:

(1) The names or name of the official of the Internal Revenue Department writing section b of the regulations promulgated October 19, 1921.

(2) The qualifications of this person or persons to pass upon the medical treatment or narcotic drug addiction, his association with and knowledge of addiction treatment.

(3) The name or names of the Council on Health and Public Education of the American Medical Association adopting the resolution prescribing thirty days as the length of time which shall not be exceeded in treating addiction by the administration of narcotics.

(4) The status of that resolution in the main body of the American Medical Association setting forth the adoption or rejection of the aforesaid resolution by the American Medical Association in convention assembled.

(5) The medical authorities upon which reliance is placed for the quoted statement in paragraph 2, section h, of the rules and regulations.

(6) Any and all additional facts relating to the rules and regulations, together with any information bearing upon the subject matter of this resolution.

Mr. Volkes also submitted the following resolution for the appointment of a special committee, which was then referred to the Committee on Rules and ordered to be printed.

WHEREAS, Competent medical and administrative authorities estimate that between one million and two million persons in the United States are victims of narcotic-drug addiction, and many of these unfortunates are ex-soldiers, ex-sailors and ex-marines, members of the American Expeditionary Forces in the late World War, and the situation arising from the existence of so large a number of narcotic-drug users has created a menace to the physical and moral welfare of the citizens of the United States; and

WHEREAS, This condition of affairs has been complicated and aggravated by administration of existing narcotic laws in the various States and of the Harrison narcotic law by the Federal Government, and many of the rulings of the Federal Government and the provisions of State narcotic laws and sanitary codes of municipalities of the United States point to an organized conspiracy on the part of certain administrators and physicians to drive narcotic-drug addicts into established sanitariums purporting to treat and cure narcotic-drug addiction; and

WHEREAS, This conspiracy has taken the course of rulings, provisions and regulations by the Federal prohibition commissioner at Washington, acting for the Internal Revenue Department of the Treasury Department in the matter of narcotic control, and by the passage of statutes by various State legislatures and the regulation of narcotic-drug distribution by various boards of health of various municipalities of the United States, which are contrary to existing medical bibliography, clinical, and pathological research, and the best medical and lay experience in the handling of addict patients; and

WHEREAS, The said medical bibliography, clinical, and pathological research, ignored in the administration of Federal, State and municipal statutes, rules and regulations, set forth conclusive scientific proof of grave physical reactions in the body of an addict deprived of opium derivatives, resulting in acute discomfort, collapse, and sometimes death; and pathological research shows changes in blood analyses in different stages of the withdrawal of narcotic drugs from addict patients, duplicating in every particular the phenomena evidenced in cases of acute infection and commonly recognized as disease symptoms; and medical records exist that serums extracted from the blood of animals in drug withdrawal has produced the complete symptomatology of drug withdrawal when administered to unaddicted animals of the same breed; and medical history, current and foreign, reports scores of cases of congenital addiction (that is, addiction at birth), and scores of deaths as the result of improper withdrawal of drugs; and

WHEREAS, All of these known facts have been ignored in the administration of the Harrison narcotic law and in the administration of various State narcotic statutes and municipal sanitary codes and regulations, by the issuance of rules and regulations making it impossible for the medical profession to treat narcotic drug addicts without fear of arrest, indictment, and conviction, or interference and persecution by the criminal authorities; and

WHEREAS, Such administration of existing narcotics, Federal, State and municipal, has resulted in an increase in smuggling, peddling and illegal distribution of opium and its derivatives, and exaggeration of conditions in the underworld resulting from the existence of a criminal type of addicts; and such administration has resulted also in a virtual monopoly in the treatment of narcotic addict patients by privately owned and operated sanitariums promoting certain routine formulas and cures for narcotic addiction; and it is a recognized fact among competent clinicians that the physical phenomena presented by the addict patients do not lend themselves to treatment by any specific routine treatment; and

WHEREAS, Evasion and ignorance of these facts is rapidly increasing the criminal class of addicts, spreading addiction among the curious, encouraging smuggling, and driving hundreds of thousands of post-operative and post-war addicts of every walk of life to doubtful cures conducted by charlatans and fakers, and these intolerable conditions, menacing the youth of the Nation and the physical and moral welfare of our citizens can be corrected only by an unbiased and fearless investigation of narcotic addiction conditions in the United States: Therefore be it

*Resolved*, That the Speaker appoint a select committee of fifteen, and shall include therein all members of the medical profession who are Members of the House, and that such committee be instructed to inquire into the subject of narcotic addiction in the United States, the method of handling these unfortunates, the medical addenda available regarding methods of treatment by private physicians, institutions and sanitariums, the effectiveness of the present laws, rules and regulations to control smuggling, trafficking and abuse of narcotic drugs, and for the purpose of drafting legislation for the control of narcotic drug addiction.

For such purposes it shall have the power to send for persons, books and papers, administer oaths and is authorized to sit during the session or recesses of Congress, at Washington or any other place in the United States, and shall have the right to report at any time.

The expenses of the said investigation shall be paid out of the contingent fund of the House upon vouchers approved by the chairman of the said committee and to be immediately available.

[NOTE.—The secretary of the Council on Health and Public Instruction states that the minutes of the meeting of the Council held, November 11, 1920, read "Dr. Cannon moved that the chair appoint a committee on the narcotic drug situation. Seconded by Dr. Emerson and carried. The chair appointed Dr. Haven Emerson, New York City, chairman; Dr. A. C. Prentice, New York City; Dr. George W. McCoy, U. S. Public Health Service; Dr. Thomas S. Blair, state department of health, Harrisburg, Pa. Dr. Emerson moved that the committee be instructed to request the Commissioner of Internal Revenue to incorporate the provisions of the California law in the official ruling. Seconded by Dr. Rankin and carried."

This action of the Council possibly may be the basis for the statement made in the prohibition commissioner's ruling.—Ed.]

## LATIN AMERICA

**Tampico Medical Journal.**—A group of four physicians of Tampico, Mexico, have founded the *Revista Médica de Tampico* and the first number has appeared. The leading article is by Dr. A. E. Gochicoa on the transmission of plague by jiggers, *Sarcopsylla penetrans*, relating the case of a young man seen at the fifth day of plague who had two cysts between his toes due to the presence of jiggers. They had fastened on him five or six days before and he had felt too sick to remove them. Gochicoa queried whether these jiggers might have been responsible for the transmission of the plague, as plague bacilli were found in them. The rest of the cysts were sent to the public health authorities who confirmed the diagnosis. He adds that the account of this case given in the Mexico Letter in THE JOURNAL, Aug. 13, 1921, p. 567, contains several errors: The infected jiggers were found in a living subject, not in the cadaver, and Dr. Monjarás had no part in the investigation. Dr. Gochicoa is one of the editors of the *Revista*; the others are Dr. C. Canseco, Dr. A. Alarcon and Dr. A. Cuaron. The *Revista* is to be issued monthly.

## FOREIGN

**Personal.**—Professor Heitz-Boyer and Dr. Pasteur Valléry-Radot, Paris, were the official delegates at the Fifth Cuban Medical Congress recently, representing the Paris Medical Faculty, the Société de Chirurgie and the Société Médicale des Hôpitaux.—Prof. T. Tuffier has returned to France after his official trip to China and Cochin China. He had been invited to deliver an address at the opening exercises of the Pekin Medical School, as already mentioned. His visit of inspection to the medical institutions of French China was concluded with a reception and banquet tendered him by the physicians of Hanoi.



**State Welfare Work in Czechoslovakia.**—The Lady Muriel Paget Mission, working in Czechoslovakia in connection with the league of the Red Cross societies, is operating an automobile clinic or traveling dispensary, which began its work last May and in three months covered more than 3,000 miles, serving eleven villages, where about 2,000 children have been treated. The clinic is held by the local physician, or in cases where there is no physician, by a physician from the nearest village. The traveling clinic accomplishes a two-fold task; it undertakes immediate relief work, frequently going to villages which are many miles away from the nearest doctor or chemist, and it carries on the work of instructing mothers how to care for their children.

**Graduate Courses at Paris.**—Our Paris exchanges repeat that four four-week courses on tuberculosis are to be given at Paris during the year. The first commences January 16, and is in charge of Dr. Rist; the second, April 24, in charge of Professor Bezançon; the third, June 15, in charge of Professor Sergeant, and the fourth, September 25, in charge of Prof. L. Bernard.—The University of Lyon offers a course in applied bacteriology and serology, with certificate on completing the course. Professor Arloing is in charge and the course lasts two months. Further details on application to the secretary of the medical faculty, Lyon.—The Paris Pasteur Institute has resumed its graduate courses on microbiology. They begin January 15 and continue for four months. The *Presse Médicale* for Dec. 14, 1921, gives the full details of the course in the numerous laboratories comprised in or connected with the institution, and the list of subjects. The number admitted to the course is limited; the fee is 500 francs. Lectures on subjects interesting to biologists in general are given supplementary to the courses. For particulars apply to the Economat, Pasteur Institute, Paris.

#### Deaths in Other Countries

Dr. Errico de Renzi, professor of clinical medicine at the University of Naples, whose studies of deranged metabolism, heart sounds, etc., are well known.—Dr. E. Pérez Noguera, inspector general of the Spanish army medical department.—Dr. Secretan of Lausanne, aged 86.

#### CORRECTION

**Additional Facilities for U. S. Veterans' Bureau.**—In THE JOURNAL, Dec. 31, 1921, appears a note in which it is stated a certain sum of money had been appropriated for the Veterans' Bureau for additional hospital and outpatient dispensary facilities. The bill in question did not pass.

## Government Services

#### Retirement of Army Officer

Col. Henry A. Shaw, M. C., U. S. Army, Washington, D. C., on his own application, was retired from active duty, Dec. 22, 1921, after more than thirty years' service.

#### Brigadier-Generals in Army Reserve

President Harding has nominated Dr. William H. Welch, Baltimore; Dr. Frank Billings, Chicago, and Dr. William J. Mayo, Rochester, Minn., to be brigadier-generals in the Reserve Corps of the Medical Department of the army.

#### Veterans' Bureau Takes Over Evergreen Institute

The U. S. Veterans' Bureau has officially taken over the Evergreen Institute for the Blind at Baltimore, Md., and will conduct it as a hospital for blinded veterans of the World War. There will be no change in the personnel of the institution, it was announced.

#### Proposed Return of Public Health Reserve Officers to Civilian Status

The bureau of efficiency and Colonel Clifford, assistant secretary of the Treasury, have recommended to Brig.-Gen. Charles E. Sawyer, president of the board of hospitalization, the return of reserve officers of the U. S. Public Health Service to civilian status as an economy measure. The

change would mean a saving of approximately \$750,000 a year, according to the bureau's estimate, as there are at present 1,020 of these reserve officers now on active duty with the U. S. Public Health Service receiving the full pay of the regular officers. Strong opposition has developed to the recommendation from various sources. Surg.-Gen. Hugh S. Cumming of the U. S. Public Health Service as well as Director Forbes of the U. S. Veterans' Bureau is against the proposal, claiming that it will demoralize the system of care and treatment of ex-service men now established in the hospitals throughout the country. The American Legion has taken an active stand against the demobilization of these reserve surgeons, as have also the reserve officers of the U. S. Public Health Service, who proclaim that if they are transformed to a civilian status they will return to the private practice of medicine. Surgeon-General Cumming's opposition is based upon the claim that all the government would save by this measure would be the commutation of quarters given the reserve officers of the Public Health Service while their civilian status would interfere with the mobility of the Public Health Service. He also contends that the return of more than one thousand surgeons to inactive duty would disrupt the organization, causing many resignations. Edwin S. Bettelheim, Jr., chairman of the legislative committee of the Veterans of Foreign Wars, has written a letter to President Harding protesting against the plan. In discussing the plan, Mr. Bettelheim claims that it contemplates the reduction of salary of approximately 20 per cent. and the taking away of commissions from the reserve medical officers, many of whom served overseas. Telegrams from patients in government hospitals, all of them disabled soldiers undergoing care and treatment, have also been received petitioning against any change in the present arrangement. Recent reports indicate that the order will not be issued.

#### Appropriations for U. S. Public Health Service

The Appropriations bill for the Treasury Department passed the House, January 6, making appropriations for the U. S. Public Health Service and other bureaus dealing with public health under the jurisdiction of the Treasury. The measure contained the necessary sums to cover the payment of the salaries of surgeons and officers of the U. S. Public Health Service. There were also appropriations for the quarantine service, for the prevention of epidemics, for field investigations including investigations of sanitation and sewage and pollution of public streams, rural sanitation, biologic products, and maintenance of the division of venereal diseases. Appropriations for hospitals were as follows: \$100,000 for U. S. Public Service Hospital No. 60, Oteen, N. C.; \$150,000 for U. S. Public Health Hospital No. 42, Perryville, Md.; \$50,000 for U. S. Public Health Service Hospital No. 44, West Roxbury, Mass.; \$50,000 for U. S. Public Health Service Hospital No. 24, Palo Alto, Calif. The bill passed the House and was sent to the Senate without a recording vote.

#### Protection Against Disease Carrying Immigrants

The U. S. Public Health Service has requested the State Department to instruct its consuls in all the ports of Europe to refuse a bill of health to vessels sailing for the United States that do not maintain adequate cleansing measures. The action is taken in order to prevent vermin-bearing immigrants to land in this country and cause the spread of typhus. A rigid system of delousing is also being maintained at all American ports and quarantine officers have been ordered to observe the regulations with the strictest regularity, particularly the precaution detaining all immigrants of the slightest suspicion for ten days. At present the reduction in immigration brought about by the change in laws restricting their number has caused the conditions with reference to typhus infection to be reasonably satisfactory in the United States.

#### Proposed Investigation of Narcotic Situation

Representative Volk of New York has presented a resolution to the House asking for the appointment of a committee of fifteen members to investigate narcotic conditions in the United States. The investigation will be based upon the traffic in drugs, the source of supply and the alleged increase in the number of addicts in the country. The results of this inquiry will be submitted to Congress with recommendations for the necessary legislation.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec. 12, 1921.

#### Self-Disinfection in the Prevention of Venereal Disease

The attack by the National Council for Combating Venereal Diseases on the method of self-disinfection which is advocated by the Society for the Prevention of Venereal Disease has been reported in a previous letter (*THE JOURNAL*, Dec. 31, 1921, p. 2131). The society has made a rejoinder in which it traverses the view that immediate self-disinfection can be carried out only in disciplined forces. The statistics on which this method was supported concerned men who were not in any way forced to adopt the method and who suffered no penalty for neglecting it. The National Council quoted statistics "from the largest clinic in London," stating that about 25 per cent. of the cases of venereal disease had used immediate self-disinfection. This is a considerably higher percentage than that obtained by a similar inquiry at the London Hospital, in which only 18 per cent. were found to have used any disinfectants whatever, and of these practically none were able to state the strength of the solution applied, and very few, if any, had received the necessary instruction. Moreover, there is the possibility of error in that there may have been several exposures and the disinfectant may have been used only after the last. The council makes the extraordinary suggestion that, because there has been an increase of venereal disease in Dresden among boys and girls between 14 and 18 years of age, and as it is impracticable to teach disinfection at these ages, the method is of no value. The number of boys contracting venereal disease at these ages is very small; and even if self-disinfection is then of no avail, which the society does not believe, the value of the method is not materially affected. The council makes the old plea that the carrying of disinfectants on the person would be a continual incitement to illicit intercourse. But this is entirely a question of opinion, and many hold the opposite view. The council states that self-disinfection is unsatisfactory in the majority of women. Failure appears to be due to imperfection of instruction. The method is much more successful among prostitutes than among amateurs in vice. The council objects that disinfectants will be used by the men as treatment for the contracted disease. For this mistake, the council and the army medical authorities are largely responsible, since they have named disinfection "early treatment." The society reaffirms its opinion that disinfectants do disinfect and that immediate self-disinfection, when carried out with disinfectants of suitable strength, according to suitable simple instruction is an extremely valuable method of reducing the incidence of venereal disease.

#### Proposed World List of Scientific Periodicals

A circular has been issued by the Conjoint Board of Scientific Societies to the leading libraries, scientific institutions and similar bodies in this country, describing a scheme for the publication, if sufficient support is obtained, of a list of all the periodicals of every country which publish the results of scientific research. There are many thousands of these. A list will be given of some of the chief centers in Great Britain and Ireland in which the periodicals may be consulted. The British Museum has consented to allow the work of compilation to be undertaken by its staff, so that the authenticity of the list of periodicals is assured. It will be an octavo volume, containing in alphabetical order the titles and places of publication of all such periodicals in existence. Copies

will be printed on one side of the paper only, to facilitate the making of alterations and additions. The price will be \$10. One of the objects in compiling the list is to form a basis of cooperation between libraries, so that both the number of duplicates and the list of periodicals not taken may be reduced. It is scarcely possible that the production of so costly a work will be undertaken by a publishing firm as an ordinary commercial enterprise. If, however, a sufficient number of libraries and institutions agree in advance to purchase one or more copies, the compilation of the list will at once be put in hand.

#### Official Report on Diphtheria

An important report has been made to the ministry of health by Dr. Monckton Copeman, who has collected data and made personal observations on the Schick test and on active immunization against diphtheria. He considers that it would be premature to advise that, in English communities, general immunization of persons susceptible to diphtheria should be attempted on the New York scale. More information and experience would be necessary before this could be recommended, and it would be necessary to be satisfied that equally good results cannot be obtained by extension and improvement of the methods of diphtheria prevention on which we rely at present. However, a trial of the Schick reaction and of toxin-antitoxin immunization is warranted in certain circumstances. Thus, nurses who come into close contact with diphtheria may desire protection, or medical officers of schools may desire to protect pupils when diphtheria is prevalent. The notification of diphtheria should be limited to persons actually suffering from the disease. In some districts physicians extend notification to diphtheria carriers, but it is doubtful whether the practice is justifiable. Statistically, it leads to much confusion. The healthy carrier is often removed to a hospital, where he may exclude those urgently requiring treatment. Further inquiry might have shown that no benefit to the community or the individual is likely to result. Thus, a child attending school, found to be a carrier, may merely have acquired the condition in common with the majority of the other children; his bacilli may be nonvirulent, and consequently he does not in all probability constitute a danger to other persons. In the treatment of diphtheria, antitoxin should be used when the clinical evidence is definite.

Delay while waiting for a bacteriologic report leads to unsatisfactory results. There is considerable divergence in the practice of different institutions as to the extent of bacteriologic examination before the patients are sent home. If an abundance of assistance in bacteriologic examinations were available, it would no doubt be desirable to discharge no case without a sufficient number of examinations to establish a high degree of probability that the convalescent had ceased to harbor diphtheria bacilli, or that he carried only nonvirulent organisms. But the condition of abundant assistance is seldom realized. The necessity for routine bacteriologic examination may be much lessened by attention to the establishment of normal conditions in the throat and nose before the patient is discharged. The experience of "return cases" in certain of the London fever hospitals in which a routine examination of discharged convalescents is not made seems to show that the return of convalescents to their homes in an infectious condition may be avoided with as much success as that obtained in hospitals which adopt the rule that two or more swabbings must be negative before the patient is discharged. When the bacteriologic resources of a hospital are limited, they are best utilized for diagnosis in doubtful cases and, with regard to convalescents, for those showing chronic nasal discharge or chronic sore throat, which requires investigation from the carrier point of view. The same con-



siderations apply to the question of the return of the child to school. The risk of return of a virulent carrier may be greatly lessened without bacteriologic tests, by making sure that he has clinically recovered. With regard to routine swabbing, in outbreaks of diphtheria in schools, this practice seems to be chiefly useful on the first appearance of cases. It may serve to detect children whose noses or throats are infected and so lead to isolation. At a later stage, however, the spread of the carrier condition, as distinct from actual diphtheria, often becomes extensive and swabbing affords little guide for useful action. It then seems better to concentrate on the clinical condition and the temporary exclusion of those showing signs of chronic sore throat and nasal discharge, while at the same time bacteriologic methods are used for determining the nature of these cases.

#### The Third International Congress of the History of Medicine

The third international congress of the history of medicine will be held in London, under the presidency of Sir Norman Moore, from July 17 to July 22, 1922. Meetings will be held at the Royal Society of Medicine, the Royal College of Physicians, the Royal College of Surgeons and the Wellcome Historical Museum, where there will be an exhibition of objects connected with the history of medicine and surgery and the allied sciences, including ancient manuscripts, early printed books, pictures, sculptures and engravings, ancient surgical instruments and medals. The subjects suggested for discussion are: (1) the principal seats of epidemic and endemic disease in the middle ages, including plague, gangrenous ergotism, leprosy and malaria, and (2) the history of anatomy. Further information may be obtained from the general secretary, Dr. J. D. Rolleston, 21, Alexandra Mansions, King's Road, London, S.W. 3.

#### PARIS

(From Our Regular Correspondent)

Dec. 9, 1921.

#### Transportation of Wounded by Aeroplanes

At the recent international congress of aerial navigation, Major Vincent of the army medical corps, and member of the executive staff of the sanitary service of the ministry of war, presented an interesting communication on the transportation of wounded by aeroplanes. This mode of transportation was advocated as far back as 1919 by Dr. Duchaussoy of Nice, after having been subjected to a careful investigation by Dr. Emile Reymond, a member of the French senate, whose heroic death, at the beginning of the war, I mentioned at the time. Dr. Chassaing, a member of the chamber of deputies, from the department of Puy-de-Dôme, succeeded, during the war, in inducing the aviation department to construct an aeroplane especially designed for the transportation of two wounded men in a recumbent position. This aeroplane was first tried out at Villacoublay, in September, 1917, and later on the Aisne front. Four similar models were sent to Morocco, where they were used very effectively.

The transportation of wounded by aeroplane has now become a regular sanitary formation of the army service in the theater of operations in Morocco and the Levant. From December, 1920, to March, 1921, more than eighty wounded were transported in this manner. Six months later, the number of wounded and gravely ill conveyed by this new mode of transportation had reached nearly 700. On Oct. 14, 1921, Major Epaulard, of the army medical corps, organized in Morocco, with the six sanitary aeroplanes of the brigade, a regular squadron, which transported in thirty-seven minutes eighteen wounded from the post of Issoual, 80 kilometers (48 miles) distant, to the Meknès hospital. And,

more recently, a large number of wounded who fell in combat on the banks of the Euphrates were transferred to Aleppo from a point more than 250 kilometers (150 miles) from this sanitary center. This new means of transportation is of paramount importance in countries lacking good roads, where evacuations are made by wagon and are thus often impossible in the case of gravely wounded soldiers. In order to improve this system of conveyance, aeroplanes have been equipped so as to give all the comfort possible to the wounded. The type of machine in present use allows the transportation of two patients in a recumbent position, in a tightly closed and comfortable cabin. If it is desirable, they are accompanied by a nurse, with the necessary sanitary equipment to give them the urgent care needed during the journey. The question of utilizing aeroplanes for the transportation of wounded in Algeria, Tunis and France is now being considered. This mode of evacuation must, on account of the risk and the great expense involved, be regarded, for the time being, as exceptional. Toubert, medical inspector and director of the sanitary service of the ministry of war, has issued instructions that the transportation of a wounded soldier by aeroplane shall be indicated by the gravity of the wound or of the disease, in order that the risks to be run may be counterbalanced by the added service thus secured to the patient.

The organization of sanitary squadrons, with carefully selected pilots and medical personnel, and an improved aeronautic and medical equipment, is becoming more and more imperative. In fact, tentative plans have already been worked out. It has been proposed that landing fields be created near hospital formations, and that direct and rapid wireless connections be established between the operating forces, or isolated posts, and the aeroplane squadron, which must be further developed in order to accomplish transportation in the minimum of time, which is an essential condition for surgical success.

#### Regulations Concerning Exterior Display of Goods and Wares in Winter

Monsieur Daniel-Vincent, minister of labor, having learned that many children and women are employed in selling goods from outside displays during the severe winter weather that now prevails, has called the attention of all merchants to the law prohibiting the employment, for such purposes, of boys less than 14 and girls less than 16 years of age. Furthermore, the employment of children less than 18 and of women of any age is absolutely prohibited after 8 o'clock in the evening or when the temperature is below freezing. Employees of both sexes must be protected against inclemencies of the weather by awnings or by other effective means. During cold weather, the interior of the store must be adequately heated. Labor inspectors have been instructed to see that these regulations are strictly observed by storekeepers.

#### Sex Education in Relation to Public Instruction

In anticipation of a congress that is being organized for 1922 by the Comité de propagande d'hygiène sociale et d'éducation prophylactique, for the purpose of making a special study of the question of sex education of youth, Léon Bérard, minister of public instruction, has decided, at the suggestion of the organizers of the congress, to consult with the school authorities. He held that, in order to secure conclusive results, the consultation should include associations of heads of families and associations of alumni. The following questionnaire has accordingly been sent to various heads of schools: 1. Do you believe that the schools should give boys and girls systematic instruction in sex questions (phenomena of reproduction, venereal diseases)? 2. If so, at what age do you believe the instruction should



be given? 3. What methods should be employed (lectures illustrated by lantern slides, presentation of illustrations, visits to museum, etc.)? 4. Should this instruction be for boys only or for both sexes? 5. Should the instruction be entrusted to the teachers or to physicians, with possibly women physicians for the girls? 6. Should sex education be included in the regular course of instruction in the natural sciences (elementary and secondary instruction)? 7. Should the necessary knowledge on sex subjects be added to the textbooks now used by the pupils?

#### Fantastic Accounts of American Surgery

A medical journal, the *Vie médicale*, seems to specialize in fantastic news items on subjects pertaining to the United States, and I have previously had occasion to direct attention to some of its grotesque ideas on American prohibition (THE JOURNAL, April 2, 1921, p. 947). In one of its recent numbers, the same journal mentions "another bit of American news," entitled "A Novel Graft Operation."

I am quoting it here verbatim, although it might be more appropriately assigned to the "Tonics and Sedatives" column: "The account deals with an operation performed on a blind child, by which sight was restored by the use of a corneal graft from a pig. The child had been blind from birth. After a first operation, vision in the right eye was restored, but it was noted that the left eye had no cornea. What was to be done? The operator took the entire cornea from a young pig and grafted it on to the child's eye. The operation was a complete success and the child will be able to see with the left eye."

#### Graduate Theses on Pharmaceutic Specialties

In order to advertise their products, the manufacturers of pharmaceutic specialties are resorting more and more to the following scheme: They write to students who are about to finish their medical studies and offer to pay the cost of printing doctoral theses, provided the subject chosen for discussion is one of their pharmaceutic products. In an editorial, the *Journal des praticiens* protests against the acceptance of such doctoral theses. It holds, and rightly so, that the medical faculty has not the right to decide in favor of a product whose ingredients are obscured by an industrial trade name. The scientific societies, the Academy of Medicine and the Society of Comparative Pathology oppose, as a general thing, the reading of communications dealing with pharmaceutic specialties. The members do not wish the prestige of their society to be compromised by any suspicions. A scientific society must not, under any circumstances, favor industrial interests.

#### BELGIUM

(From Our Regular Correspondent)

Dec. 2, 1921.

#### Hysteropexy by Ligamentopexy

At a recent meeting of the Belgian Surgical Society, Monsieur Karhausen demonstrated his method of performing hysteropexy and told of the results he had secured after ten years of application. He operates in the following manner: A cutaneous, curving incision is made from one internal inguinal ring to the other, passing 1 cm. ( $\frac{3}{8}$  inch) above the pubis; the aponeurosis of the rectus muscles is then divided transversely, following which two incisions are made through the aponeurosis lengthwise of the inguinal canal. The rectus muscles are pushed aside and a vertical opening is made in the peritoneum. After the uterus and its adnexa have been examined, the round ligament is grasped lightly with small forceps at the level of the internal inguinal ring and is drawn into the canal. It is then sutured into the bed which it occupies normally, and the wound is closed. The

procedure, when applied to adequate ligaments, has always been successful.

#### Individual Sanitary Record Books

In accord with the progress of social hygiene, the public health authorities have established a system of individual sanitary record books, which will contain in a condensed form the sanitary record of all citizens from birth to maturity. Professor Spehl of Brussels has recently recommended a certain practical type of sanitary record book. The size of the form of book he favors is 13 by 20 cm. (5 by 8 inches). It contains brief but useful hints on personal hygiene and explains the purpose of the book throughout the preadult stage in the life of the holder. The pages to be filled out will contain information in regard to the family history of the holder, and observations made during the consultation for nurslings and in the course of the medical inspection of schools. It will contain also an account of any interesting pathologic facts that may arise between the ages of 14 and 20, and during the period of military service. The last page of the record book gives, in an abbreviated form, comparative tables for the study of nutrition and respiratory function in male subjects.

#### Physical Training in Relation to Medicine

The Institut supérieur d'éducation physique de l'armée, as recently established by Minister Devéze, opens a category of instruction for physicians who desire to pursue a special course of training in gymnastics as pertaining to medicine. A diploma entitling the possessor to the appellation "médecin gymnaste" will be given to our confrères who complete the course. This is a happy ending of a long campaign waged by Dr. de Marneff. It is evidence that the faculties of medicine have allowed themselves to be outdistanced by the military organization, which has succeeded in finding a means of giving a rapid and practical impetus toward the solution of the problems of physical education.

#### A Franco-Belgian Medical Expedition to French Morocco

At the suggestion of the *Bruxelles médical*, the Compagnie générale transatlantique, which has contributed so much toward making traveling safe and comfortable in Morocco, which until recently was in a very disordered state but which, under the French flag and a competent chief, has become pacified, is organizing for the near future a complete tour of the empire of the sultan Moulaï Youseff in the interest of physicians. The sanitary and hygienic services of Morocco have offered to collaborate to make the expedition a success. Some time will be spent in becoming acquainted with the various points of interest, but the peculiar pathology of the country and the remarkable sanitary organization will receive their share of attention. For, while it may be said with truth that, owing to the elaborate military protection, travelers, tourists and colonists may traverse by automobile with perfect safety almost 3,000 kilometers (1,800 miles) of country, it should also be noted that, owing to medical protection, all danger from epidemics has been removed.

#### Homage to Be Paid to Professor Fredericq

At the end of the present academic year, Prof. Léon Fredericq is to retire from the chair of physiology in the University of Liège. His confrères, pupils, former pupils and friends have decided to organize a festive occasion in honor of the closing of his professional career. Every one is familiar with his prodigious and fruitful activities and the part he has taken in the progress that has been realized in the domain of the biologic sciences during the course of the last fifty years. He has also to his credit the founding of the Liège Institute of Physiology. The ceremonies will consist in the presentation to Professor Fredericq of a memorial



volume, which will be produced by the collaboration of the scientists of the allied and neutral countries, and the placing of a medallion effigy of the master in the Liège Institute of Physiology.

### BUENOS AIRES

(From Our Regular Correspondent)

Nov. 9, 1921.

#### Leprosy

Dr. P. L. Baliña recently delivered an interesting lecture at the Academy of Medicine on 142 cases of leprosy observed during the last decade. Cases have occurred in places so far considered exempt from the disease. Although a national conference on leprosy was held in 1906, its recommendations were not carried out. Leprosy has continued to increase; during the decade 1901-1910, there were eighty-six deaths from leprosy in Buenos Aires; in the decade 1911-1920 there were 134. Baliña has seen twelve new cases each year, that is, one a month. Many of the patients are residents of the capital or come from communities in the province of Buenos Aires which had been considered immune. Several patients were in domestic occupations, as waiters, cooks, seamstresses, barbers, street car conductors or pedlers. Many of them were food handlers. He referred to numerous instances of family epidemics, without a family history, some of them in foreigners. Many of these foci were active. In some cases, the lesions were florid, profuse, extensive and ulcerative. He laid stress on the need of enforcing compulsory prevention and treatment in order to prevent the spread, as yet slow but evident, of the disease.

#### Third Tuberculosis Conference

The third conference on antituberculous prophylaxis was held at La Plata, October 23-28. Many papers were presented. The unification and organization of the vital statistics services of the different provinces were advised (Drs. Lozano, Araoz, Alfaro, Sayago). A recommendation was presented for the establishment of suburban hospitals and sanatoriums, and dispensaries, using for this purpose the proceeds of the lottery, and compulsory insurance (Dr. Cabred). Dr. Raimondi emphasized the present insufficiency of hospitals. The establishment of tuberculous colonies rather than hospitals was proposed (Sisto and Biraben). In another paper, mention was made of the need of special cars for tuberculous persons in the trains going to health resorts (Galatoire). The need of studying the climatic zones of the country was emphasized by Cabred, Martinez, Pitt and Alvarez. A recommendation was made to the effect that medical schools devote especial attention to the teaching of antituberculosis hygiene (Zwank). The establishment of sanatorium schools was recommended by Benitez, and of farms and agricultural colonies by Carbonell. The number of papers and of recommendations was considerable; but unfortunately the resources available are very inadequate. Several of the resolutions dealt with the building of healthful, inexpensive homes, working men's insurance, federation of antituberculosis societies, and friendly antituberculosis societies. In brief, the growing interest in this problem and the insufficient means available to combat it were made evident.

#### Scientific Interchange

Lectures have been given by Professor Butler of Montevideo on radium therapy and Dr. Silva Araujo of Rio de Janeiro on the Brazilian organization to combat venereal diseases, leprosy and cancer. In addition, Dr. Weinberg of the Pasteur Institute of Paris gave two lectures on gangrenous infections and their treatment with polyvalent serum. Prof. C. A. Castaño, P. Escudero and O. Bottaro of this country have also given lectures in Montevideo.

### BERLIN

(From Our Regular Correspondent)

Dec. 16, 1921.

#### New Researches on Juvenile Psychology

At the invitation of various pedagogic associations, Dr. A. Riekkel, a collaborator of the Psychologic Institute of the University of Marburg, has been delivering lectures in certain cities of central Germany on the researches of this institute in the domain of juvenile psychology. Under the superintendence of the director, Erich Jaensch, professor of philosophy, an entirely new world of juvenile psychologic activity has been discovered. It has been shown that most juveniles possess, to a greater or less extent, the capacity to produce "*Anschauungsbilder*," or intuitive images. Children who have this capacity can reproduce or clearly perceive intuitively, after a shorter or longer period of time, whatever has been presented to them. This capacity is of paramount importance in the gradual building up of a child's fund of concepts and percepts. It is of no less importance that, through the medical researches carried out in connection with these psychologic investigations, it has been shown that a large proportion of backward pupils, as compared with the so-called "eidetics" (those who possess the capacity of intuitive perception), are suffering from a hypofunctioning of the thyroid gland, which is the cause of the slow thinking that characterizes such pupils. By the administration of thyroid preparations, it proved possible to improve considerably, within a short time, the grade of intelligence of such backward pupils.

#### An Attack on Quackery

A medical association of southern Germany has published the following communication in the daily press of the community:

In view of the spread of quackery, the physicians of the government district of Rottweil feel compelled to refuse medical aid (urgent cases excepted) to such persons as are in the habit of consulting quacks (magnetopaths, so-called eye diagnosticians, and other would-be therapists).

#### Occultism in Berlin

To what extent occultism and mysticism are rampant in Berlin is shown by a communication published in the *Deutsche allgemeine Zeitung*. A reader (a woman) writes to the journal as follows: "I received recently an anonymous letter with this content: 'Just for luck! Copy this and send it to two persons whom you wish good luck. Count nine days from today and on that date you will have a stroke of luck. Do not break the chain, for the one who does so will meet with some disaster. This chain or circle extends forty-four times around the world, having been begun by an American officer. Attend to this at once before twenty-four hours shall have elapsed.'" All Berlin is being deluged, at the present time, with these *epistolae fortunae*. Another reader of the same journal states, under the heading, "The Occult Automat," that an automatic fortune-telling apparatus has been set up in Berlin in the down-town district. The seeker after occult knowledge puts his hand on a disk on which a large number of pegs appear. After the lapse of a few moments, a card informing one in plainly printed lines of one's future fortune jumps out of a chiromantic receptacle. If the whole hand is not allowed to rest on the disk, the card thrown out reads: "Do not tempt the gods." There is always a crowd around the automat. Right in line with these two manifestations is a circular issued by the order of occultists, whose head, a certain Professor Weber-Robine, has organized a training school for occultists. There is a correspondence department, an intramural department and a seminar for mediums. The charges for the various courses are 36, 72 and 96 marks.



THE REFERENDUM ON THE USE OF ALCOHOL IN THE PRACTICE OF MEDICINE

(Continued from page 57)

On December 24, THE JOURNAL published the results of the referendum on the use of alcohol in the practice of medicine in Illinois and Indiana. On December 31 appeared the reports on Idaho, Kansas, Maine, Mississippi, Nebraska and Rhode Island. Last week results were given for eleven states, viz.: Arizona, Colorado, Connecticut, Delaware, Georgia, Iowa, Michigan, Montana, North Dakota, Ohio and Pennsylvania. This week results are given for fourteen states, viz.: Alabama, Arkansas, California, Florida, Kentucky, Louisiana, Maryland, Minnesota, Missouri, Nevada, New Hampshire, New Mexico, New York and Wisconsin, and the District of Columbia. Under "Comments," in each state, are printed selections from some of the replies; lack of space prevents giving more than a few of these comments.

ALABAMA

The prohibition law in Alabama became effective, July 1, 1915. Physicians are permitted to prescribe pure alcohol only, not to exceed one-half pint on a single prescription. Permits are issued by the judge of the county probate court. Prescriptions must contain the name and address of the physician and the patient, the date, the number of like prescriptions written for the same patient during the last year, the disease from which the patient is suffering, the dose and

13; no, 6. Total for the cities, yes, 26; no, 44; for the rural districts, yes, 135; no, 222; for the state, yes, 161; no, 266.

On the question "Is beer a necessary therapeutic agent?" the vote was: Birmingham, yes, 10; no, 40; Mobile, yes, 7; no, 12. Total for the cities, yes, 17; no, 52; for the rural districts, yes, 85; no, 269; for the state, yes, 102; no, 321.

On the question "Is wine a necessary therapeutic agent?" the vote was: Birmingham, yes, 6; no, 44; Mobile, yes, 9; no, 8. Total for the cities, yes, 15; no, 52; for the rural districts, yes, 83; no, 265; for the state, yes, 98; no, 317.

RESULTS IN ALABAMA

ALABAMA	Birmingham	Mobile	Total Cities	Rural	Grand Total
Number of physicians.....	316	98	414	1,991	2,405
Questionnaires sent .....	114	38	152	616	768
Questionnaires returned .....	52	20	72	359	431
Percentage of returns.....	45	53	47	58	56
General practitioners .....	32	10	42	340	382
Surgeons .....	14	9	23	7	30
Specialists .....	6	1	7	12	19
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?					
Yes.....	13	13	26	135	161
No.....	38	6	44	222	266
Do you regard beer as a necessary therapeutic agent in the practice of medicine?					
Yes.....	10	7	17	85	102
No.....	40	12	52	269	321
Do you regard wine as a necessary therapeutic agent in the practice of medicine?					
Yes.....	6	9	15	83	98
No.....	44	8	52	265	317
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?					
Yes.....	6	6	12	83	95
No.....	44	13	57	260	317
How many times have you found it advisable to prescribe these liquors in a month?					
Whisky: Number of physicians stating times advisable.....	13	7	20	78	98
Number of physicians stating no times advisable.....	34	8	42	203	245
Beer: Number of physicians stating times advisable.....	6	1	7	39	46
Number of physicians stating no times advisable.....	37	11	48	219	267
Wine: Number of physicians stating times advisable.....	3	2	5	35	40
Number of physicians stating no times advisable.....	38	10	48	224	272
Do you hold a federal permit?					
Yes.....	1	..	1	22	23
No.....	14	4	18	134	152
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?					
Yes (limit not specified).....	9	2	11	66	77
Restricted absolutely .....	15	3	18	79	97
1 to 50 prescriptions.....	5	1	6	23	29
51 to 100 prescriptions.....	6	3	9	49	58
More than 100 prescriptions.....	..	1	1	3	4
Total.....	35	10	45	220	265
No restriction .....	10	7	17	126	143
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?					
Yes.....	35	12	47	224	271
No.....	8	5	13	122	135

the method of administration. Such prescriptions may be issued only after an actual physical examination. A copy of each prescription signed by the physician must be filed with the probate judge, who will deliver them to the next grand jury for examination.

Questionnaires were sent to 768 physicians in Alabama, and 431, or 56 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Birmingham, yes, 13; no, 38; Mobile, yes,

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 95; no, 317.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 98 had found it advisable to prescribe whisky, and 245 had not found it advisable; 46 had found it advisable to prescribe beer, and 267 had not; 40 had found it advisable to prescribe wine, and 272 had not found it advisable.



To the question "Do you hold a federal permit?" the replies were: yes, 23; no, 152.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 265 stated that they should be restricted, and 143 did not believe such restrictions necessary; 77 physicians answered yes, but did not specify a limit; 97 stated that the number should be limited to absolutely none; 29 considered from 1 to 50 prescriptions in three months sufficient; 58 considered from 51 to 100 satisfactory, and 4 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 271; no, 135.

COMMENTS

Domestic wine, national formulary preparations, and grain alcohol within certain reasonable limits should be allowed as vehicles; restrictions in dose by dose of drug dissolved therein to half an ounce; administrative procedure as in Harrison Narcotic Law.—*Russell County.*

If it were possible to enforce prohibition the many advantages to be gained would be incalculable. As it is, prohibition in this state is a farce, and people are drinking any sort of a concoction they can get.—*Tuscaloosa County.*

Prescribing alcoholics should be so restricted that a breach of the spirit of the law should be punishable as a crime. Over the entire South, the abolition of open saloons has made this country a more decent place in which to live. It has also fed hungry children, and brightened the hearts of many homes. Abolishing the saloons has made debt-paying men and regular laborers.—*Gadsden.*

Alabama has the tightest law in the Union; we can't even purchase alcohol for use in the laboratory. Personally, I believe whisky should be kept in the drug stores so that any physician could prescribe it if he desired to do so; but, on account of the unscrupulous doctors who prescribe it as a beverage, I think it better not to have it at all, as the Alabama doctors offer sufficient proof that whisky is not necessary in the practice of medicine.—*Anniston.*

ARKANSAS

Prohibition in Arkansas became effective, Jan. 1, 1915. A more stringent law was passed in January of the following year. Physicians may prescribe alcohol only to the patients under his charge. Before issuing any prescriptions, physicians must file with the county clerk an affidavit certifying that they will not prescribe or furnish any alcohol to any one except for the necessary treatment of disease, as a medicine.

Questionnaires were sent to 640 physicians in Arkansas, and 348, or 54 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Little Rock, yes, 19; no, 20; for the rural districts, yes, 131; no, 176; for the state, yes, 150; no, 196.

On the question "Is beer a necessary therapeutic agent?" the vote was: Little Rock, yes, 11; no, 27; for the rural districts, yes, 62; no, 241; for the state, yes, 73; no, 268.

On the question "Is wine a necessary therapeutic agent?" the vote was: Little Rock, yes, 12; no, 25; total for the rural districts, yes, 79; no, 227; for the state, yes, 91; no, 252.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 87; no, 247.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 89 had found it advisable to prescribe whisky, and 124 had not found it advisable; 30 had found it advisable to prescribe beer, and 147 had not found it advisable; 43 had found it advisable to prescribe wine, and 138 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 33; no, 159.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 212 stated that they should be restricted, and 118 did not believe such restrictions necessary; 70 answered yes, but did not specify a limit; 70 stated that the number should be limited to absolutely none; 33 considered from 1 to 50 prescriptions in three months sufficient; 34 considered from 51 to 100 satisfactory, and 5 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 241; no, 101.

COMMENTS

Prohibition is surely a farce. Our government should manufacture and sell liquors under a law similar to that of Sweden, who tried total prohibition three times with three failures.—*Hot Springs.*

I do not believe that an ethical doctor should be limited to any certain number of prescriptions that can be used in a given length of time, but should have the privilege of prescribing it as he would any other valuable and potent agent in the treatment of diseases. There would be some doctors that would abuse this privilege. There might be occasion for only one prescription in ninety days; but if the doctor's practice included sufficient patients, he might need many times this number.—*Lake Village.*

The illegitimate prescribing of liquors should be restricted as is narcotics. The legitimate use of liquors in disease is surely unquestionable.—*Little Rock.*

RESULTS IN ARKANSAS

ARKANSAS		Little Rock	Rural	Total
Number of physicians.....		205	2,245	2,450
Questionnaires sent .....		78	562	640
Questionnaires returned .....		39	309	348
Percentage of returns.....		50	55	54
General practitioners .....		28	291	319
Surgeons .....		3	9	12
Specialists .....		8	9	17
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?				
Yes .....	19	131	150	
No .....	20	176	196	
Do you regard beer as a necessary therapeutic agent in the practice of medicine?				
Yes .....	11	62	73	
No .....	27	241	268	
Do you regard wine as a necessary therapeutic agent in the practice of medicine?				
Yes .....	12	79	91	
No .....	25	227	252	
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?				
Yes .....	11	76	87	
No .....	27	220	247	
How many times have you found it advisable to prescribe these liquors in a month?				
Whisky: Number of physicians stating times advisable .....	5	84	89	
Number of physicians stating no times advisable .....	8	116	124	
Beer: Number of physicians stating times advisable .....	..	30	30	
Number of physicians stating no times advisable .....	11	136	147	
Wine: Number of physicians stating times advisable .....	4	39	43	
Number of physicians stating no times advisable .....	8	130	138	
Do you hold a federal permit?				
Yes .....	2	31	33	
No .....	15	144	159	
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?				
Yes (limit not specified).....	4	66	70	
Restricted absolutely .....	10	60	70	
1 to 50 prescriptions.....	3	30	33	
51 to 100 prescriptions .....	2	32	34	
More than 100 prescriptions.....	2	3	5	
Total .....	21	191	212	
No restriction .....	12	106	118	
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?				
Yes .....	30	211	241	
No .....	13	88	101	

CALIFORNIA

Part of California has been under local prohibition for many years. Federal prohibition became effective, July 1, 1919. The legislature, in 1919, adopted an enforcement code, which is at present inoperative pending a referendum vote this year. In local option territory, physicians may prescribe alcoholic liquor to patients actually in need of it as a medicine.

Questionnaires were sent to 2,561 physicians in California, and 1,514, or 59 per cent., were returned.

To the question "Do you regard whisky as a necessary therapeutic agent in the practice of medicine?" the replies were: yes, 749; no, 756, thus distributed: Los Angeles, yes, 188; no, 131; San Francisco, yes, 149; no, 90; Oakland, yes, 26; no, 42; San Diego, yes, 16; no, 19; Long Beach, yes, 12; no, 23; Sacramento, yes, 16; no, 8; Berkeley, yes, 11; no, 20; towns less than 50,000 and rural: yes, 331; no, 423.

To the question "Do you regard beer as a necessary therapeutic agent?" the replies were: yes, 365; no, 1,125. The



total replies from cities of 50,000 or more were: yes, 223; no, 522. The replies from the rest of the state were: yes, 142; no, 603.

To the question "Do you regard wine as a necessary therapeutic agent?" the replies were: yes, 569; no, 920, thus distributed: cities of 50,000 or more: yes, 334; no, 406; remainder of the state: yes, 235; no, 514.

The question "Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?" was answered: yes, 291; no, 1,158.

The number of physicians who reported that they had found it advisable to prescribe liquor was: whisky, 668 advisable;

All physicians should absolutely refuse to prescribe liquors on government blanks and refuse to be government bartenders. In that way the people would soon demand a change in the law.—*Los Angeles*.

It is needless to refer educated, liberal and broad-minded men to an abundance of literature, both sacred and profane, as to the value of the proper use of wine and other alcoholic liquors. To refer the ignorant, arrogant and narrow-minded modern reformer to any authorities would be to cast pearls before swine.—*Sacramento*.

Just have a little more interference with reputable physicians in the practice of their profession and no reputable person will practice medicine. Your questionnaire fills me with indignation.—*San Francisco*.

Although every physician knows that alcohol internally is not a cure for any disease, we all know that certain cases, such as debilitated states from exhausting disease or ravages of increasing age, are aided materially in convalescence, or that the last days of these patients are prolonged or made happier through the use of alcohol.—*San Francisco*.

RESULTS IN CALIFORNIA

CALIFORNIA	Los Angeles	San Francisco	Oakland	San Diego	Long Beach	Sacramento	Berkeley	Total Cities	Rural	Grand Total
Number of physicians.....	1,585	1,312	353	251	136	129	122	3,888	2,878	6,766
Questionnaires sent .....	557	469	127	69	51	51	54	1,378	1,183	2,561
Questionnaires returned .....	320	240	68	35	35	24	31	753	761	1,514
Percentage of returns.....	57	51	54	51	69	47	57	55	64	59
General practitioners .....	216	152	50	25	26	20	28	517	676	1,193
Surgeons .....	52	47	10	6	4	2	3	124	33	157
Specialists .....	52	41	8	4	5	2	..	112	52	164
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?										
Yes.....	188	149	26	16	12	16	11	418	331	749
No.....	131	90	42	19	23	8	20	333	423	756
Do you regard beer as a necessary therapeutic agent in the practice of medicine?										
Yes.....	101	82	13	9	7	7	4	223	142	365
No.....	219	153	54	25	28	17	26	522	603	1,125
Do you regard wine as a necessary therapeutic agent in the practice of medicine?										
Yes.....	148	120	24	14	7	14	7	334	235	569
No.....	169	116	42	20	26	10	23	406	514	920
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?										
Yes.....	75	57	4	8	8	7	3	162	129	291
No.....	231	164	59	26	27	16	28	551	607	1,158
How many times have you found it advisable to prescribe these liquors in a month?										
Whisky: Number of physicians stating times advisable.....	151	147	29	11	10	14	14	376	292	668
Number of physicians stating no times advisable.....	112	55	30	17	25	9	11	259	378	637
Beer: Number of physicians stating times advisable.....	38	34	5	4	5	3	2	91	69	160
Number of physicians stating no times advisable.....	171	132	44	22	30	16	20	435	557	992
Wine: Number of physicians stating times advisable.....	108	85	16	8	7	10	9	243	172	415
Number of physicians stating no times advisable.....	134	95	38	17	28	12	15	339	473	812
Do you hold a federal permit?										
Yes.....	148	157	31	8	7	15	13	379	283	662
No.....	124	46	30	23	21	7	15	266	370	636
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?										
Yes (limit not specified).....	39	36	8	8	4	..	7	102	138	240
Restricted absolutely .....	21	9	10	6	4	1	4	55	91	146
1 to 50 prescriptions.....	33	18	9	1	6	2	3	72	81	153
51 to 100 prescriptions.....	84	64	18	4	10	6	2	188	132	320
More than 100 prescriptions.....	5	4	3	..	1	..	..	13	13	26
Total.....	182	131	48	19	25	9	16	430	455	885
No restriction .....	127	102	17	14	9	12	12	293	266	559
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?										
Yes.....	180	119	42	19	29	8	19	416	459	875
No.....	127	108	19	14	6	15	12	301	259	560

637 not advisable. Beer, 160 advisable; 992 not advisable. Wine, 415 advisable; 812 not advisable.

To the question, "Do you hold a federal permit?" the replies were: yes, 662; no, 636.

To the question whether there should be any limit to the number of prescriptions for alcoholic liquors that a physician should write, 885 replied that there should be, and 559, that there should not. There were 240 who failed to specify the limit; 146 would restrict prescribing absolutely; 153 would limit prescriptions to from 1 to 50 in three months; 320 placed the limit at from 51 to 100 in three months, and 26 placed the limit above 100 in that time.

Opinions on the question whether physicians should be restricted in prescribing alcoholic liquors showed 875 for restrictions and 560 against restrictions.

COMMENTS

I do not believe in alcohol as an aid in medicine or surgery. I am not in favor of prohibition as it now stands and would like to see the bars down for beer and wine.—*Berkeley*.

Prohibition has taken the patriotism out of the majority of American citizens. Nearly every day a boat will come into this harbor with hundreds of bottles of whisky from Mexico or Canada.—*Long Beach*.

I think we would do better to go back to the line that we were on—license restriction, education and self-control.—*Los Angeles*.

I am not in favor of the present prohibition law, or the way in which it is enforced. I believe light wines and beers should be permitted, and that the burden of their use should not be placed on the shoulders of physicians. Even beverages of higher alcoholic content might be sold under government supervision, as is done at British Columbia.—*San Francisco*.

In my state any man who wishes can buy whisky at any time, the amount he can purchase being limited only by the size of his pocketbook. The only one who seems to feel the restrictions of the law is the physician who wishes to prescribe for his patients and who is without a permit to do so.—*Placer County*.

I have never found occasion to prescribe alcohol, but I am opposed to the government telling the medical profession what drugs it can use.—*Riverside County*.

Have never written a prescription for whisky, beer or wine since the prohibition law went into effect, and furthermore, I never will while prohibition is effective. I have, however, advised the use of these as therapeutic agents in several instances, but put it up to the patient or his friends to get it the best way they could.—*Sacramento County*.

I prescribed whisky this year for a fine old man, 84 years of age, with inoperable sarcoma of the face. I told him that he could have anything that would ease him over his death bed, either morphin or whisky, and he used about 2 grains daily of the former and 2 ounces daily of the latter until he died. I am glad he appreciated it. I am a prohibitionist.—*Siskiyou County*.

I am not a prohibitionist, but I have not found it necessary to prescribe alcoholic liquors in the practice of medicine.—*Yuba County*.

Government depots should be established for the dispensing of all alcoholic liquors to the public.—*Plumas County*.



DISTRICT OF COLUMBIA

The District of Columbia is, of course, under federal jurisdiction. War-time prohibition went into effect, Nov. 1, 1917. The Volstead Act is now in force. Alcoholic liquor may be prescribed by a legally qualified physician on a prescription containing a statement that the disease of the patient requires such prescription.

Questionnaires were sent to 444 physicians in the District of Columbia, and 232, or 52 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 149; no, 83.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 83; no, 145.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 106; no, 119.

On the question whether physicians had witnessed unnecessary suffering or death from the enforcement of the prohibition laws, the replies were: yes, 49; no, 170.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 101 had found it advisable to prescribe whisky, and 51 had not found it advisable; 20 had found it advisable to prescribe beer, and 86 had not found it advisable; 66 had found it advisable to prescribe wine, and 66 had not found it advisable.

RESULTS IN DISTRICT OF COLUMBIA

Number of physicians.....	1,689
Questionnaires sent .....	444
Questionnaires returned .....	232
Percentage of returns.....	52
General practitioners .....	187
Surgeons .....	17
Specialists .....	28
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes.....	149
No.....	83
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes.....	83
No.....	145
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes.....	106
No.....	119
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes.....	49
No.....	170
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable....	101
Number of physicians stating no times advisable..	51
Beer: Number of physicians stating times advisable.....	20
Number of physicians stating no times advisable....	86
Wine: Number of physicians stating times advisable.....	66
Number of physicians stating no times advisable....	66
Do you hold a federal permit?	
Yes.....	103
No.....	93
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	49
Restricted absolutely .....	6
1 to 50 prescriptions.....	5
51 to 100 prescriptions.....	33
More than 100 prescriptions.....	4
Total .....	97
No restriction .....	120
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes.....	106
No.....	113

To the question "Do you hold a federal permit?" the replies were: yes, 103; no, 93.

On the question whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 97 stated that they should be restricted, and 120 did not believe such restrictions necessary; 49 answered yes, but did not specify a limit; 6 stated that the number should be restricted to absolutely none; 5 considered that from 1 to 50 prescriptions in three months would be sufficient; 33 considered from 51 to 100 satisfactory, and 4 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 106; no, 113.

COMMENTS

The conscientious, self-respecting and law-abiding physician (and the vast majority of American physicians are in this class) should not be restricted, but there should be some way to prevent those in the other class from being or becoming mere bartenders or agents for liquor makers and dealers or the unfortunates who feel that they must have liquor without limitation.—*Washington*.

It is not possible to insure all but 100 patients against the need of whisky. If the "remedy" is necessary, it would be cruel to keep Patient 101 waiting until the fourth month because of shortage of prescription blanks. In my opinion, physicians have at command medicinal substances superior for medical purposes to whisky, wine and beer.—*Washington*.

I have a very decided conviction that the prescribing of beer, wines and whisky leads to such inevitable abuses as to be wholly undesirable. On the other hand, when a physician conscientiously believes in the value of these bodies for medicinal purposes I do not think he should be prohibited by law from having access to them.—*Washington*.

I wrote three prescriptions for whisky, one for an operative case and two for an old patient 83 years of age and an asthmatic. Then I let my permit lapse and do not intend to renew it. I do not think that a limit should be placed on a physician's right to prescribe. Honest physicians will not abuse the right, and means can be devised to reach the dishonest ones.—*Washington*.

FLORIDA

The state prohibition law went into force, Jan. 1, 1919. Prior to that time a large part of the state had been under local option. The present law permits legally qualified physicians to prescribe not more than 8 ounces of pure alcohol at one time, but only for patients who have been actually examined by the physicians or of whose condition the physician has professional knowledge. Such prescriptions must be filled within two days. They cannot be refilled, nor can any one person have more than one such prescription filled in one day.

Questionnaires were sent to 464 physicians in Florida, and 272, or 59 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Jacksonville, yes, 23; no, 15; Tampa, yes, 6; no, 6. Total for the cities, yes, 29; no, 21; for the rural districts, yes, 103; no, 117; for the state, yes, 132; no, 139.

On the question "Is beer a necessary therapeutic agent?" the vote was: Jacksonville, yes, 18; no, 21; Tampa, yes, 4; no, 8. Total for the cities, yes, 22; no, 29; for the rural districts, yes, 50; no, 163; for the state, yes, 72; no, 192.

On the question "Is wine a necessary therapeutic agent?" the vote was: Jacksonville, yes, 17; no, 21; Tampa, yes, 3; no, 8. Total for the cities, yes, 20; no, 29; for the rural districts, yes, 64; no, 151; for the state, yes, 84; no, 180.

On the question as to the number of times physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 57, no, 197.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 84 had found it advisable to prescribe whisky, and 120 had not found it advisable; 33 had found it advisable to prescribe beer, and 143 had not found it advisable; 34 had found it advisable to prescribe wine, and 138 had not found it advisable.

In Florida, 27 physicians of those replying held federal permits, and 112 did not hold federal permits.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 148 stated that they should be restricted, and 109 did not believe such restrictions necessary; 61 physicians answered yes, but did not specify a limit; 33 stated that the number should be limited to absolutely none; 20 considered from 1 to 50 prescriptions in three months sufficient; 28 physicians considered from 51 to 100 satisfactory, and 6 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 165; no, 94.

COMMENTS

The enforcement of the prohibition law is a perfect farce in Florida. All the doctors in the state would not prescribe as much whisky or wine in twelve months in the legitimate practice of medicine as is sold and used by the "four hundred and toughs" of any East Coast city of 10,000 people in one day.—*Cocoa*.

Personally, I am a teetotaler. I am also opposed to the use of alcoholic liquors as beverages, especially under conditions prevailing under the



open saloon. I do not prescribe liquors by written prescription in practice, as state law forbids prescribing or dispensing of alcoholic liquors. But in the few cases in which I believe whisky or wine to be of benefit I simply mention the fact to some member of the family, the kind wanted and the amount, and leave verbal directions as to administration. Within twenty-four hours I find patient on what was recommended. I do not ask where it came from.—*Marion County.*

There is an abundance of unlawful whisky here, and I find it easy to get. Therefore I haven't made any attempt to find out just what the laws of this state are regarding whisky and the practice of medicine.—*Jackson County.*

Prohibition has never been successfully carried out in this state. Therefore I have been able at all times to buy any quantity or quality of whisky or wines at about four times the old price.—*Fort Pierce.*

I have practiced for a good many years, but have written only one prescription for whisky and none for beer or wine, because any one could go and buy before prohibition. But I have case after case of old people especially that need whisky, wine and beer as the case may be, but cannot get it.—*St. Cloud.*

My personal opinion is that prohibition so far as the medical profession is concerned should be on the same basis as the Harrison Narcotic Law.—*Jacksonville.*

On the question "Is wine a necessary therapeutic agent?" the vote was: Louisville, yes, 33; no, 40; Covington, yes, 3; no, 9. Total for the cities, yes, 36; no, 49; for the rural districts, yes, 109; no, 326; for the state, yes, 145; no, 375.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 109; no, 415.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 172 had found it advisable to prescribe whisky, and 270 had not found it advisable; 37 had found it advisable to prescribe beer, and 391 had not found it advisable; 54 had found it advisable to prescribe wine, and 374 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 141; no, 325.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors,

RESULTS IN FLORIDA

FLORIDA	Jacksonville	Tampa	Total Cities	Rural	Grand Total
Number of physicians.....	172	75	247	1,034	1,281
Questionnaires sent .....	73	31	104	360	464
Questionnaires returned .....	39	12	51	221	272
Percentage of returns.....	53	39	49	61	59
General practitioners .....	31	11	42	207	249
Surgeons .....	7	1	8	10	18
Specialists .....	1	..	1	4	5
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?					
Yes.....	23	6	29	103	132
No.....	15	6	21	117	138
Do you regard beer as a necessary therapeutic agent in the practice of medicine?					
Yes.....	18	4	22	50	72
No.....	21	8	29	163	192
Do you regard wine as a necessary therapeutic agent in the practice of medicine?					
Yes.....	17	3	20	64	84
No.....	21	8	29	151	180
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?					
Yes.....	11	3	14	43	57
No.....	27	2	35	162	197
How many times have you found it advisable to prescribe these liquors in a month?					
Whisky: Number of physicians stating times advisable.....	22	2	24	60	84
Number of physicians stating no times advisable....	10	5	15	105	120
Beer: Number of physicians stating times advisable.....	5	2	7	26	33
Number of physicians stating no times advisable.....	16	5	21	122	143
Wine: Number of physicians stating times advisable.....	8	..	8	26	34
Number of physicians stating no times advisable.....	14	5	19	119	138
Do you hold a federal permit?					
Yes.....	8	2	10	17	27
No.....	10	4	14	98	112
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?					
Yes (limit not specified).....	4	2	6	55	61
Restricted absolutely .....	4	..	4	29	33
1 to 50 prescriptions.....	3	2	5	15	20
51 to 100 prescriptions.....	5	2	7	21	28
More than 100 prescriptions.....	2	..	2	4	6
Total.....	18	6	24	124	148
No restriction .....	16	5	21	88	109
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?					
Yes.....	21	8	29	136	165
No.....	16	2	18	76	94

KENTUCKY

Prohibition became effective in Kentucky, July 1, 1919. The present provisions are practically those of the Volstead Act. Physicians may prescribe not more than 1 pint of alcoholic liquors in ten days for the same patient. A duplicate of the prescription must be kept on file for two years. The prescription must show the name and address of the patient, the druggist, the date, the quantity of liquor, and a statement by the physician that he is in personal attendance on the patient and that the liquor prescribed is proper treatment for the ailment from which the patient is suffering.

Questionnaires were sent to 1,034 physicians in Kentucky, and 544, or 53 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Louisville, yes, 48; no, 28; Covington, yes, 4; no, 9. Total for the cities, yes, 52; no, 37; for the rural districts, yes, 200; no, 251; for the state, yes, 252, no, 288.

On the question "Is beer a necessary therapeutic agent?" the vote was: Louisville, yes, 25; no, 50; Covington, yes, 2; no, 10. Total for the cities, yes, 27; no, 60; for the rural districts, yes, 104; no, 345; for the state, yes, 131; no, 405.

309 stated that they should be restricted, and 214 did not believe such restrictions necessary; 52 physicians answered yes, but did not specify a limit; 97 stated that the number should be limited to absolutely none; 70 considered from 1 to 50 prescriptions in three months sufficient; 86 considered from 51 to 100 satisfactory, and 4 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 328; no, 193.

COMMENTS

I know a few physicians who hold permits to prescribe whisky. Without a single exception, they use whisky themselves as a beverage. And I never knew one of these physicians to prescribe whisky for a sick man or woman. Those who got the prescriptions were very well indeed and wanted to feel still better. I feel that whisky is the best thing in the world to get drunk on, and the worst thing in the world to practice medicine with.—*Berea.*

Just so long as the Volstead law makes a refined grog shop out of a physician's office, then there should be no limit. The quicker the whisky is consumed or otherwise disposed of, the sooner the physician will regain his self respect and realize that whisky was never a medicine.—*Lexington.*

In our county society several months ago we undertook to have reported the number of alcoholic prescriptions written by physicians of our



county each month, the report to be read at each meeting of the society. We found that the county clerk had instructions not to reveal this information to any one. We should have investigated his right to withhold this information, but so far we have neglected to do this.—*Hopkinsville.*

For years I prescribed alcoholics, and finally discontinued to do so after finding they were only a variety of dope—that fooled the patient as well as myself—and did not improve or remove the condition for which prescribed. I am opposed to the physician being the “eye-winker” for the saloon. I believe the government should take over all the liquor, and establish dispensaries where a person properly registered can get his pint every ten days if he so wishes.—*Covington.*

The Harrison Narcotic Law does not undertake to limit the amount of morphin or cocain a man uses; it simply forces him to go on record; and I feel that in all fairness to the medical profession the same condition should hold in regard to alcoholic beverages.—*Louisville.*

Heretofore I have always relied on the assistance of alcohol in some form, most usually brandy, in the treatment of the acute infections, such as pneumonia, typhoid, influenza, cholera infantum and septicemia, and a great boon it was in the industrial accidents that we have here in great numbers, which are always attended with shock; for you never

LOUISIANA

Prior to the enforcement of the Volstead Act, most of the state was under local prohibition. There is no state law regulating the prescribing of alcoholic liquors by physicians.

Questionnaires were sent to 754 physicians in Louisiana, and 381, or 51 per cent., were returned.

On the question “Is whisky a necessary therapeutic agent?” the vote was: New Orleans, yes, 58; no, 38; for the rural districts, yes, 141; no, 140; total for the state, yes, 199; no, 178.

On the question “Is beer a necessary therapeutic agent?” the vote was: New Orleans, yes, 30; no, 66; for the rural districts, yes, 79; no, 200; for the state, yes, 109; no, 266.

On the question “Is wine a necessary therapeutic agent?” the vote was: New Orleans, yes, 43; no, 55; for the rural districts, yes, 103; no, 176; for the state, yes, 146; no, 231.

RESULTS IN KENTUCKY

KENTUCKY	Louisville	Covington	Total Cities	Rural	Grand Total
Number of physicians.....	618	85	703	2,620	3,323
Questionnaires sent .....	152	29	181	853	1,034
Questionnaires returned .....	76	15	91	453	544
Percentage of returns.....	50	52	50	53	53
General practitioners .....	52	12	64	428	492
Surgeons .....	8	1	9	9	18
Specialists .....	16	2	18	16	34
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?					
Yes.....	48	4	52	200	252
No.....	28	9	37	251	288
Do you regard beer as a necessary therapeutic agent in the practice of medicine?					
Yes.....	25	2	27	104	131
No.....	50	10	60	345	405
Do you regard wine as a necessary therapeutic agent in the practice of medicine?					
Yes.....	33	3	36	109	145
No.....	40	9	49	326	375
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?					
Yes.....	19	1	20	89	109
No.....	53	13	66	349	415
How many times have you found it advisable to prescribe these liquors in a month?					
Whisky: Number of physicians stating times advisable.....	36	2	38	134	172
Number of physicians stating no times advisable.....	20	7	27	243	270
Beer: Number of physicians stating times advisable.....	6	..	6	31	37
Number of physicians stating no times advisable.....	48	8	56	335	391
Wine: Number of physicians stating times advisable.....	16	..	16	38	54
Number of physicians stating no times advisable.....	38	8	46	328	374
Do you hold a federal permit?					
Yes.....	41	2	43	98	141
No.....	23	10	33	292	325
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?					
Yes (limit not specified).....	4	2	6	46	52
Restricted absolutely .....	6	4	10	87	97
1 to 50 prescriptions.....	11	1	12	58	70
51 to 100 prescriptions.....	12	..	12	74	86
More than 100 prescriptions.....	1	..	1	3	4
Total.....	34	7	41	268	309
No restriction .....	38	8	46	168	214
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?					
Yes.....	38	8	46	282	328
No.....	33	6	39	154	193

see a man come out of the mines unless he is in a state of shock, and I defy any authority to deny the fact that for the present treatment of shock he can recommend nothing better than hot brandy. These are a few instances in which they have taken from the body of medical men one of the most valuable weapons of defense that existed in the combating of disease and emergencies when prompt and efficacious action is needed.—*Bell County.*

I believe if physicians are allowed to prescribe alcohol as a remedy they should have the power to prescribe it as they do any other remedy. If they abuse this privilege it should be removed entirely from them by the constituted authorities.—*Louisville.*

I think there are many instances in which whisky is a useful therapeutic agent, but few a necessary one. There are often cases to be encountered in which a little whisky would be beneficial; but our laws are so prohibitive that we get along without it. So I would not say it is a necessity.—*Adair County.*

I have practiced medicine forty-two years. I know that pure whisky or brandy serves a good purpose in some cases. Some physicians claim there is no medical property in alcohol in any disease, and will prescribe coal tar derivatives in the sinking stages of grip and pneumonia.—*Hart County.*

I think the profession should take the stand that if this law is to be kept in force it should be enforced and not used simply as a local political asset. If it cannot be enforced, then repeal it. My personal opinion is that at the present time prohibition is impossible. Allow the sale of beer and wine; prohibit whisky within certain definite limits and enforce the law.—*Louisville.*

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 69; no, 298.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 157 had found it advisable to prescribe whisky, and 159 had not found it advisable; 33 had found it advisable to prescribe beer, and 267 had not found it advisable; 78 had found it advisable to prescribe wine, and 226 had not found it advisable.

To the question “Do you hold a federal permit?” the replies were: yes, 167; no, 158.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 193 stated that they should be restricted, and 180 did not believe such restrictions necessary; 56 physicians answered yes, but did not specify a limit; 28 stated that the number should be restricted to absolutely none; 33 considered from 1 to 50 prescriptions in three months sufficient; 68 considered from 51 to 100 satisfactory, and 8 physicians considered 100 insufficient.



On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 175; no, 190.

### RESULTS IN LOUISIANA

LOUISIANA	New Orleans	Rural	Grand Total
Number of physicians.....	646	1,355	2,001
Questionnaires sent .....	238	516	754
Questionnaires returned .....	98	283	381
Percentage of returns.....	41	55	51
General practitioners .....	59	265	324
Surgeons .....	15	6	21
Specialists .....	24	12	36
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes .....	58	141	199
No .....	33	140	173
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes .....	30	79	109
No .....	66	200	266
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes .....	43	103	146
No .....	55	176	231
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes .....	14	55	69
No .....	78	220	298
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable .....	50	107	157
Number of physicians stating no times advisable .....	32	127	159
Beer: Number of physicians stating times advisable .....	5	28	33
Number of physicians stating no times advisable .....	69	198	267
Wine: Number of physicians stating times advisable .....	27	51	78
Number of physicians stating no times advisable .....	50	176	226
Do you hold a federal permit?			
Yes .....	42	125	167
No .....	39	119	158
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	13	43	56
Restricted absolutely .....	4	24	28
1 to 50 prescriptions.....	6	27	33
51 to 100 prescriptions.....	21	47	68
More than 100 prescriptions.....	1	7	8
Total .....	45	148	193
No restriction .....	50	130	180
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes .....	33	142	175
No .....	57	133	190

### COMMENTS

The above does not interest the New Orleans medical profession because one can be supplied very cheaply with any brand of liquor at a very low cost by the bootlegger and therefore he need not wait on the medical man to fill out the blanks.—*New Orleans.*

Restrictions should be the same as those of the Harrison Narcotic Law. Physicians and surgeons are very careful not to violate it, and I am sure that they would be if alcohol were under the same law. I do not use it personally, but would be glad to use any therapeutic agent for welfare of patients in sickness (not for beverage, understand).—*Sabine County.*

The druggist should fill prescriptions, but the price of liquors should be regulated by the government and overcharge be heavily penalized.—*Alexandria.*

### MARYLAND

The only prohibition law in force in Maryland prior to the passage of the Volstead Act was a local option law. There are no state restrictions on the prescribing of alcoholic liquors for physicians.

Questionnaires were sent to 920 physicians in Maryland, and 500, or 54 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Baltimore, yes, 168; no, 98; total for the rural districts, yes, 124; no, 92; total for the state, yes, 310; no, 190.

On the question "Is beer a necessary therapeutic agent?" the vote was: Baltimore, yes, 85; no, 176; for the rural districts, yes, 69; no, 158; for the state, yes, 154; no, 334.

On the question "Is wine a necessary therapeutic agent?" the vote was: Baltimore, yes, 123; no, 142; for the rural districts, yes, 93; no, 134; for the state, yes, 216; no, 276.

On the question whether physicians had witnessed unnecessary suffering or death from the enforcement of the prohibition laws, the replies were: yes, 119; no, 360.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 227 had found it advisable to prescribe whisky, and 139 had not found it advisable; 47 had found it advisable to prescribe beer, and 233 had not found it advisable; 101 had found it advisable to prescribe wine, and 205 physicians had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 193; no, 242.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 195 stated that they should be restricted, and 285 did not believe such restrictions necessary; 71 physicians answered yes, but did not specify a limit; 26 stated that the number should be limited to absolutely none; 18 considered from 1 to 50 prescriptions in three months sufficient; 75 considered from 51 to 100 satisfactory, and 5 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 188; no, 289.

### RESULTS IN MARYLAND

MARYLAND	Baltimore	Rural	Grand Total
Number of physicians.....	1,421	943	2,364
Questionnaires sent .....	350	570	920
Questionnaires returned .....	266	234	500
Percentage of returns.....	76	41	54
General practitioners .....	192	215	407
Surgeons .....	42	6	48
Specialists .....	32	13	45
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes .....	168	142	310
No .....	98	92	190
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes .....	85	69	154
No .....	176	158	334
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes .....	123	93	216
No .....	142	134	276
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes .....	65	54	119
No .....	193	167	360
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable .....	128	99	227
Number of physicians stating no times advisable .....	70	69	139
Beer: Number of physicians stating times advisable .....	33	14	47
Number of physicians stating no times advisable .....	121	112	233
Wine: Number of physicians stating times advisable .....	66	35	101
Number of physicians stating no times advisable .....	104	101	205
Do you hold a federal permit?			
Yes .....	113	80	193
No .....	114	128	242
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	47	24	71
Restricted absolutely .....	3	23	26
1 to 50 prescriptions.....	3	15	18
51 to 100 prescriptions.....	39	36	75
More than 100 prescriptions.....	3	2	5
Total .....	95	100	195
No restriction .....	159	126	285
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes .....	90	98	188
No .....	158	131	289

### COMMENTS

Personally I am a "wet," never having voted or sympathized with the "dry" movement; but I protest the medical profession being made brokers for breweries and distilleries.—*Cumberland.*

I think that a law passed to limit the amount of the fee paid the physician for prescriptions to a very nominal amount, or even to prohibit any fee chargeable, might help to regulate and control the proper issuing of prescriptions.—*Anne Arundel County.*

While in my opinion alcoholic liquors are never indicated in the practice of medicine, and in nearly all cases are contraindicated, yet I



realize that many reputable physicians hold contrary views. For this reason I do not think that such men should be in any way handicapped in prescribing anything that in their honest judgment is for the best interest of their patient. On the other hand, every limitation should be placed upon those physicians who are commercializing this right.—*Elkton.*

Necessary regulations should be formulated which will make possible the disciplining and prosecution of physicians who abuse the privilege, just as we have in the Harrison Narcotic Law. I am not registered because of the necessary red tape in obtaining a certificate, the details required by the government in connection with writing prescriptions and the feeling I have that as soon as one does register one becomes more or less of an object of suspicion—a potential law breaker.—*Baltimore.*

What right has the government to say that the men who see 100 patients a day should not write more than 100 prescriptions every three months when it allows the man who sees five or seven patients a day to prescribe the same amount? Also, how far does a pint of whisky go in ten days in a pneumonia case? In some severe cases it lasts but one day, and you have to fill in with uncertain bootleg whisky, even if you are using digitalis and strychnin.—*Baltimore.*

### MINNESOTA

Federal prohibition became effective in Minnesota, July 1, 1919. The present law permits legally qualified physicians to prescribe alcoholic liquors, not to exceed 1 pint in ten

67; no, 222; for the rural districts, yes, 109; no, 404; for the state, yes, 176; no, 626.

On the question "Is wine a necessary therapeutic agent?" the vote was: Minneapolis, yes, 36; no, 143; St. Paul, yes, 24; no, 54; Duluth, yes, 7; no, 22. Total for the cities, yes, 67; no, 219; for the rural districts, yes, 107; no, 399; for the state, yes, 174; no, 618.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 115; no, 679.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 283 had found it advisable to prescribe whisky, and 425 had not found it advisable; 59 had found it advisable to prescribe beer, and 571 had not found it advisable; 80 had found it advisable to prescribe wine, and 552 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 273; no, 418.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 517 stated that they should be restricted, and 271 did not

### RESULTS IN MINNESOTA

MINNESOTA	Minneapolis	St. Paul	Duluth	Total Cities	Rural	Grand Total
Number of physicians.....	608	370	101	1,079	1,549	2,628
Questionnaires sent .....	298	187	51	536	718	1,254
Questionnaires returned .....	184	84	31	299	521	820
Percentage of returns.....	62	45	61	56	73	65
General practitioners .....	113	51	15	179	469	648
Surgeons .....	41	16	12	69	25	94
Specialists .....	30	17	4	51	27	78
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?						
Yes.....	71	42	11	124	208	332
No.....	108	41	19	168	306	474
Do you regard beer as a necessary therapeutic agent in the practice of medicine?						
Yes.....	35	25	7	67	109	176
No.....	146	54	22	222	404	626
Do you regard wine as a necessary therapeutic agent in the practice of medicine?						
Yes.....	36	24	7	67	107	174
No.....	143	54	22	219	399	618
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?						
Yes.....	17	16	3	36	79	115
No.....	161	63	27	251	428	679
How many times have you found it advisable to prescribe these liquors in a month?						
Whisky: Number of physicians stating times advisable.....	69	36	12	117	166	283
Number of physicians stating no times advisable....	85	36	17	138	287	425
Beer: Number of physicians stating times advisable.....	5	7	5	17	42	59
Number of physicians stating no times advisable.....	128	50	20	198	373	571
Wine: Number of physicians stating times advisable.....	13	12	3	28	52	80
Number of physicians stating no times advisable.....	122	46	22	190	362	552
Do you hold a federal permit?						
Yes.....	76	41	12	129	144	273
No.....	78	34	15	127	291	418
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?						
Yes (limit not specified).....	28	14	4	46	50	96
Restricted absolutely .....	21	8	3	32	83	115
1 to 50 prescriptions.....	34	11	7	52	68	120
51 to 100 prescriptions.....	56	23	6	85	90	175
More than 100 prescriptions.....	3	..	1	4	7	11
Total.....	142	56	21	219	298	517
No restriction .....	37	26	10	73	198	271
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?						
Yes.....	137	53	22	212	317	529
No.....	38	22	7	67	175	242

days for the same patient. Prescriptions must be written in ink, printed or typewritten, and must contain the name and the address of the patient, the kind and the quantity of the liquor, the directions for its use, and a statement that the illness for which the liquor is prescribed requires its use. Prescriptions must be signed in ink, and they cannot be refilled.

Questionnaires were sent to 1,254 physicians in Minnesota, and 820, or 65 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Minneapolis, yes, 71, no, 108; St. Paul, yes, 42; no, 41; Duluth, yes, 11; no, 19. Total for the cities, yes, 124; no, 168; for the rural districts, yes, 208; no, 306; for the state, yes, 332; no, 474.

On the question "Is beer a necessary therapeutic agent?" the vote was: Minneapolis, yes, 35; no, 146; St. Paul, yes, 25; no, 54; Duluth, yes, 7; no, 22. Total for the cities, yes,

believe such restrictions necessary; 96 answered yes, but did not specify a limit; 115 stated that the number should be limited to absolutely none; 120 considered from 1 to 50 prescriptions in three months sufficient; 175 considered from 51 to 100 satisfactory, and 11 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 529; no, 242.

### COMMENTS

As far as I can see there is absolutely no enforcement of prohibition laws in this part of the country. And if the present drinking of these poisonous home-made liquors keeps up, the evils of former saloon days have been magnified a hundred times, not only from the terrible effects of the drinking of these "home brews" but from the spirit of law breaking and "crooked" deals which it engenders. In my opinion the government should either enforce the law or repeal it.—*Stearns County.*

The prescribing of whisky, beer and wine should be entirely forbidden. The prescribing of alcohol is limited to "plain" ethyl alcohol in com-



bination with other ingredients which would make it unsuitable for beverage purposes.—*Fillmore County.*

Alcohol and some form of alcoholic preparations are absolutely indispensable in the efficient practice of medicine. The exact form of preparation is immaterial so long as we can have the alcoholic content pure and effective. I will add that I am one of the so-called prohibition cranks, but even a crank must have its limitations.—*Lac Qui Parle County.*

Why should a poor debilitated old patient who cannot sleep well, with failing energy, who believes he derives benefit from a tablespoonful of hot brandy at night be forced to pay \$3.50 for a pint of whisky formerly sold for 50 cents—I mean \$3.50 for the whisky without any prescription fee. Is there anything right about this?—*Fillmore County.*

In our community, conditions are a great deal worse than when we had local option. I am constantly called to treat individuals suffering from the effect of what is commonly known as "moonshine." Our present law does not prohibit. It fosters a disrespect for law. The doctors should limit their prescribing of alcohol to strictly legitimate use.—*Rock County.*

Practicing medicine in the center of an agricultural county, 15 miles from the nearest doctor, one small rural drugstore is vastly different from that of "clinic" work or work in a sanatorium. I have trouble

MISSOURI

Federal prohibition became effective in Missouri, July 1, 1919. The state law, passed the same year and amended in 1921, permits physicians to prescribe alcoholic or intoxicating liquors. Permits are issued by the county judges. Physicians must make a physical examination of each patient, and the prescription must show the name of the patient, the disease for which the liquor is prescribed, and the date on which it is issued. It must also contain a statement from the physician that the liquor prescribed is a necessary remedy.

Questionnaires were sent to 1,947 physicians in Missouri, and 1,098, or 56 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: St. Louis, yes, 180; no, 99; Kansas City, yes, 109; no, 70; St. Joseph, yes, 11; no, 16. Total for the cities, yes, 300; no, 185; for the rural districts, yes, 281; no, 324; for the state, yes, 581; no, 509.

RESULTS IN MISSOURI

MISSOURI	St. Louis	Kansas City	St. Joseph	Total Cities	Rural	Grand Total
Number of physicians.....	1,754	919	182	2,855	3,066	5,921
Questionnaires sent .....	531	328	60	919	1,028	1,947
Questionnaires returned .....	280	180	27	487	611	1,098
Percentage of returns.....	53	55	45	53	59	56
General practitioners .....	192	119	22	333	570	903
Surgeons .....	46	34	2	82	13	95
Specialists .....	42	27	3	72	28	100
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?						
Yes.....	180	109	11	300	281	581
No.....	99	70	16	185	324	509
Do you regard beer as a necessary therapeutic agent in the practice of medicine?						
Yes.....	96	60	6	162	127	289
No.....	183	116	20	319	474	793
Do you regard wine as a necessary therapeutic agent in the practice of medicine?						
Yes.....	142	87	8	237	167	404
No.....	132	92	18	242	434	676
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?						
Yes.....	66	39	6	111	133	244
No.....	201	132	19	352	456	808
How many times have you found it advisable to prescribe these liquors in a month?						
Whisky: Number of physicians stating times advisable.....	124	88	8	220	186	406
Number of physicians stating no times advisable.....	89	59	14	162	311	473
Beer: Number of physicians stating times advisable.....	34	22	2	58	43	101
Number of physicians stating no times advisable.....	142	89	18	249	421	670
Wine: Number of physicians stating times advisable.....	70	61	6	137	66	203
Number of physicians stating no times advisable.....	120	74	15	209	402	611
Do you hold a federal permit?						
Yes.....	120	76	5	201	142	343
No.....	124	80	18	222	388	610
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?						
Yes (limit not specified).....	42	31	2	75	91	166
Restricted absolutely .....	7	14	4	25	96	121
1 to 50 prescriptions.....	24	14	4	42	55	97
51 to 100 prescriptions.....	42	35	6	83	95	178
More than 100 prescriptions.....	8	6	..	14	9	23
Total.....	123	100	16	239	346	585
No restriction .....	144	74	9	227	251	478
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?						
Yes.....	122	108	18	248	364	612
No.....	140	62	8	210	229	439

getting alcohol for surgical emergency work. I need whisky in pneumonia, especially when I can have no nurse to attend my patient. God forbid the return of the licensed saloon. But my prayers would be equally fervent for a return of sanity regarding the use of alcoholics by our profession as a whole.—*Nicollet County.*

Whisky and alcohol should be made and distributed by the government. Light wines and beer should not be restricted or taxed. I don't see how a doctor can degrade himself by becoming a prescription pedler—100 is more than I have ever written in twenty years' practice. The calls I have had for them were not from the sick, but from the thirsty. The doctor who wants more than the hundred is at heart a barkceper.—*Redwood County.*

As we have federal control, let the federal government have all the responsibility, even to the sale for medicinal use, by establishing one or more federal stores in each state where prescriptions may be sent. The one in control should easily be able after a little experience to determine which doctors are prescribing for gain only.—*Beltrami County.*

I believe in the appointment of government venders and think that the prescribing of liquors by the profession lowers the standards more than most physicians realize.—*Minneapolis.*

I believe that physicians should be allowed to prescribe pure alcohol the same as they are allowed to prescribe narcotic drugs, but under proper regulations and proper inspection to be sure that the alcohol is being used as a therapeutic agent, combined or uncombined with other agents, and not misused to satisfy a habit or as a beverage.—*Minneapolis.*

On the question "Is beer a necessary therapeutic agent?" the vote was: St. Louis, yes, 96; no, 183; Kansas City, yes, 60; no, 116; St. Joseph, yes, 6; no, 20. Total for the cities, yes, 162; no, 319; for the rural districts, yes, 127; no, 474; for the state, yes, 289; no, 793.

On the question "Is wine a necessary therapeutic agent?" the vote was: St. Louis, yes, 142; no, 132; Kansas City, yes, 87; no, 92; St. Joseph, yes, 8; no, 18. Total for the cities, yes, 237; no, 242; for the rural districts, yes, 167; no, 434; for the state, yes, 404; no, 676.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of prohibition laws, the replies were: yes, 244; no, 808.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 406 had found it advisable to prescribe whisky, and 473 had not found it advisable; 101 had found it advisable to prescribe beer, and 670 had not found it advisable; 203 had found it advisable to prescribe wine, and 611 had not found it advisable.



To the question "Do you hold a federal permit?" the replies were: yes, 343; no, 610.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 585 stated that they should be restricted, and 478 did not believe such restrictions necessary; 166 answered yes, but did not specify a limit; 121 stated that the number should be limited to absolutely none; 97 considered from 1 to 50 prescriptions in three months sufficient; 178 considered from 51 to 100 satisfactory, and 23 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 612; no, 439.

COMMENTS

Delegating the power of dispensing alcoholics to the medical profession is an imposition on the profession. By the financial benefits possible, it is a temptation to young men who are starting out in the profession to do wrong. In the eyes of the public, the whole medical profession has gone into bootlegging. If the thing keeps on, I favor the formation of a nonalcoholic branch of the profession limited in membership to those who do not take out permits; and instead of a membership certificate let us have a sign to hang in the outer office, "No Bootlegging Done Here."—*Kansas City*.

In thirty years of general practice I have frequently ordered alcoholic stimulants in the form of whisky, beer and wine with benefit to my patients. Prior to the enforcement of prohibition I most frequently ordered beer and wine, believing them to be the best form for the administration of alcohol in most instances. Now, owing to the inability to obtain beer and wine, I am compelled to order whisky more often than in preprohibition days.—*St. Louis*.

In a period of about forty years I have scarcely used alcohol as a medicine. Three years ago, when influenza was raging, not a drop of alcohol was prescribed excepting when it appeared in combination, as in tinctures. My percentage of deaths was less than 4. It depends on the way in which physicians have been educated in this matter. The doctor who is a boozier and likes it himself is sure to think it necessary as a medicine. In my experience, there is scarcely any exceptions to this rule. Nearly fifty years since I began to study as a physician and druggist, and I know these things from observation.—*Lathrop*.

NEVADA

The state law became effective, Dec. 16, 1918. Reputable physicians may prescribe grain alcohol only for patients whom they have actually examined. Prescriptions must show the amount of alcohol, the disease for which it is prescribed, the name of the patient, and the number of such prescriptions issued for the same patient during the preceding year, together with a signed statement by the physician that he has made a personal examination of the patient, knows him to be of temperate habits, not addicted to the use of narcotic drugs, and that the alcohol prescribed is absolutely necessary as a medicine.

Questionnaires were sent to 75 physicians in Nevada, and 51, or 68 per cent. were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 30; no, 19.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 14; no, 35.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 21; no, 29.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 17; no, 31.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 11 had found it advisable to prescribe whisky, and 22 had not found it advisable; 5 had found it advisable to prescribe beer, and 25 had not found it advisable; 8 had found it advisable to prescribe wine, and 25 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 1; no, 10.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 22 stated that they should be restricted, and 25 did not believe such restrictions necessary; 4 physicians answered yes, but did not specify a limit; 7 stated that the number should be limited to absolutely none; 3 considered from 1 to 50 prescriptions in three months sufficient; 8 considered from 51 to 100 satisfactory. None of the physicians replying considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 28; no, 19.

COMMENTS

Prohibition, as enforced, I consider to be a useless experiment. Under previous conditions poor enough liquors were sold at times, but now 95 per cent. of the moonshine sold is nothing but a rank poison. I have seen many cases in which only one or two glasses rendered the patient in a dangerous and at times a comatose condition.—*Ely*.

I believe that physicians should be allowed to prescribe alcoholic liquors, under similar regulations to those which now control the prescribing of narcotics.—*Fallon*.

It seems to me that there is altogether too much of this "telling the doctor what to do," thus robbing him of his constitutional right to practice medicine in a way which he may consider proper and right. From an economic standpoint I do not favor the saloon and general consumption of alcohol, but I do believe that every physician should be allowed to prescribe or administer alcohol, and that without question, if he deems it a therapeutic necessity.—*Reno*.

RESULTS IN NEVADA

Number of physicians.....	147
Questionnaires sent .....	75
Questionnaires returned .....	51
Percentage of returns.....	68
General practitioners .....	41
Surgeons .....	7
Specialists .....	3
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	30
No .....	19
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	14
No .....	35
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	21
No .....	29
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	17
No .....	31
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating time advisable.....	11
Number of physicians stating no times advisable...	22
Beer: Number of physicians stating times advisable.....	5
Number of physicians stating no times advisable....	25
Wine: Number of physicians stating times advisable.....	8
Number of physicians stating no times advisable....	25
Do you hold a federal permit?	
Yes .....	1
No .....	10
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	4
Restricted absolutely .....	7
1 to 50 prescriptions.....	3
51 to 100 prescriptions.....	8
More than 100 prescriptions.....	0
Total .....	22
No restriction .....	25
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	28
No .....	19

NEW HAMPSHIRE

The state prohibition law became effective, May 1, 1918. Legally qualified physicians may prescribe alcoholic liquors. The prescription must give the name of the patient and the kind of liquor, and can be written only after a diagnosis of the disease, the physician exercising the same professional skill and care as in prescribing any other poisonous or habit-forming drug.

Questionnaires were sent to 300 physicians in New Hampshire, and 186, or 62 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Manchester, yes, 18; no, 5; for the rural districts, yes, 99; no, 63; for the state, yes, 117; no, 68.

On the question "Is beer a necessary therapeutic agent?" the vote was: Manchester, yes, 6; no, 15; for the rural districts, yes, 49; no, 113; for the state, yes, 55; no, 128.

On the question "Is wine a necessary therapeutic agent?" the vote was: Manchester, yes, 10; no, 11; for the rural districts, yes, 59; no, 101; for the state, yes, 69; no, 112.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 57; no, 121.



On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 70 had found it advisable to prescribe whisky, and 62 had not found it advisable; 12 had found it advisable to prescribe beer, and 93 had not found it advisable; 25 had found it advisable to prescribe wine, and 85 had not found it advisable.

RESULTS IN NEW HAMPSHIRE

NEW HAMPSHIRE	Man- chester	Rural	Total
Number of physicians.....	96	545	641
Questionnaires sent .....	38	262	300
Questionnaires returned .....	23	163	186
Percentage of returns.....	61	62	62
General practitioners .....	19	144	163
Surgeons .....	3	7	10
Specialists .....	1	12	13
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes .....	18	99	117
No .....	5	63	68
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes .....	6	49	55
No .....	15	113	128
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes .....	10	59	69
No .....	11	101	112
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes .....	5	52	57
No .....	17	104	121
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable .....	14	56	70
Number of physicians stating no times advisable .....	5	57	62
Beer: Number of physicians stating times advisable .....	2	10	12
Number of physicians stating no times advisable .....	11	82	93
Wine: Number of physicians stating times advisable .....	4	21	25
Number of physicians stating no times advisable .....	9	76	85
Do you hold a federal permit?			
Yes .....	17	44	61
No .....	4	96	100
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	4	30	34
Restricted absolutely .....	..	4	4
1 to 50 prescriptions.....	..	7	7
51 to 100 prescriptions.....	2	19	21
More than 100 prescriptions.....	0	0	0
Total .....	6	60	66
No restriction .....	15	96	111
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes .....	6	70	76
No .....	14	84	98

To the question "Do you hold a federal permit?" the replies were: yes, 61; no, 100.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 66 stated that they should be restricted, and 111 did not believe such restrictions necessary; 34 physicians answered yes, but did not specify a limit; 4 stated that the number should be limited to absolutely none; 7 considered from 1 to 50 prescriptions in three months sufficient; 21 considered from 51 to 100 satisfactory, and no physician of those replying considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 76; no, 98.

COMMENTS

Beer and wine have no legitimate place in medicine, and prohibition should be absolute. Whisky has a small but valuable place, and should be allowed. An arbitrary limitation of 100 prescriptions in three months has the defect that most men do not need half this number, whereas some may legitimately use double that amount.—*Grafton County.*

The license is so high in New Hampshire that the druggists in small towns do not have them, and that means travel, time and expense. The bootlegger prospers and we have the meanest condition that could possibly be brought about.—*Plymouth.*

Although personally I do not consider alcohol a necessary therapeutic agent, I realize that many men honestly differ with me in this matter. Therefore I am not in favor of restricting physicians in the use of alcohol for medicinal purposes at the present time. I thoroughly believe

that time and education will prove that alcohol is not only unnecessary but, in most cases of disease, actually harmful.—*Portsmouth.*

The principle of dictating in the least as to what a physician should give his patient is repugnant to me. I am so disgusted I do not have a permit for opiates or liquor. I refuse to be nagged by any inspector.—*Carroll County.*

In this county there is no place to get prescriptions filled legally because druggists will not take out a license. My prescriptions cannot be filled without going to Concord, Manchester or Nashua, 60 or 70 miles. This is a hardship. But it cannot be charged to the prohibition law entirely. It is a local condition I know of no way to remedy. I think a plan similar to the Harrison law should be adopted for all liquors.—*Cheshire County.*

NEW MEXICO

Federal prohibition became effective, July 1, 1919. Since that time a constitutional amendment has been passed, and a state law was adopted in 1920. Only pure grain alcohol may be sold for medicinal purposes, but there are no provisions in the state law regarding physicians' prescriptions.

Questionnaires were sent to 217 physicians in New Mexico, and 137, or 63 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 58; no, 76.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 24; no, 110.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 37; no, 95.

RESULTS IN NEW MEXICO

Number of physicians.....	529
Questionnaires sent .....	217
Questionnaires returned .....	137
Percentage of returns.....	63
General practitioners .....	133
Surgeons .....	1
Specialists .....	3
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes.....	58
No.....	76
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes.....	24
No.....	110
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes.....	37
No.....	95
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes.....	34
No.....	98
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable.....	27
Number of physicians stating no times advisable..	72
Beer: Number of physicians stating times advisable.....	8
Number of physicians stating no times advisable....	81
Wine: Number of physicians stating times advisable.....	14
Number of physicians stating no times advisable....	78
Do you hold a federal permit?	
Yes.....	8
No.....	61
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	26
Restricted absolutely .....	12
1 to 50 prescriptions.....	11
51 to 100 prescriptions.....	21
More than 100 prescriptions.....	2
Total .....	72
No restriction .....	57
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes.....	76
No.....	55

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of prohibition laws, the replies were: yes, 34; no, 98.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 27 had found it advisable to prescribe whisky, and 72 had not found it advisable; 8 had found it advisable to prescribe beer, and 81 had not found it advisable; 14 had found it advisable to prescribe wine, and 78 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 8; no, 61.



On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 72 stated that they should be restricted, and 57 did not believe such restrictions necessary; 26 answered yes, but did not specify a limit; 12 stated that the number should be limited to absolutely none; 11 considered from 1 to 50 prescriptions in three months sufficient; 21 considered from 51 to 100 satisfactory, and 2 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 76; no, 55.

COMMENTS

When I was a young man I prescribed considerable whisky, as I had been taught in the hospital; but as I grew older and saw more and more cases, I came to realize how futile it was. I never saw a patient saved

NEW YORK

Federal prohibition became effective, July 1, 1919. In 1921, the legislature passed a law permitting legally qualified physicians holding permits under the federal law to prescribe no more than 1 pint of alcoholic liquor for the same patient within a period of ten days. Such prescriptions must be written only after a personal examination of the patient or on the best information obtainable.

Questionnaires were sent to 5,375 physicians in New York, and 3,083, or 57 per cent., were returned .

On the question "Is whisky a necessary therapeutic agent?" the vote was: New York City, yes, 1,120; no, 429; Buffalo, yes, 115; no, 46; Rochester, yes, 44; no, 44; Syracuse, yes, 40;

RESULTS IN NEW YORK

NEW YORK	Greater New York	Buffalo	Rochester	Syracuse	Albany	Utica	Schenectady	Troy	Binghamton	Yonkers	Niagara Falls	Total Cities	Rural	Grand Total
Number of physicians.....	9,447	857	466	357	230	149	122	113	108	106	53	12,008	4,276	16,284
Questionnaires sent .....	2,759	313	151	130	71	48	46	30	29	36	20	3,633	1,742	5,375
Questionnaires returned .....	1,561	163	90	84	32	31	25	14	16	14	13	2,043	1,040	3,083
Percentage of returns.....	57	52	60	65	45	65	54	47	55	39	65	56	60	57
General practitioners .....	1,063	124	59	58	20	21	19	11	10	10	9	1,404	920	2,324
Surgeons .....	230	17	14	14	6	7	2	2	2	2	2	298	50	348
Specialists .....	268	22	17	12	6	3	4	1	4	2	2	341	70	411
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?														
Yes.....	1,120	115	44	40	17	25	15	7	9	9	10	1,411	604	2,015
No.....	429	46	44	43	15	6	10	7	7	5	3	615	426	1,041
Do you regard beer as a necessary therapeutic agent in the practice of medicine?														
Yes.....	640	71	22	20	12	14	5	2	5	2	7	800	267	1,067
No.....	879	88	66	63	19	17	20	12	10	11	6	1,191	748	1,939
Do you regard wine as a necessary therapeutic agent in the practice of medicine?														
Yes.....	856	89	33	27	13	19	7	4	7	8	7	1,070	346	1,416
No.....	664	71	52	56	19	11	18	10	9	5	6	921	658	1,579
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?														
Yes.....	334	51	13	15	5	9	4	2	3	2	5	443	222	665
No.....	1,129	107	71	68	26	21	20	12	13	12	7	1,486	789	2,266
How many times have you found it advisable to prescribe these liquors in a month?														
Whisky: Number of physicians stating times advisable .....	767	86	42	26	17	15	10	10	6	4	6	989	454	1,443
Number of physicians stating no times advisable.....	334	48	28	45	9	11	9	4	9	6	3	506	373	879
Beer: Number of physicians stating times advisable .....	224	24	4	4	2	..	..	1	1	..	2	262	84	346
Number of physicians stating no times advisable .....	540	79	45	67	19	21	13	13	13	8	4	822	578	1,400
Wine: Number of physicians stating times advisable .....	424	38	11	13	9	5	3	3	2	2	5	515	160	675
Number of physicians stating no times advisable .....	457	73	41	59	13	17	11	10	12	7	3	703	525	1,228
Do you hold a federal permit?														
Yes.....	750	98	37	27	17	13	12	7	4	4	5	974	393	1,367
No.....	553	42	36	42	7	15	12	3	11	7	5	733	490	1,223
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?														
Yes (limit not specified).....	188	20	11	7	4	2	1	3	..	2	5	243	139	382
Restricted absolutely .....	31	4	3	4	..	..	1	..	1	1	..	45	72	117
1 to 50 prescriptions.....	57	6	10	10	5	1	3	1	2	..	..	95	76	171
51 to 100 prescriptions.....	226	33	24	26	7	5	8	3	4	2	1	339	205	544
More than 100 prescriptions.....	25	3	..	2	..	1	1	..	1	..	..	33	22	55
Total .....	527	66	48	49	16	9	14	7	8	5	6	755	514	1,269
No restriction .....	959	90	37	31	15	22	9	7	8	8	7	1,193	494	1,687
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?														
Yes.....	508	67	44	51	17	6	15	7	7	7	5	734	507	1,241
No.....	976	90	40	30	14	24	9	6	9	7	8	1,213	500	1,713

with alcohol who could not have been saved without it. I am sure I have seen many patients injured by it, especially in pneumonia and typhoid fever. In the days when I used it for these patients I lost a great many of them; now that I use no alcohol I do not lose near as many.—*Colfax County.*

The benefit of malt and hops may be obtained in other forms, less palatable but as efficacious. If physicians must prescribe liquors, I believe they should not be restricted to any limited number of prescriptions. Limiting them to any number of prescriptions is as much as accusing them of prescribing unnecessarily. The limit should be taken off entirely, or else there should be none permitted.—*San Juan County.*

I hope you realize that when you have tabulated our answers you will have determined a social status and not a scientific fact as to the value of alcohol as a medicine.—*Rio Arriba County.*

I might have answered the question as regards beer and wine with a "No," as I have prescribed them very, very little, and in those cases could have used a distilled liquor. However, some physicians may depend on the beers and wines for therapeutic agents, and for them they should be obtainable and without restriction.—*Rio Arriba County.*

no, 43; Albany, yes, 17; no, 15; Utica, yes, 25; no, 6; Schenectady, yes, 15; no, 10; Troy, yes, 7; no, 7; Binghamton, yes, 9; no, 7; Yonkers, yes, 9; no, 5; Niagara Falls, yes, 10; no, 3. Total for the cities, yes, 1,411; no, 615; for the rural districts, yes, 604; no, 426; for the state, yes, 2,015; no, 1,041.

On the question "Is beer a necessary therapeutic agent?" the vote was: New York City, yes, 640; no, 879; Buffalo, yes, 71; no, 88; Rochester, yes, 22; no, 66; Syracuse, yes, 20; no, 63; Albany, yes, 12; no, 19; Utica, yes, 14; no, 17; Schenectady, yes, 5; no, 20; Troy, yes, 2; no, 12; Binghamton, yes, 5; no, 10; Yonkers, yes, 2; no, 11; Niagara Falls, yes, 7; no, 6. Total for the cities, yes, 800; no, 1,191; for the rural districts, yes, 267; no, 748; for the state, yes, 1,067; no, 1,939.

On the question "Is wine a necessary therapeutic agent?" the vote was: New York City, yes, 856; no, 664; Buffalo, yes,



89; no, 71; Rochester, yes, 33; no, 52; Syracuse, yes, 27; no, 56; Albany, yes, 13; no, 19; Utica, yes, 19; no, 11; Schenectady, yes, 7; no, 18; Troy, yes, 4; no, 10; Binghamton, yes, 7; no, 9; Yonkers, yes, 8; no, 5; Niagara Falls, yes, 7; no, 6. Total for the cities, yes, 1,070; no, 921; for the rural districts, yes, 346; no, 658; for the state, yes, 1,416; no, 1,574.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of prohibition laws, the replies were: yes, 665; no, 2,266.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 1,443 had found it advisable to prescribe whisky, and 879 had not found it advisable; 346 had found it advisable to prescribe beer, and 1,400 had not found it advisable; 675 had found it advisable to prescribe wine, and 1,228 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 1,367; no, 1,223.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 1,269 stated that they should be restricted, and 1,687 did not believe such restrictions necessary; 382 physicians answered yes, but did not specify a limit; 117 stated that the number should be restricted to absolutely none; 171 considered from 1 to 50 prescriptions in three months sufficient; 544 considered from 51 to 100 satisfactory, and 55 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 1,241; no, 1,713.

#### COMMENTS

While my answers to the foregoing questions would apparently favor prohibition from a medical standpoint, I wish to go on record as being absolutely and eternally opposed to prohibition.—*New York City*.

There is no doubt in my mind but that alcohol has its place in the practice of medicine. As licensed practitioners, why can we not be allowed to prescribe it as often as we think necessary? Unfortunately, the social uplifter and the men of new thought are being carried away by certain ideas. It is up to us as medical men and the American Medical Association as our spokesman to keep our feet on the ground and to use our horse sense and not be persuaded by certain types of fanatics. If, however, the American Medical Association does finally decide that liquor should be prescribed with or without restrictions and can induce Congress to see the point, I hope it will use its influence with the revenue department of the federal government so that when a prescription is presented to the druggist, the patient will be able to obtain the goods unadulterated and at a fair price, whether it be whisky, beer or wine. At the present time, under the present conditions, in the average drug store in a large city it is absolutely impossible to get reliable goods.—*New York City*.

An interesting evidence of the diminishing use of alcohol in medicine is to be seen in the records of the use of the drug at one of the largest New York City private hospitals. I have been a member of the medical board of that hospital for some twenty-five years, and in that period the number of beds has doubled and the number of patients has increased four times. In the same time the use of medicinal alcohol has fallen from some 400 gallons per annum to about 18 gallons. Practically all of the 2 pints of sherry now used in a month goes to flavoring of the food for the private patients; the same is true of the 1 pint of brandy. This leaves a consumption of only 15 gallons of whisky a year among approximately 7,500 patients. Most of the prescribing of whisky is done by the older physicians of the staff. I may say that there has never been the slightest restriction placed by the management of the hospital on the quantity of whisky administered to the patients.—*New York City*.

The amount the physician has been allowed to prescribe (1 pint in ten days) is absurdly small, so small in fact as to be useless for cases needing such medication; and for this reason, principally, I have never applied for a permit to prescribe. On the whole, I estimate that, in spite of the bootlegger, the benefits of the decrease in the results of alcoholism far outweigh the practical loss of alcohol as a therapeutic agent.—*Cortland County*.

I feel that there is a legitimate field in medicine for these drugs, and I have no patience with lay interference with our choice of drugs or their method of administration.—*Cooperstown*.

Before prohibition became effective, I used and believe that toxic cases of sepsis of any sort, especially diphtheria, were best treated by using whisky as a stimulant. Since then I have handled a considerable number of the above-mentioned cases, treated them without whisky, and obtained just as good results.—*Endicott*.

An arbitrary limitation of 1 pint of whisky per person every ten days is never enough for a severe case of pneumonia or influenza. Under existing conditions, it is impossible to get sufficient alcohol (95 per cent. pure or absolute) for technical purposes, especially in quantities needed in institutions.—*Harrison*.

Alcohol is needed internally in those rare and extreme cases in which the patient cannot take other food. Such cases are rare indeed, for in most of extreme cases of weakness the patient can take to better advantage a predigested liquid food, which, however, may have some alcoholic content. The use of alcohol is still existent today because, as

has so often been the case with many other forms of treatment, it is a tradition, an unscientific, empiric condition.—*Herkimer*.

One pint in ten days is entirely inadequate in acute conditions, and puts the physician in the predicament of having to deny his patient a drug which he badly needs, or break or evade the law by seeing that it is obtained in an illegal manner. If we are not to be allowed to use judgment in the matter, it would be better to abolish the prescription privilege entirely. Then our consciences would be clear, at least, no matter what happened to the patient.—*Oneida County*.

The person submitting this statement does not prescribe alcohol, nor has application ever been made for a permit. He is of the opinion that alcohol is a therapeutic agent of great value, and resents the act limiting the amount and controlling the use of any drug, in the practice of a registered physician. Attention is directed to the freedom whereby any one may purchase tonics (Eskay's and the like) over the counter.—*Rockland County*.

Almost every home I enter is well stocked with home brew, home-made wine or whisky which has been procured illegally unless the family was fortunate enough to have some that was left over from an old stock. If the government can control the law of fermentation, then it will be able to enforce prohibition.—*Buffalo*.

I believe that prohibition laws such as govern the Province of British Columbia would be of greater value than our present ones.—*Buffalo*.

No restrictions should be applied, and those who believe that certain therapeutic aims are best attained by the use of alcoholic beverages should be free to use them as they see fit. But the cases when these purposes cannot be accomplished equally well, if not better by other means, must be few indeed; and since some physicians have shown themselves open to the temptation of gain from the prescription not only of alcohol but also of other habit-forming drugs, I have answered in favor of restrictions.—*Rochester*.

I would not maintain that I could not practice medicine without alcohol, but that it is a convenient and safe remedy. Families can safely have half a pint of whisky on hand to administer as needed to relieve at once. Most of the whisky and gin that are prescribed by me are used in that way.—*Syracuse*.

The prohibition measure has prompted the home manufacture of vile and dangerous alcoholic products. A well-regulated depot or store, under federal control, with a control system of distribution, would not be unreasonable for a large, cosmopolitan population.—*Jamaica*.

I think the different liquors, wine and beers are subject to the advantages and disadvantages of all remedies. They are of use if taken in moderation and under proper conditions. There are not many remedies that we cannot dispense with if put to the pinch, but that does not imply their uselessness. The opinions of many physicians against alcohol are rather born of inheritance and fanatic teachings.—*Brooklyn*.

I shall refuse to place myself in the same class as liquor dealers and have the internal revenue department hold a club over me, exercising the same when they wish to come to my office and examine me and my records as to whether or not I am obeying their instructions. Since I cannot prescribe liquors the same as narcotics, I tell the patient to get the liquor needed whichever way he can. And he gets it, too.—*Brooklyn*.

I believe that alcohol is a habit-forming poison. If the secret of making it could be lost, I believe that man would be the gainer, notwithstanding its value in the arts and commerce. I believe in the fullest degree of social and personal liberty; but under the present economic system, which is dominated by the profit-making motive, society cannot be trusted with alcohol. Alcohol is not to be compromised with; half prohibition and restrictions only invite fraud. If alcohol is socially dangerous, as I believe it is, then its prohibition should be absolute and unequivocal. When the present tottering society is supplanted by civilization, then all prohibition should be abolished.—*New York City*.

Let the A. M. A. take the position that the American doctor is above whisky; that he is competent enough to prescribe it when the patient needs it, and honest enough, too. How many doctors misused their rights in the use of opium before the Harrison law? Comparatively very few. How many doctors are writing 100 prescriptions in three months? Not so many. Go after them. They will have a fine time showing their fellow-medicos a definite need in each case. I am in the business section and have innumerable requests for whisky. Could use up the 100 in a week. Am I a doctor? Am I a bartender?—*New York City*.

The restrictions should be along precisely similar lines to those now prevailing under the Harrison Narcotic Law. No special prescription blanks should be required.—*New York City*.

My German and Swiss patients all make their own beer; and though it is poor stuff, still they don't feel the privation that my Italian, Greek and French patients do in the case of claret. I have quite an obstetric practice and would like to prescribe beer for nursing mothers, but by the Volstead act I cannot do it.—*New York City*.

I favor furnishing the above to the patient at the cost of production—absolutely no profit to factory, dealer or physician. This would silence the wretches who create a lot of hell by claiming the patient died because of prohibition.—*New York City*.

I have written more prescriptions for whisky since prohibition than during my twenty years of practice. I have used two books of blanks and I feel that not one of that number of patients was legitimately entitled or needed a prescription for whisky. I am sure they exaggerated their cases, and if their sufferings were as stated we have other remedies which would have relieved. But such is the case in a large general practice in a great city.—*New York City*.

I should advise Congress to read the Quebec, Canada, law and follow same with government agents, not making physicians and druggists the goat.—*New York City*.



WISCONSIN

Questionnaires were sent to 1,194 physicians in Wisconsin, and 707, or 59 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Milwaukee, yes, 72; no, 37; Racine, yes, 6; no, 7. Total for the cities, yes, 78; no, 44; for the rural districts, yes, 264; no, 315; for the state, yes, 342; no, 359.

On the question "Is beer a necessary therapeutic agent?" the vote was: Milwaukee, yes, 46; no, 64; Racine, yes, 4; no, 9. Total for the cities, yes, 50; no, 73; for the rural districts, yes, 138; no, 436; for the state, yes, 188; no, 509.

On the question "Is wine a necessary therapeutic agent?" the vote was: Milwaukee, yes, 58; no, 52; Racine, yes, 5; no, 8. Total for the cities, yes, 63; no, 60; for the rural districts, yes, 158; no, 416; for the state, yes, 221; no, 476.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 116; no, 567.

RESULTS IN WISCONSIN

WISCONSIN	Milwaukee	Racine	Total Cities	Rural	Grand Total
Number of physicians.....	654	56	710	2,040	2,750
Questionnaires sent .....	222	25	247	947	1,194
Questionnaires returned .....	115	13	128	579	707
Percentage of returns.....	52	52	52	61	59
General practitioners .....	83	10	93	500	593
Surgeons .....	18	1	19	32	51
Specialists .....	14	2	16	47	63
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?					
Yes.....	72	6	78	264	342
No.....	37	7	44	315	359
Do you regard beer as a necessary therapeutic agent in the practice of medicine?					
Yes.....	46	4	50	138	188
No.....	64	9	73	436	509
Do you regard wine as a necessary therapeutic agent in the practice of medicine?					
Yes.....	58	5	63	158	221
No.....	52	8	60	416	476
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?					
Yes.....	31	4	35	81	116
No.....	79	9	88	479	567
How many times have you found it advisable to prescribe these liquors in a month?					
Whisky: Number of physicians stating times advisable.....	67	5	72	222	294
Number of physicians stating no times advisable.....	30	5	35	284	319
Beer: Number of physicians stating times advisable.....	22	..	22	62	84
Number of physicians stating no times advisable.....	58	9	67	412	479
Wine: Number of physicians stating times advisable.....	43	5	53	102	155
Number of physicians stating no times advisable.....	42	6	48	379	427
Do you hold a federal permit?					
Yes.....	69	7	76	232	308
No.....	28	3	31	279	310
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?					
Yes (limit not specified).....	11	1	12	73	85
Restricted absolutely .....	6	2	8	76	84
1 to 50 prescriptions.....	8	2	10	92	102
51 to 100 prescriptions.....	24	2	26	129	155
More than 100 prescriptions.....	4	1	5	16	21
Total.....	53	8	61	386	447
No restriction .....	61	4	65	180	245
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?					
Yes.....	44	8	52	371	423
No.....	64	4	68	187	255

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 294 had found it advisable to prescribe whisky, and 319 had not found it advisable; 84 had found it advisable to prescribe beer, and 479 had not found it advisable; 155 had found it advisable to prescribe wine, and 427 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 308; no, 310.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 447 stated that they should be restricted, and 245 did not believe such restrictions necessary; 85 physicians answered yes, but did not specify a limit; 84 stated that the number should be limited to absolutely none; 102 considered from 1 to 50 prescriptions in three months sufficient; 155 physicians considered from 51 to 100 satisfactory, and 21 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 423; no, 255.

COMMENTS

I have had no patient ask for alcoholics that was in need of them for therapeutic purposes, but I am aware of the fact that physicians with a limited practice are writing at least 50 per cent. as many prescriptions for booze as they did for all prescriptions prior to the issuing of permits. There is no physician who has any respect for his profession or himself that cares to take the place of the former bartender or saloonkeeper. I am heartily in favor of the government taking control of all alcoholic liquors, and establishing stores of their own for the control and distribution of alcoholics and taking them away from the wholesale and retail druggists.—*Appleton.*

I cannot conceive of any physician requiring anything like the number of prescriptions allowed him now, but I do not like government regulation of medical practice, and rebel against politics entering and controlling scientific medicine. I'm "agin" the principle of it.—*Wauwatosa.*

I fully realize that there must be restrictions. Compare our federal narcotic laws. The restrictions are so few and sane that a physician of standing need have no fear of ever breaking any of the regulations; so far as his relation to his patient is concerned, he would not even have to study them.—*Racine.*

I have been a general practitioner of medicine for forty-seven years and was taught to use alcoholics as a useful drug. I have used them in

all ways and I never have seen an instance in which I could truthfully say that they were of any benefit beyond their narcotizing effect.—*Walworth County.*

Change any conflicting laws, and permit only the government to own and dispense intoxicants in sealed packages for medicinal use.—*Sun Prairie.*

In this vicinity the restriction of booze has worked fairly well among the poor, but among those who have a little to spend they use more liquor than ever, i. e., "moonshine." We all know that an immense quantity is made and consumed and, I think, in time will tell a sad tale.—*Shawano County.*

Whisky as a household remedy has held its place with very beneficial results. I have many women in my circle of clients who use a little hot whisky at their periods with gratifying results. A hot whisky with a hot foot bath when the provider has come home chilled has broken up many a cold. But we must admit that the use of whisky has been abused and that it is better to place it in the same category as narcotics.—*Milwaukee.*

There should be no need for limitation or restriction of prescribing beer, wine or whisky. The matter should be taken out of the control of the medical profession entirely. I do not believe in the saloon in any form, but I do believe that some better plan should be formulated than is now being undertaken. Theoretically, we are operating under prohibition regulation; practically, we are far from accomplishing any marked results. I believe in regulation and not prohibition.—*Milwaukee.*



## Marriages

SOLOMAN WINFRED PRIOLEAUX, Memphis, Tenn., to Miss Ethel M. Weaver of Raleigh, N. C., November 10.

HENRY ANTHONY SPRINGER, Dayton, Ohio, to Miss Alma Rosalina Pudenz of Cincinnati, October 26.

FRANCES MABEL HARDY to Mr. Lewis Addington Smith, both of Dayton, Ohio, November 24.

MAURICE C. LOREE, Akron, Ohio, to Miss Elizabeth Ross Hopkins of Pueblo, Colo., recently.

PAUL C. EISEMAN, Latrobe, Pa., to Miss Florence Evelyn Smith of Pittsburgh, December 9.

WILLIAM JOSEPH HUNNICUTT to Miss Nolan Knight, both of Asheville, N. C., January 3.

## Deaths

George Noble Kreider ☉ Springfield, Ill.; Medical Department of the University of the City of New York, 1880; former surgeon of St. John's Hospital; died, January 4, aged 65. Dr. Kreider was born in Lancaster, Ohio, Oct. 10, 1856, and received his A.B. and A.M. from Ohio Wesleyan University; was surgeon in charge of the Wabash Hospital; treasurer, 1891-1901, and president, 1901, of the Illinois State Medical Society; founder and editor of the Illinois State Medical Journal; president of the Sangamon County Medical Society, 1899; lieutenant-colonel and assistant surgeon-general of the Illinois National Guard. For several years he served on the Illinois State Board of Health.

Samuel Rutherford Olliphant, New York City; University of Alabama, Mobile, 1877; Medical College of Louisiana, New Orleans, 1878; member of the Medical Society of the State of New York; formerly member of the Mount Vernon (N. Y.) Board of Health; on the staff of Mount Vernon and the New York Post-Graduate hospitals; formerly president of the New Orleans State Board of Health; died, December 26, at Lafayette, La., following an operation on the throat, aged 75.

Robert Childs Paterson ☉ Saranac Lake, N. Y.; McGill University, Faculty of Medicine, Montreal, Canada, 1902; for twelve years connected with the tuberculosis sanatorium at Saranac Lake; member of the American Climatological and Clinical Association, the National Tuberculosis Association and the American Pathological and Bacteriological Association; was shot and instantly killed by a mentally deranged ex-service man, December 24, aged 43.

John Rankin ☉ Brooklyn; Long Island College Hospital, Brooklyn, 1882; ophthalmologist and one of the founders of the Bushwick and Caledonian Hospitals; vice president of the East Brooklyn Dispensary; veteran of the Civil War; served during the late war as county examining surgeon; died, December 21, from acute dilatation of the heart and pulmonary edema, aged 76.

Jesse Ansley Griffin, Augusta, Ga.; Baltimore Medical College, 1906; member of the Florida Medical Association; served during the World War in France and Germany, M. C., U. S. Army, with the rank of major; was found dead in bed, December 14, from heart disease, in Los Angeles, Calif., aged 49.

Russell Shepard Church ☉ Bristol, R. I.; Yale University School of Medicine, New Haven, 1900; member of the town council and the school committee; cut his throat with a razor, while temporarily deranged from illness, and died in the Rhode Island Hospital, Providence, December 22, aged 45.

Charles Edmund McBride, Webb City, Mo.; Missouri Medical College, St. Louis, 1880; county physician; city health officer; statistician, state bureau of vital statistics; died suddenly, December 29, from cerebral hemorrhage, while at the bedside of a patient, aged 69.

Byron B. Potter, Lancaster, Mo.; Cincinnati College of Medicine and Surgery, 1869; member of the Missouri State Medical Association; veteran of the Civil War; formerly member of the U. S. Pension Examining Surgeons; died suddenly, December 16, aged 74.

Lucy Emma Wetherbee Rockwell, Worcester, Mass.; Boston University School of Medicine, Boston, 1899; member of the Massachusetts Medical Society; died, December 18, from pneumonia, following an operation in the Hahnemann Hospital, Worcester, aged 45.

John Raymond Middlebrooks ☉ Powder Springs, Ga.; Jefferson Medical College, Philadelphia, 1915; passed assistant surgeon, with rank of lieutenant, U. S. Navy; was killed, December 10, in an automobile accident, at Portsmouth, Va., aged 32.

Dirk Adrian Kuyk ☉ Richmond, Va.; Medical College of Virginia, Richmond, 1885; former lecturer on ophthalmology, otology, laryngology and rhinology at his alma mater; died, December 16, from influenzal pneumonia, aged 57.

William Alexander Beane, East Liverpool, Ohio; Western Pennsylvania Medical School, Pittsburgh, 1895; for many years county coroner; died suddenly, at the City Hospital, November 12, from cerebral hemorrhage, aged 49.

Samuel C. Falls, Philadelphia; Medico-Chirurgical College of Philadelphia, 1893; member of the Medical Society of the State of Pennsylvania; shot and killed himself while suffering from ill health, December 26, aged 49.

Franz August Richard Jung, Washington, D. C.; University of Leipzig, Germany, 1894; organized the Red Cross Hospital in Munich, Bavaria, during the World War; died, December 16, from heart disease, aged 52.

Albert M. Van Sickle, Brooklyn; College of Physicians and Surgeons, New York City, 1896; formerly medical inspector, department of health of the city of New York; died suddenly, December 27, from myocarditis, aged 49.

Frederick Horace Davis, Darby, Pa.; Jefferson Medical College, Philadelphia, 1891; Philadelphia College of Pharmacy, 1885; died, December 19, from cerebral hemorrhage, in the Polyclinic Hospital, aged 56.

Albert R. Nicholson, Oleander, Calif.; University of Michigan, Ann Arbor, 1879; member of the Medical Society of the State of California; died, December 18, from anemia, at the Porterville Hospital, aged 70.

James S. Sweeney, Kent, Ohio; Starling Medical College, Columbus, 1853; former mayor of Kent; member of the town council and board of education; veteran of the Civil War; died, December 22, aged 91.

Thomas Leo Larkin, Philadelphia; Jefferson Medical College, Philadelphia, 1908; connected with the Misericordia Hospital, Philadelphia, since its opening; died, December 11, from heart disease, aged 43.

Charles F. Rice, Gainesville, Texas; Memphis Hospital Medical College, Memphis, Tenn., 1902; member of the State Medical Association of Texas; died suddenly, December 14, from heart disease, aged 41.

Johnathan B. Potteiger, Hamburg, Pa.; Jefferson Medical College, Philadelphia, 1859; veteran of the Civil War; for many years examiner for the county board of pensions; died, December 21, aged 83.

Napoleon Jacques, Longueuil, Quebec, Canada; Montreal School of Medicine and Surgery, Montreal, 1865; practitioner in Worcester, Mass., for nearly half a century; died in December, aged 81.

Olaf J. Veline, Minneapolis; Medical Department of the Hamline University, Minneapolis, 1897; died, December 13, at the Swedish Hospital, following an operation for appendicitis, aged 55.

Nelson H. Mesick, Glenco Mills, N. Y.; Albany Medical College, 1868; member of the Medical Society of the State of New York; died suddenly, December 14, from heart disease, aged 76.

Charles Humphrey Perry, Oneida, N. Y.; Dartmouth Medical College, Hanover, 1867; member of the Medical Society of the State of New York; also a lawyer; died, December 16, aged 77.

Robert Benjamin Shreve, Bloomfield, Iowa; College of Physicians and Surgeons, Keokuk, 1875; veteran of the Civil War; died suddenly, December 19, from cerebral hemorrhage, aged 80.

John William Arnold, Columbus, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1885; died suddenly, from heart disease at the bedside of a patient, December 26, aged 69.

Frederick Albert Langolf, Sr., Louisville, Ky.; Louisville Medical College, Louisville, 1902; member of the Kentucky State Medical Association; died, December 16, aged 49.

☉ Indicates "Fellow" of the American Medical Association.



**John C. Henry**, East Stroudsburg, Pa.; Jefferson Medical College, Philadelphia, 1885; member of the Medical Society of the State of Pennsylvania; died, December 21, aged 64.

**Gilbert Baldwin** ♂ Ruthven, Iowa; Missouri Medical College, St. Louis, 1882; died, suddenly, from heart disease while cranking his automobile, December 16, aged 61.

**Albert E. Hitt**, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1893; died, December 15, at Punta Gorda, Fla., where he had gone for the winter, aged 57.

**John McCoy**, Pasadena, Calif.; University of Michigan, Ann Arbor, 1865; veteran of the Civil War; died, December 20, at the Soldiers' Home, Sawtelle, Calif., aged 86.

**John Hugh O'Connor**, Philadelphia, Jefferson Medical College, Philadelphia, 1888; died, December 23, at the Jefferson Hospital, from disease of the kidney, aged 60.

**Samuel S. Butler** ♂ Graycreek, Colo.; University of Arkansas, Little Rock, 1901; died, November 12, at Trinidad, Colo., from abscess of the appendix, aged 90.

**Lester Wilson Olney** ♂ West Jefferson, Ohio; Starling Medical College, Columbus, 1906; died, December 10, from acute articular rheumatism, aged 41.

**Richard Black Cummings** ♂ Wayne, Mich.; University of the City of New York, 1885; village president; died, December 19, from heart disease, aged 63.

**Hartley Weems**, Fort Smith, Ark.; Vanderbilt University Medical Department, Nashville, 1881; died, December 18, at the home of his daughter, aged 68.

**Frank Stanley Pierce**, Beaverton, Mich.; Rush Medical College, Chicago, 1895; county coroner since 1900; also a druggist; died, December 19, aged 51.

**Ross A. Walker**, Spokane, Wash.; Bennet College of Eclectic Medicine and Surgery, Chicago, 1894; died, November 30, from acute indigestion, aged 65.

**Emily F. Hollingshead**, Trenton, N. J.; Homeopathic Hospital College, Cleveland, 1875; died, December 10, in the Mercer Hospital, from paresis.

**George E. Nottage**, Portland, Ore.; University of California Medical School, San Francisco, 1874; died, December 10, in Los Angeles, aged 77.

**Oscar N. Begtrup** ♂ Viroqua, Wis.; University of Christianity, Norway, 1902; died, December 12, in a hospital at Rockford, Ill., aged 43.

**Charles B. Morrell**, Benton Harbor, Mich.; Pulte Medical College, Cincinnati, 1882; also an author and lecturer; died, December 21, aged 62.

**Lorenzo Rounds**, Mayberry, Neb.; Northwestern Medical College, St. Joseph, Mo., 1881; veteran of the Civil War; died, December 7, aged 76.

**J. Trannie Smith** ♂ Dallas, Texas; Baylor University, College of Medicine, Dallas, 1911; was shot and killed, December 19, aged 37.

**Oscar G. Olson**, Chicago; Kentucky School of Medicine, Louisville, 1893; died, December 27, from food poisoning, aged 57.

**John S. Evans** ♂ Brookfield, Mo.; Missouri Medical College, St. Louis, 1890; died, December 21, after a short illness, aged 56.

**Edmund A. Sizer**, Cosmopolis, Wash.; College of Physicians and Surgeons, Chicago, 1897; died, November 26, aged 50.

**James P. Suiter**, Hadley, Mich.; Detroit Medical College, 1872; veteran of the Civil War; died, December 13, aged 81.

**Thomas J. Whitney**, Frewsburg, N. Y.; University of Buffalo, 1865; Civil War veteran; died, December 14, aged 79.

**William Henry Schopfer**, Newark, N. J.; Baltimore Medical College, Baltimore, 1898; died, December 17, aged 49.

**Adalbert R. Fellows**, Glenn, Calif.; Chicago Medical College, 1879; died, December 15, from pneumonia, aged 80.

**Ralston E. Holvey**, Lead, S. D.; University of the South, Sewanee, Tenn., 1900; died, December 8, aged 46.

**Milton Kennon**, Barnesville, Ohio; Columbus Medical College, Columbus, 1885; died, December 14, aged 80.

**Stephen G. Smith**, Hannibal, Mo.; Columbus (Ohio) Medical College, 1878; died, December 15, aged 76.

**M. C. Keith**, Pedlars Mills, Va. (years of practice); died, December 12, from heart disease, aged 84.

**R. T. Forbis**, Hartshorne, Okla. (license, Oklahoma, 1877); died, December 11, from paresis, aged 78.

## Correspondence

### STATUS LYMPHATICUS TYPE NOT NECESSARILY DEGENERATE

*To the Editor:*—The editorial on "The Significance of a Persistent Thymus," THE JOURNAL, Dec. 24, 1921, p. 2063, is timely and of considerable general interest, especially since the condition of status lymphaticus is recognized more by these characters: the hypoplasia of the vascular system (small heart and aorta); the delicate, clear pale skin; the rounded lines of a graceful body; the scanty body and facial hairs; the feminine distribution of the pubic hairs in the male as well as the feminine type of pelvis (hips as wide as or wider than the chest), and the arched femurs. To these characters, Norris, Symmers, Ewing and Emerson have directed attention as they have appeared on the necropsy table. As most necropsies are coroners' cases, this type (sexual intergrade so far as conformation of body and secondary characters are concerned) has come to be associated with sudden death, suicide and crime. About 10 per cent. of the bodies observed at necropsy are of this type. Ewing called attention to the fact that we did not have enough observations by clinicians on this type; hence, with this in mind, I carefully observed a run of several hundred patients at our clinic at the New York Post-Graduate Hospital and found that about 10 per cent. of the patients are of this type. It is not to be confounded with degeneracy or homosexuality. Haven Emerson, in a personal communication, told me that some patients of the status lymphaticus type observed by him were of the first rank among successful men. Until we have a large number of observations based on others than those that have come to the necropsy table, it is wrong to assume that this type is especially given to crime, suicide, drug addiction or sudden death.

OTTO V. HUFFMAN, M.D., New York.

### "HOOTCH" DELIRIUM: AN ATYPICAL FORM OF DELIRIUM TREMENS

*To the Editor:*—The average person who would formerly have been insulted if invited to take a drink of cheap "squirrel whisky" that had been distilled by experts is now, since the advent of prohibition, perfectly willing to pay from 75 cents to \$1 for an ounce or two of anything that has a kick in it, and will drink anything that can be put in a bottle or glass. As a result, we have had during the past year a number of cases of acute delirium which differ in many respects from the typical delirium tremens caused by ethyl alcohol. Hospital attendants who were able in the past to recognize delirium tremens patients as such are now likely to classify them as insane. While the majority of these cases develop in the old chronic alcoholics with a history of several years' abuse of alcohol, some patients give a history of only two years' chronic alcoholism, with an acute alcoholic spree of from six weeks to six months. In these cases the onset of delirium is sudden, without preceding fear and apprehension. The period of food starvation is not as marked; the delirium is less severe; in emotional attitude these patients are not as anxious and fearful; in actions they are not as restless or violent; and they do not take as active a part in their hallucinations. Clouding of consciousness is not so complete. Hallucinations of hearing are rare; the terrifying content of hallucinations of sight is not so marked. Attention is easier to obtain and maintain. Disturbances of orientation and time are not as profound.

These patients are prone to complain of pain or of not feeling well, whereas the typical delirium tremens patient will always say he feels fine, and is apparently not suscep-



tible even to extreme pain. This anesthesia to pain, even in severe injuries, is a well known feature in the ethyl alcohol delirium.

In many of these cases, tremor is slight or altogether absent. The intense coarse tremor of the tongue, hands and extremities, from which delirium tremens takes its name, is not present.

Ataxic disturbances of gait are not so prominent. Disturbances of speech are not as marked; the paraphasia with malposition of words and syllables is seldom seen, and severe cases with slurring and unintelligible speech do not occur.

Severe muscular spasms and epileptic seizures, or so-called whisky fits, are absent in nonepileptic cases.

The return of mental clearness generally takes place following a long sleep between the third and sixth day. So far, I have not seen any patients develop a secondary alcoholic psychosis.

CHARLES E. SCELETH, M.D., Chicago.

### MEDICAL TEACHING CONDITIONS IN ARGENTINA

*To the Editor:*—At the suggestion of the director of this university, Dr. Francisco J. de la Torre, I beg to call your attention to some faulty information transmitted by your correspondent and published in *THE JOURNAL*, July 9, 1921, p. 137. It is stated that "at present the students at Cordoba and Rosario have the power to appoint or dismiss professors, etc., and of course they 'pass' the examinations." These statements are incorrect. As regards the first, I am sending a copy of our present regulations. These will show that it is not a fact that the students appoint their professors. They participate with all the professors in the designation of the board of directors, which exercises only honorary governing functions. As to the second statement, it is sufficient to point to the percentage of students who failed in 1917 and 1920, i. e., before and after the 1918 university reform: Law School: 1917, 2.4 per cent.; 1920, 8.8 per cent.; Medical School: 1917, 5.8 per cent.; 1920, 5.1 per cent.; School of Natural Sciences: 1917, 5.5 per cent.; 1920, 5.3 per cent.

ERNESTO OCAÑA, Cordoba, Argentina.

Secretary General, National University of Cordoba.

### "NEW METHOD OF TREATMENT OF VARICOSE ULCERS OF THE LEG"

*To the Editor:*—In reference to the article by Dr. McKnight (*THE JOURNAL*, Dec. 10, 1921, p. 1890), I suggest that the title should have been "An Old Method of Treatment for Varicose Ulcers of the Leg." I remember that, some fifteen years ago, in the free surgical ambulatories of Naples, always full of poor patients from southern Italy, many were afflicted with ulcers of the leg, and that the treatment described by Dr. McKnight was used on most of these patients. I am sure that this very good method of treatment for varicose ulcers of the leg, the same as it was in Naples, was largely used in all the other clinics and hospitals of Italy.

GIOVANNI PERILLI, M.D., Denver.

### "DR." AND "M.D."

*To the Editor:*—Dr. Bassler's communication in *THE JOURNAL*, Dec. 31, 1921, p. 2143, was timely. Each of us, no doubt, is experiencing at times similar difficulty in differentiating the "Dr." of feet culture or corn removal from the "Dr." of ablution, or the "Dr." of rejuvenation by adjustments from the "Dr." of phrenology. Evidently it has become of late quite the proper thing for any Tom, Dick and Harry to annex onto himself the academic title "Dr.," the only require-

ments in most cases being a mail order course and the price of a diploma, provided said T., D. and H. care to go into so much after all unnecessary trouble! The assuming and conferring of this title has become a vicious and obnoxious affair. Something ought to be done by us, not the other fellows, to inform the public of what's what.

I would suggest this: Instead of adding M.D. to our names, let us interpose the word "medicinae" in abbreviation, namely "med.," e. g., Dr. med. John Brown. Everybody will then know what kind of a "Dr." Dr. Brown is. I will add that this method of designation is not new.

DR. MED. M. C. GOY, Chicago.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### THE USE OF OUABAIN THERAPEUTICALLY

*To the Editor:*—Following the use of ouabain, 0.0005 gm. intravenously in collapse from shock, when would it be safe to begin the use of digitalis by mouth? Is the administration of ouabain a contraindication to the use of surgical pituitary extract simultaneously? Does it contraindicate the use of strychnin and phystostigmin? If this is answered in *THE JOURNAL*, please do not mention my name. I certainly wish to thank you for past favors.

L. C. D.

ANSWER.—There is much less danger of excessive additive action when digitalis is used perorally following intravenous injection of ouabain than when the inverse relation is induced. A heart previously digitalized may readily be overwhelmed by the sudden introduction into the circulation of a full medicinal dose of a body of such digitalis-like action as ouabain. When, on the other hand, an individual that was not previously digitalized is given an intravenous dose of ouabain, there is not such likelihood of overwhelming the heart from giving digitalis by mouth even soon thereafter, because the digitalis is rather slowly absorbed. It would, however, probably be best to wait from twelve to twenty-four hours before starting digitalis, so as to determine what effect the heroic administration of a digitalis body like ouabain is capable of producing. Simultaneous administration of such pressor drugs as pituitary, strychnin or physostigmin (eserin) with ouabain is contraindicated if the vasoconstriction produced throws a strain on the heart that the latter is unable to bear. Such a condition might occur in cases of myocardial degeneration. If the heart muscle is fairly healthy and the blood vessels are relaxed, then the simultaneous administration of ouabain and of one or more pressor drugs would be decidedly indicated.

### TREATMENT OF A PATIENT WITH SYPHILIS AND DIABETES

*To the Editor:*—Kindly make me a suggestion regarding the following case: About two years ago a patient was suspected of having neurosyphilis. A Wassermann test was ++++ positive. He has been given twenty injections of 6 gm. of neo-arsphenamin, five injections being given at weekly intervals at different periods. He has been given mercury and potassium iodid regularly for a considerable time. The urine shows a considerable amount of sugar, varying in amount with the diet. He recently gave a ++++ Wassermann reaction. Would you consider it advisable to administer neo-arsphenamin further?

J. M. S., Iowa.

ANSWER.—The facts given are not sufficient to offer a precise answer. It may, however, be presumed that the man had neurosyphilis two years ago. He has had moderate treatment with neo-arsphenamin and mercury during the last two years, but the Wassermann reaction is still positive, and he has diabetes. The diabetes will not make the Wassermann reaction positive, and it is a fair assumption from his present positive Wassermann reaction that he has active syphilis. Taking all of these facts into consideration, a vigorous course of arsphenamin and mercury is indicated. It is also to be assumed that the patient is to have a thorough clinical examination, and that the specific treatment is to be as much controlled by the findings of this examination as by a positive Wassermann reaction.



# Medical Education, Registration and Hospital Service

## COMING EXAMINATIONS

CALIFORNIA: Los Angeles, Feb. 13-16. Sec., Dr. Charles B. Pinkham, 342 Flood Bldg., San Francisco.

KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.

NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools, Part I, Feb. 15-17; Part II, Feb. 20-21. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEW YORK: Albany, Buffalo, Syracuse and New York City, Jan. 23-26. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

SOUTH DAKOTA: Pierre, Jan. 17. Director, Dr. H. R. Kenaston, Bonesteel.

VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.

## Alaska March Examination

Dr. Harry C. Devighne, secretary, Alaska Territorial Medical Examining Board, reports the oral and written examination held at Juneau, March 2, 1921. The examination covered 10 subjects and included 75 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	.....	(1906)	75
Washington University	.....	(1920)	80
University of Nebraska	.....	(1919)	90

## Arizona July and October Examinations

Dr. Ancil Martin, secretary, Arizona State Board of Medical Examiners, reports the written examinations held at Phoenix, July 5-6, and Oct. 4-5, 1921. The examinations covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. One candidate, a graduate of the Beaumont Hospital Medical College in 1888, was examined at the July meeting and failed, receiving a grade of 65.9. Of the 3 candidates who took the October examination, 1 passed and 2 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
St. Louis University School of Medicine	.....	(1920)	89.5
FAILED			
Southwestern Homeopathic Medical Coll. and Hosp.	....	(1903)	65.1
St. Louis College of Physicians and Surgeons	.....	(1920)	72.1

## Rhode Island July Examination

Dr. Byron U. Richards, secretary, Rhode Island State Board of Health, reports the written and practical examination held at Providence, July 6-7, 1921. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Eleven candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bowdoin Medical School	.....	(1921)	88.2
Harvard University	.....	(1917) 92, (1919)	87.2
Tufts College Medical School	.....	(1898)	92.1,
		(1920) 82, 83.5, 85.5, 88.7	
Fordham University	.....	(1920)	94.1
University of Pennsylvania	.....	(1889)	89.2
University of Naples	.....	(1915)*	80

\* Graduation not verified.

## Hawaii October Examination

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, Oct. 10-13, 1921. The examination covered 11 subjects and included 56 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 8 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Colorado	.....	(1921)	75.7
Rush Medical College	.....	(1921)*	76.3
University of Pennsylvania	.....	(1919)	87.8
University of Pittsburgh	.....	(1920)	88.5

University of Virginia	.....	(1918)	78.5
McGill University	.....	(1907)	76.5
Tokyo Imperial University	.....	(1918)†	75.7
University of Tomsk	.....	(1918)†	79

FAILED

Howard University ..... (1892) 51.8  
\* This candidate has finished the medical course and will obtain the M.D. degree after he has completed a year's internship in a hospital.  
† Graduation not verified.

## Book Notices

RÔLE DE LA RADIOLOGIE DANS LE PRONOSTIC DES AFFECTIONS CARDIO-VASCULAIRES. Par le Docteur Germaine André Sorel. Avec Préface de M. le Prof. Vaquez. Paper. Price 15 francs. Pp. 90, with 59 illustrations. Paris: A. Davy et Fils Ainé, 1921.

This book is in a sense an appendix to the books by Vaquez and Bordet on radiologic examination of the heart and aorta, volumes that have been recently noticed in these columns. This book is suggestive of the possibilities in the way of diagnosis and prognosis that lie in careful quantitative fluoroscopic examinations. We offer no criticism of the manner in which the book is written; it is clear, condensed, with conclusions grouped and plainly stated. What we do criticize is the securing of clarity and simplicity by a sacrifice of fact, by the ignoring of difficulties or by the utterance of half truths. To state repeatedly that only by fluoroscopy can prognosis be accurate, to assert frequently that by this means prognosis is determined "with certainty," "positively," etc., is to overstate the facts. We have the feeling that we are reading the words of an imaginative enthusiast rather than a sober scientist. Perhaps this is because we believe that the proper place for the roentgen ray in diagnosis and prognosis of heart disease is as an adjunct. To minimize, as is done in this volume, the aid obtained from the history and from a thorough physical examination, and to insist on the infallibility of the roentgen ray is unjustifiable. The whole of diagnosis and prognosis is not covered by the measurements of fluoroscopic silhouettes of the heart and aorta. A frank acknowledgment of the difficulties of such a method of diagnosis with the possibilities of error would add to rather than detract from the merit of the book.

THE BLOOD SUPPLY TO THE HEART IN ITS ANATOMICAL AND CLINICAL ASPECTS. By Louis Gross, M.D., C.M. Research Associate, Royal Victoria Hospital, Montreal. With an Introduction by Horst Oertel, Strathcona Professor of Pathology, McGill University, Montreal. Cloth. Price, \$5. Pp. 171, with 35 illustrations. New York: Paul B. Hoeber, 1921.

This monograph is a real contribution to the knowledge of the anatomy of the heart. It is the result of painstaking research in library and laboratory. By a combination of methods—dissection, injection, roentgenoscopy, etc.—and the employment of a special technic of his own, the author has worked out the details of the typical coronary circulation, together with its chief variations. Of especial interest, because of its direct clinical bearing, is his description of the arterial supply to the different parts of the conducting system of the heart; his unreserved verdict in favor of a rich anastomosis between the coronary arteries, and his description of the changes that take place in the cardiac circulation with advancing years. He also makes a contribution to the mooted question as to the presence or absence of vessels in the heart valves. The book is well printed, with very few typographic errors. The illustrations of injected hearts show excellently on the heavy paper. The insertion of an occasional letter, arrow or numeral to indicate the especial part of the figure to which attention is called would be helpful.

AUGENPRAXIS FÜR NICHTSPEZIALISTEN. Von Dr. med. R. Birkhäuser, Privat-Dozent für Ophthalmologie in Basel. Second edition. Paper. Price, 32 marks. Pp. 199, with 30 illustrations. Berlin: Julius Springer, 1921.

As stated in the introduction, this little book is written for the benefit of the general medical man who is called on in the course of his routine work to diagnose and treat occasional eye conditions; it is not intended to replace any textbook of ophthalmology. As the diagnostic and operative



armamentarium of the general practitioner is usually very limited, the special examinations and treatments are not described. The book is well gotten up and is well written, although in somewhat colloquial German. The photographic illustrations are good and there are some excellent small marginal diagrammatic sketches which could be increased in number to great advantage. From an ophthalmic standpoint, the text is sound and conservative with a few really well-written chapters, in particular that on the pupil. The book would be of far greater value to the general practitioner were more attention paid to the etiology of ocular disease, thus enabling the medical man to cooperate more fully with the ophthalmologist. But, on the whole, it is a sound book from which much is to be gained by careful perusal.

## Medicolegal

### Construction of Contract Between Physicians

(*State ex rel. Youngman v. Calhoun, Circuit Judge (Mo.), 231 S. W. R. 647*)

The St. Louis (Mo.) Court of Appeals says that certain property which was used both for his residence and for his office by the relator, a physician, was sold and conveyed by him and his wife, to another physician, with the agreement included in and as a part of the contract of sale that "the owners agree not to establish themselves as a practicing physician and surgeon within a radius of 5 miles of the above premises after Dec. 1, 1919, for a period of five years." Subsequently the relator opened an office and began making calls within the prohibited district, whereupon the other physician brought suit to enjoin him from maintaining the office and from practicing medicine and surgery in any manner with any former patients or any other persons living within the prohibited district. After that, suit was filed, but prior to the hearing therein, the relator, admitting that his new location was within the prohibited district, closed his office there, and made a tender of all fees he earned at the office, as well as the costs of the suit. On final hearing, he was enjoined from making calls within the district, or treating patients or residents of the district who might call at his new office, which had been established outside the district. Thereupon the relator filed this application for a writ of prohibition against the judge, and one was issued, which was finally made permanent, prohibiting the respondent judge from in any way undertaking to enforce against the petitioner the judgment or decree rendered by the respondent except so far as it enjoined the relator from opening or establishing an office for the practice of medicine or surgery within a radius of 5 miles of the property sold, for a period of five years from Dec. 1, 1919.

The phrase "to establish themselves as a practicing physician and surgeon," the court of appeals holds was not ambiguous. Considering these words as used in the contract as having an ordinary meaning, plain and unambiguous when read in connection with the other portions of the contract, it followed that extrinsic evidence as to their meaning was not necessary in this case, nor would such evidence be admissible on the trial of the case on its merits. However, the contract was clearly one in restraint of trade and personal liberty, and as such should not be construed to extend beyond its fair import.

What did the parties to this contract mean by the language in the bill of sale to the effect that the relator would not establish himself as a practicing physician and surgeon, etc.? After mature reflection the court can come to no other view than that the parties to the contract intended thereby that the relator should not maintain an office for the practice of medicine or surgery within the prescribed district, and nothing more. In other words, it was intended by this portion of the contract to restrain him from opening up an office as a practicing physician or surgeon at any point within 5 miles of the home which was sold under the agreement of sale. The court cannot read the language of this agreement as intending to

mean that he was not at any time within five years to call on or prescribe for any person living within a radius of 5 miles of his former home. Wherefore the court thinks it clear that the decree entered by the respondent, so far as it restrained and enjoined the relator, in his practice of medicine and surgery, from making calls within said prescribed district, or treating patients living within said district, or from treating former patients or residents of such district who might call at his office, when it was established outside the said district, went beyond the terms of the contract and was to that extent in excess of the jurisdiction of the respondent.

### Futile Contentions Under Harrison Narcotic Law

(*Hoyt v. United States (U. S.), 273 Fed. R. 792*)

The United States Circuit Court of Appeals, Second Circuit, in affirming a judgment of conviction of defendant Hoyt, a physician, holds that it availed him nothing that there was no proof in the record that the government had failed to secure full revenue for all narcotics dispensed by him. He was not charged in the indictment with having defrauded the United States of any revenue, and to sustain the conviction it was not necessary to show that the government had been defrauded. It is true that the Harrison act purports to be passed under the authority given Congress under Article 1, Section 8, of the constitution, which empowers it to lay and collect taxes, duties, imposts and excises. The raising of revenue is not, however, the sole purpose of the act. The statute has a moral as well as a revenue end in view. The revenue end is provided for in Section 1, and the moral end in Section 2. The fact that the motive which impelled Congress to enact Section 1 differed from the motive which led it to adopt Section 2 is immaterial, if it can be seen that the legislation enacted has some reasonable relation to the exercise of the taxing power given to Congress by the constitution. That it has such a relation has been decided by the supreme court. To sustain a conviction for a violation of Section 2 it is no more necessary to show a violation of Section 1 than it would be necessary to show a violation of Section 2 to sustain a conviction for a violation of Section 1. It cannot be seriously contended that any other conclusion is possible.

Nor does the court agree with the contention that the defendant's method of treatment of drug addiction was in itself wrongfully made the main issue in the case; that the defendant, as a physician, was himself entitled under the law to judge as to what narcotics should be dispensed to patients, without a review of his decision by a jury. It may be true, the court says, that a physician's method of treatment of drug addiction is a question to be determined by the physician himself, and not by a jury; but it can be true only so long as the physician is pursuing his method in his honest endeavor to effect a cure. If that is not his purpose, and he is dispensing the drug to keep the addict comfortable, he is violating the law, and whether he is doing the one thing or the other is a question the jury must decide. In determining the question as to whether the defendant was practicing his profession in good faith in an attempt to cure the addicts to whom he dispensed the drugs, or whether he was engaged in handling the prohibited drugs as merchandise, the jury was entitled to have before it information as to the quantity of the drugs purchased by him.

It was argued that error was committed in not permitting counsel for the defendant to bring out facts and the law in relation to the registration under the New York state law of certain of the addicts named in the indictment, and as to the possession by those addicts of state registration cards permitting them to obtain certain quantities of narcotics. It was said that the defendant should have been permitted to show that he dispensed the drugs only to persons holding such cards. But the court does not see that it was at all material whether the addicts had or had not complied with the state law, or whether the defendant had refused to treat any addicts who had not obtained such cards. The defendant was not being tried for any offense against the New York state law, but for the violation of a federal act.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Diseases of Children, Chicago

December, 1921, 22, No. 6

- \*Blood Studies in New-Born. W. P. Lucas, B. F. Dearing, H. R. Hoobler, A. Cos, M. R. Jones and F. S. Smyth, San Francisco.—p. 525.
- \*Clinical Significance of Calcium Concentration in Serum of Children and Possible Errors in Its Determination. B. Kramer, F. F. Tisdall and J. Howland, Baltimore.—p. 560.
- \*Genital Tuberculosis in Male Children. J. D. Barney, Boston.—p. 565.
- \*Traumatic Diaphragmatic Hernia in Girl Eight Years of Age. M. B. Gordon and D. L. Golann, Brooklyn.—p. 579.
- Isoagglutinins in Blood of New-Born. B. B. Jones, Boston.—p. 586.
- Isohemolysins in Human Blood, with Especial Reference to Blood of New-Born. B. B. Jones, Boston.—p. 598.
- \*Modes of Infection in Pyelitis. H. F. Helmholtz, Rochester, Minn.—p. 606.
- Studies of Infant Feeding. XV. Calcium of Cow's Milk in Its Relation to Digestion and Absorption of Casein, Protein Curds in Stools. A. W. Bosworth, Boston.—p. 613.

**Blood Studies in New-Born.**—The morphology, chemistry, coagulation and pigment metabolism of the blood of the normal new-born infant was studied by Lucas and his associates and the results are here given.

**Significance of Calcium in Blood of Children.**—A large number of calcium determinations on the serum of normal children shows a marked constancy in the concentration of this element. In only two conditions commonly met with, tetany and renal insufficiency, is the concentration of calcium markedly reduced. In no condition has it been found increased above normal limits. There are many possibilities of error in methods for the determination of small amounts of calcium. Some of the more common of these are discussed by Kramer, Tisdall and Howland.

**Genital Tuberculosis in Male Children.**—Eleven cases, representing a percentage incidence of 2.74 are analyzed by Barney. Both epididymes were found to be involved at the time of entrance in one case (infant, aged 9 months); in another case (boy, aged 8 years) the second side became involved twenty-seven months after removal of the epididymis first affected, while in a third case the involvement of the second side took place within three months after excision of its tuberculous mate (orchidectomy). The remaining eight cases showed about an equal distribution of the disease between the left and right sides.

**Traumatic Diaphragmatic Hernia.**—In the case reported by Gordon and Golann the small and large intestine, stomach and left lobe of the liver had all worked their way through a large rent in the diaphragm running anteroposteriorly on the left side. The history of an injury to the abdomen was clear cut and positive in this case and yet no one had coupled the clinical picture with the injury until a roentgen-ray examination was made. Operation was successful in this case.

**Modes of Infection in Pyelitis.**—Helmholtz makes an analytic survey of this subject and concludes with the statement: only by a careful correlation of the findings obtained by bacteriologic and pathologic study, as well as by experimental work, can we hope to reach a better understanding of this problem.

#### American Journal of Obstetrics and Gynecology, St. Louis

December, 1921, 2, No. 6

- \*Vulval and Vaginal Cancer Treated by Filtered and Unfiltered Radium Emanation. H. Bailey and H. J. Bagg, New York.—p. 587.
- \*Torsion of Cecum: Review of Literature and Report of Case. S. A. Chalfant, Pittsburgh.—p. 597.
- Endocervicitis and Eversion and Nasal Cautery Tip. R. L. Dickinson, New York.—p. 600.
- Abdominal Abortion. F. S. Newell, Boston.—p. 606.
- \*Syphilis and Childbirth. E. A. Schumann and C. S. Barnes, Philadelphia.—p. 612.
- Pelviography After Fabre's Method. J. W. Bell, Minneapolis.—p. 616.
- Fibromyoma of Uterus Accompanied by Hyperthyroidism. W. M. Thompson, Chicago.—p. 621.

- Preoperative Study and Preparation of Gynecologic Patients. W. T. Dannreuther, New York.—p. 628.
- Case of Large Meningocele Producing Dystocia, Delivery by Porro Operation. L. Peters, Columbia, S. C.—p. 636.
- Lateral Partial Glandular Hermaphroditism. J. F. Baldwin, Columbus, Ohio.—p. 640.
- Case of Interstitial Pregnancy. K. S. Kennard and R. E. Walsh, New York.—p. 642.
- Further Experiences with Aspiration and Pressure Method of Treating Mammary Abscesses. J. P. Gardiner, Toledo, Ohio.—p. 644.
- Recurrent Abdominal Pregnancy. W. H. Condit, Minneapolis.—p. 645.

**Cancer of Vulva and Vagina Treated by Radium.**—Bailey and Bagg state positively that the original lesion in vulval cancer may be eliminated completely without loss of any considerable amount of normal tissue and with comparatively little pain by the use of imbedded radium emanations. Wherever possible, the radium tubes surrounding the lesion are inserted through normal tissue. The imbedded radium produces a prolonged, gradual, reactive inflammation which is effective in checking the extension of the disease. The experience with various doses of imbedded unfiltered radium emanation has shown that if the tubes are of 5 mc. strength, the elimination of the tumor is associated with extensive sloughing and prolonged and serious discomfort; whereas the smaller dose of about 0.5 mc., accomplishes as much for the removal of the growth, and yet without sloughing and with little pain. Except in the most minute lesion, it is not possible to arrange the placing of the tubes so that all the cancer cells are effectively radiated. Filtered radium to further check the growth of the injured, or partly damaged cells, is necessary as an adjunct to the implantation of bare tubes in vulval and vaginal cancers.

**Torsion of Cecum.**—The case cited by Chalfant, shows that torsion must be considered in making a diagnosis in obscure cases of intestinal obstruction. This is especially the case in patients presenting a history of obstinate constipation with previous attacks of severe pain in the upper abdomen.

**Syphilis and Childbirth.**—In 661 cases, in which Wassermann tests had been performed on the mother, there were 192 which were reported positive, or an incidence of maternal syphilis of 27.8 per cent. Of the 192 women having positive Wassermann reactions, nineteen stillborn infants were delivered, or 10 per cent. However, among this same 192 women, 149, or 78 per cent., gave birth to living children. A number not included left the hospital before delivery. (This would increase both classes about proportionately.) Therefore of every five births in supposedly syphilitic women, four were living infants apparently healthy, to one stillborn. Only eight stillbirths occurred in the 469 negative Wassermann mothers, thereby showing the importance of syphilis as a causal factor in stillbirths. Twenty-nine syphilitic women gave birth to twenty-nine Wassermann positive or macerated infants, showing clearly the definite and intensely transmissible nature of the disease. But on the other hand twenty-six syphilitic, or at least Wassermann positive, women gave birth to twenty-six children presenting no clinical evidence of syphilis whatever, certainly to the time of their discharge from the hospital, and all having negative Wassermann reactions based on blood taken from the cord at the time of delivery. There were then practically as many non-syphilitic as syphilitic infants born to mothers reacting to the Wassermann test. Six women with negative Wassermann reaction and with neither definite history nor physical signs of having or having had syphilis, gave birth to children having strongly positive Wassermann reactions.

#### American Journal of Ophthalmology, Chicago

December, 1921, 4, No. 12

- Phlegmon of Conjunctiva Following Operation. F. A. Kiehle, Portland, Ore.—p. 881.
- Gunshot Wounds of Brain with Visual Field Defects. G. E. Bellows, Kansas City, Mo.—p. 884.
- Peripheral Iridotomy (Curran) in Treatment of Glaucoma. H. Gifford, Omaha.—p. 889.
- Present Status of Keratoplasty. H. S. Gradle, Chicago.—p. 895.
- Mature and Immature Senile Cataract. H. Smith, Amritsar, India.—p. 900.
- Uveitis with Dense Vitreous Opacities; Partial Recovery. R. H. Buck, Chicago.—p. 906.
- Specific Precipitin Reaction of Lens. L. Hektoen, Chicago.—p. 909.
- Cataract Operations in Aged. S. G. Higgins, Milwaukee.—p. 911.



- Eye Complications of Diseases of Childhood. H. C. Peabody, Webster, S. D.—p. 914.  
 Use of Iodin in Corneal Ulceration. H. W. Woodruff, Joliet, Ill.—p. 917.  
 Panophthalmitis Following Perforation of Globe by a Piece of Burst Button. W. G. M. Byers, Montreal, Que.—p. 917.  
 Care of Eye Following Removal of Small Foreign Bodies from Cornea. W. C. Bane, Denver.—p. 917.  
 Follicular Conjunctivitis or Trachoma? J. R. Ferrell, Waco, Tex.—p. 918.  
 Panophthalmitis of Endogenous Origin. F. S. Cook, Eau Claire, Wis.—p. 919.

## Annals of Otolaryngology and Rhinology, St. Louis

September, 1921, 30, No. 3

- Treatment of Multiple Papillomas of Larynx in Children. G. B. New, Rochester, Minn.—p. 631.  
 Endonasal Operation of Lacrimal Sac. W. B. Chamberlin, Cleveland.—p. 643.  
 Localized Pulmonary Suppuration, Treated by Endobronchial Irrigation. C. J. Imperatori, New York.—p. 665.  
 Invisible Scar Method in Cosmetic Nasal Surgery. I. Frank and J. F. Strauss, Chicago.—p. 670.  
 Accessory Sinuses as Etiologic Factor in Bronchiectasis. W. V. Mullin, Colorado Springs, Colo.—p. 683.  
 Management of Recent Fractures of Nose. L. Cohen, Baltimore.—p. 690.  
 Resonators as Possible Aid in Tuning Fork Tests—Preliminary Report. R. Sonnenschein, Chicago.—p. 703.  
 Nonsuppurative Neurolabyrinthitis; Special Reference to Focal Infection and Syphilis as Causative Factors. J. L. Maybaum, New York.—p. 719.  
 Case of Labyrinthitis and Cerebellar Abscess. C. E. Perkins, New York.—p. 740.  
 Pulsating Sphenoiditis. H. L. Pollock, Chicago.—p. 744.  
 Case of Intranasal Epithelioma Cured by Excision and Radium. Literature. D. Roy, Atlanta, Ga.—p. 748.  
 Cancer of Larynx. N. B. Corson, St. Louis.—p. 761.  
 Roentgenology of Mastoids with Conclusions Based on One Hundred Cases. F. R. Spencer, Boulder, Colo.—p. 770.

## Archives of Internal Medicine, Chicago

December, 1921, 28, No. 6

- \*Blood in Tetrachlorethane Poisoning. G. R. Minot and L. W. Smith, Boston.—p. 687.  
 \*Effect of Extract of Posterior Lobe of Pituitary on Basal Metabolism in Normal Individuals and in Those with Endocrine Disturbances. C. A. McKinlay, Minneapolis.—p. 703.  
 Capillary Poisons and Acidosis. G. B. Wallace and E. J. Pellini, New York.—p. 711.  
 \*Local Desensitization in Hypersensitive Individuals and Its Bearing on Prevention of Hay-Fever. G. M. Mackenzie and L. B. Baldwin, New York.—p. 722.  
 \*Primary Carcinoma of Lungs. T. S. Moise, New Haven, Conn.—p. 733.  
 \*Experimental Diabetes Insipidus. P. Bailey, Boston, and F. Bremer, Brussels.—p. 773.  
 Glycemia, Glycuresis and Water Excretion in Obesity. C. Beeler and R. Fitz, Rochester, Minn.—p. 804.  
 \*Significant Chemical Changes in Blood Coincident with Malignant Tumors. J. A. Killian and L. Kast, New York.—p. 813.  
 \*Urea Concentration Test for Kidney Function. I. M. Rabinowitch, Montreal, Can.—p. 827.  
 \*Action of Nitrites on Coronary Circulation. F. M. Smith, Chicago.—p. 836.  
 Simple and Accurate Metabolism Spirometer. C. C. Guthrie, Pittsburgh.—p. 841.  
 \*Effect of Ingestion of Food-Substances on Respiratory Exchange in Pulmonary Tuberculosis. W. S. McCann, New York.—p. 847.

**Blood in Tetrachlorethane Poisoning.**—A study by Minot and Smith of the blood of sixty-eight persons exposed to a greater or lesser degree to tetrachlorethane, indicates that blood examination is of value in the prevention of tetrachlorethane poisoning and in the diagnosis and prognosis of poisoning by this substance. The blood changes usually can be observed before clinical symptoms develop. The blood abnormalities include (a) a progressive increase of large mononuclear cells, often reaching 40 per cent. This is the most important change. (b) The appearance of many immature large mononuclears. (c) A slight elevation in the white count. (d) A progressive but slight anemia. (e) A slight increase in the number of platelets. A percentage of large mononuclear white cells above 12 is the first sign of a reaction to tetrachlorethane, and is a signal for close observation of that person. The presence of a considerable number of young large mononuclear cells, some formed and many broken, is to be considered a indicating a severer condition than when the same number of more mature large mononuclears are present.

**Effect of Feeding Posterior Lobe of Pituitary on Metabolism.**—The results obtained by McKinlay show that normal persons responded quite constantly with increased basal metabolism following the subcutaneous injection of pituitary extract. In a small series of cases with hypothyroidism, the basal metabolism was diminished rather than increased, which suggests that pituitary extract is effective in accelerating heat production only in the presence of a normally functioning thyroid gland. In four cases with subnormal basal metabolism in which clinical evidence of myxedema was lacking and preponderance of influence of endocrine glands other than thyroid was suggested, the positive response to pituitary extract was present. The increased acceleration of basal metabolism in a group of normal individuals following the subcutaneous injection of pituitary extract one week after an injection of thyroxin is interpreted as suggesting a synergic action between thyroxin and pituitary extract.

**Local Desensitization in Hay-Fever.**—Observations are reported by Mackenzie and Baldwin which indicate that in individuals manifesting cutaneous hypersensitiveness, the reactivity of the skin may be abolished locally by repeatedly applying to the same skin area the substance to which the individual is hypersensitive. The reactivity of the skin at the exhausted site may not return for three days, or perhaps longer. The exhaustion appears to be specific. The extent of the area of the exhaustion is strictly limited to the site of the reaction. The nonspecific cutaneous reaction produced by the nonantigenic substance histamin is not only inexhaustible but progressively increases with each repetition of the application to the same site. The possibility that the results reported indicate a genuine local desensitization is discussed. The bearing of the results on the treatment of hay-fever and other forms of allergic rhinitis is discussed.

**Primary Carcinoma of Lung.**—The five cases reported by Moise occurred in a consecutive series of 375 postmortem examinations among which there have been a total of twenty-nine carcinoma cases. Although the series is small, these figures, 1.38 per cent. of all necropsies and 17 per cent. of all carcinomas, are high in comparison with those usually given. Three of the tumors were in males and two in females. One case showed no metastases outside of the thoracic cavity. The remaining four cases showed widespread metastases. All five cases showed evidence of invasion and spread through the lymphatic channels, and four showed evidence of extension through the air spaces. Four of the cases afforded the interesting and unique observation of cancer cells extending through the alveolar walls.

**Experimental Diabetes Insipidus.**—Lesion of the tuber cinereum has produced in two dogs a cachexia "hypophyseopriva" with acute genital atrophy and in two other dogs an insidiously developing adiposogenital dystrophy. The integrity of the pituitary was in each case verified histologically by Bailey and Bremer. The same dogs had persistent polyuria. Glycosuria was an inconstant result of the lesion and seemed to depend probably on the state of nutrition of the animal.

**Changes in Blood in Malignant Tumors.**—Of the 119 cases of malignancy examined by Killian and Kast, about 80 per cent. showed a definite increase in the uric acid concentration of the blood, and about 60 per cent. an increase of the urea nitrogen and ceratinin, indicating a more or less severe impairment of kidney function. This impairment of renal function was found invariably in general abdominal carcinomatosis, in about 90 per cent. of cases of carcinoma of the bladder, prostate, uterus and rectum, in about 50 per cent. of cases of carcinomas of the stomach, and rarely in external tumors. In all cases of nonmalignant tumors no such disturbance of kidney function has been noted. The accumulation of the nitrogenous waste products in the blood was paralleled by a decrease in phenolsulphonephthalein excretion, but many of the other signs indicative of nephritis, e. g., hypertension and changes in the ocular fundi, were lacking. The extent of the renal insufficiency was independent of the age of the patients and the associated anemia. Disturbances of carbohydrate tolerance were found to be dependent on the kidney involvement rather than on the malignancy itself. An acidosis was encountered in many instances, particularly in cases showing nitrogen retention. A preoperative chemical exami-



nation of the blood is of great prognostic value in malignancy, since it serves as an excellent index of renal function and also of any acidosis.

**Value of Tests for Kidney Function.**—No one single test for kidney function Rabinowitch says can be used for the purpose of renal diagnosis, to the exclusion of all others. To properly interpret the results of any test, a correlation with the clinical picture is of paramount importance.

**Action of Nitrites on Coronary Circulation.**—The action of nitroglycerin on the collateral circulation between distal branches of the left coronary artery was studied by Smith in fifteen dogs. In five instances the area of cyanosis that appeared distal to the point of closure of one of these vessels definitely faded following the administration of nitroglycerin. In six the results were questionable and in four they were apparently negative. The observations in the former five indicated that there was a communication with the adjacent vessels which was dilated by the nitroglycerin. In the latter ten it was concluded that very little collateral circulation existed. In fourteen dogs the rate of blood flow from distal branches of the left coronary artery was determined before and after the administration of sodium nitrite. In six there was a definite increase in the outflow. In three the rate remained about the same and in four it was decreased.

**Action of Food on Respiratory Exchange in Tuberculosis.**—The total pulmonary ventilation of five cases of advanced pulmonary tuberculosis studied by McCann was approximately twice that of five normal controls. The percentage of carbon dioxid produced and of oxygen absorbed, in terms of expired air, was much reduced as compared with normals. The alveolar ventilation in the tuberculous patients was greater than that of the normal subjects, as was the ratio of alveolar ventilation to the volume of carbon dioxid expired. The ingestion of protein food increased both heat production and total pulmonary ventilation in a corresponding degree in both tuberculous patients and controls. In the form of fat the greatest number of calories may be ingested with the least effect on the pulmonary ventilation. Carbohydrates increase the ventilation out of all proportion to their effects upon the general oxidative processes and heat production. This is believed to be due to the relatively greater quantities of carbon dioxid eliminated during carbohydrate oxidation, in other words, to the higher respiratory quotient.

### Arkansas Medical Society Journal, Little Rock

December, 1921, 18, No. 7

Cardiac Neuroses. G. M. Eckel, Hot Springs.—p. 137.

Methods of Tonsillectomy. J. H. Buckley, Fort Smith.—p. 142.

### Boston Medical and Surgical Journal

Dec. 22, 1921, 185, No. 25

Review of Classification of Double Monsters; Report of Case. W. Grant, Worcester.—p. 746.

\*Posttyphoid Chondritis of Ribs: Two Cases. F. J. Cotton, Boston.—p. 749.

Vulvovaginitis. A. K. Paine, Boston.—p. 750.

**Posttyphoid Chondritis of Ribs.**—The two cases reported by Cotton were relatively severe, and both showed *B. typhosus* in the wound. In one an unusually deep site of infection was discovered. In both there was a persistent infection in the wound, while in one case *B. typhosus* was present in the stool as well for a time.

### Johns Hopkins Hospital Bulletin, Baltimore

December, 1921, 32, No. 370

\*Experimental Inoculation of Human Throats with Virulent Diphtheria Bacilli. C. G. Guthrie, B. C. Marshall and W. L. Moss, Baltimore.—p. 369.

Significance of "Hemolytic Influenza Bacilli." A. L. Bloomfield, Baltimore.—p. 378.

Experimental Studies on Hydrocephalus. J. C. Nanagas, Baltimore.—p. 381.

Sulphemoglobinemia. V. R. Mason and F. D. Conroy, Baltimore.—p. 391.

Studies on Musculature of Mature Graafian Follicle of Sow. M. S. and A. F. Gutmacher, Baltimore.—p. 394.

**Experimental Inoculation with Diphtheria Bacillus.**—Virulent diphtheria bacilli present in the throats of healthy carriers are capable of producing clinical diphtheria, and do not differ from those obtained from patients with the disease.

Virulent diphtheria bacilli retain their characteristics despite long residence in the human throat or transfer from one human being to another. The guinea-pig test is a reliable index of the inherent ability of diphtheria bacilli to cause clinical diphtheria in susceptible human beings. The Schick test is a reliable index of the presence or absence of antitoxic immunity against diphtheria. Experimental diphtheria in human beings has a short incubation period, produces marked constitutional effects, and is accompanied by a sharp febrile reaction. It may be cured promptly by the early injection of antitoxin in adequate dosage.

### Journal of Immunology, Baltimore

November, 1921, 6, No. 6

\*Reaction of Rat to Diphtheria Toxin: With Observations on Technic of Rocmer Method of Testing Diphtheria Toxin and Antitoxin. A. F. Coca, E. F. Russell and W. H. Baughman, New York.—p. 387.

\*Action of Bacterial Culture Products on Phagocytosis. A. B. Wadsworth and E. N. Hoppe, Albany, N. Y.—p. 399.

Action of Leukocytes and Brain Tissue on Diphtheria and Tetanus Toxins. A. B. Wadsworth and R. Vories, Albany, N. Y.—p. 413.

Specific Antigenic Properties of Four Groups of Human Erythrocytes. S. B. Hooker and L. M. Anderson, Boston.—p. 419.

\*Influence of Temperature on Agglutination of Red Blood Corpuscles. F. Jervell, Kristiania, Norway.—p. 445.

**Reaction of Rat to Diphtheria Toxin.**—Coca and his associates found that the rat is capable of the production of antitoxin on the repeated injection of diphtheria toxin. The resistance of the rat to diphtheria toxin is not due to the presence of normal antitoxin, but to the property of the cells of preventing the toxin from entering them or of attaching itself to them.

**Action of Bacterial Culture Products on Phagocytosis.**—The action of culture broths of thirteen widely differing pathogenic and saprophytic bacterial species was tested by Wadsworth and Hoppe, on phagocytes in vitro. In every case the phagocytic power of the leukocytes was inhibited in a high degree. Tests, chiefly with a standard diphtheria toxin, were made to determine some facts concerning the nature of this substance depressing to phagocytic activity and its relation to the true toxins. These tests showed that its action was immediate, and could not be neutralized by the ordinary antisera tested, nor destroyed by exposure to the degrees of heat or light used in the experiments. Variations in the constitution of the culture broths, which greatly affected true toxin production caused no variation in the production of the depressing substance. The depressing action of young culture broths was found to be less marked than that of older cultures. It was also found that digestion with proteolytic enzymes either wholly or partially destroyed the depressing element. The substance could be isolated by adsorbing it to leukocytes and then washing it from them with salt solution. After removal of the substance the leukocytes regained their phagocytic activity.

**Influence of Temperature on Agglutination of Red Blood Cells.**—The experiments made by Jervell show a marked difference in the agglutination of red corpuscles at low and at high temperatures. The most pronounced agglutination is obtained in the ice chest. It is shown that this is due to a quicker or more nearly complete adsorption of agglutinin at low than at high temperature. After adsorption at 8 degrees the corpuscles again lose part of the agglutinin when brought into higher temperatures. The experiments seem to indicate that the maximal adsorption of agglutini is different at different temperatures and more nearly complete at the low than at the high temperatures. When, therefore, the adsorption has been carried out at a low temperature and the corpuscles after that are placed at a higher temperature, they can retain only the quantity of agglutinin that corresponds to the maximum for the respective temperature and accordingly lose agglutinin until this maximum is reached.

### Journal of Infectious Diseases, Chicago

December, 1921, 29, No. 6

\*Gonococcus and Gonococcal Infections. M. W. Cook and D. D. Stafford, Berkeley, Calif.—p. 561.

Diphtheria Carriers Among Massachusetts School Children. E. Beckler, H. Gillette and M. Parker, Boston.—p. 577.

\*Dysentery-Like Diseases (Paradysentery, Paratyphoid) in Children and Their Causes. K. Mita, Fukuoka, Japan.—p. 580.



- Induced Morphologic Variation in *B. Coli*. F. M. Scales.—p. 591.  
Quantitative Relations Between Amboceptor and Serum of Complement-Deficient Guinea-Pigs. E. E. Ecker, Cleveland.—p. 611.  
\*Some Characteristics of *B. Chauvoei*. L. W. Goss, R. E. Barbarin and A. W. Haines, Detroit.—p. 615.  
Studies on Complement Fixation. II. Velocity of Fixation of Complement in Wassermann Test. R. L. Kahn and R. M. Olin, Jr., Lansing, Mich.—p. 630.  
Id. III. Effect of Heat on Complement-Fixing Antibodies. R. L. Kahn, S. R. Johnson and A. G. Boyd, Lansing, Mich.—p. 639.  
Id. IV. Affinity of Sheep Corpuscles for Antisheep Hemolysin. R. L. Kahn and D. S. Lyon, Lansing, Mich.—p. 651.  
Pathogenicity of *B. Abortus* and *B. Melitensis* for Monkeys. Studies on Genus *Brucella* Nov. Gen. III. E. C. Fleischner, M. Vecki, E. B. Shaw and K. F. Meyer, San Francisco.—p. 663.

**Gonococcus Studies.**—Gonococcus stock cultures were found by Cook and Stafford to grow satisfactorily for all routine work on testicular agar. Chocolate blood testicular agar was found to be a useful medium for increasing the vitality of a weakly growing culture. Isolation of cultures from acute cases of anterior urethritis in men was most successfully accomplished on chocolate blood testicular agar. No pure cultures of gonococci were isolated from chronic cases of gonorrheal endocervicitis, although single colonies of organisms morphologically typical gonococci were obtained on plates of hydrocele testicular agar containing certain members of the triphenylmethane series of dyes as an inhibitor of contaminating organisms. While the alexin fixation test serves as an aid in diagnosis, the authors believe it should be considered rather as confirmatory evidence than as an independent basis of diagnosis. It is of little value in early cases. A nonspecific reaction was obtained on the intracutaneous injection of a preparation of gonococci. A like reaction was obtained in gonorrheal patients on the injection of a preparation of meningococci. No typing of strains of gonococcus was obtained by means of the alexin fixation and agglutination reactions or by means of the method of absorption of agglutinins.

**Cause of Dysentery-Like Diseases.**—Investigations have suggested to Mita that at least one fourth of the cases of dysentery and dysenteric affections are traceable to organisms not of the true dysentery type. Of the organisms producing dysenteric symptoms, aside from the true dysentery bacillus, in the majority of cases the paradysentery bacillus described was found. Mita suggests that the disease caused by paradysentery bacilli group should be termed paradysentery.

**B. Chauvoei.**—This paper deals with the method of isolation of *B. chauvoei* from infected tissue and with its differentiation from the other anaerobes frequently found in black-leg and black-leg-like affections.

### Journal of Nervous and Mental Diseases, New York

November, 1921, 54, No. 5

- \*A Correlative Study of Endocrine Imbalance and Mental Diseases. N. D. C. Lewis and G. R. Davies, Washington, D. C.—p. 385.  
\*The Abdominal Crises of Migraine. J. A. Buchanan, Rochester, Minn.—p. 406.  
\*Sachs-Georgi Reaction in Neurosyphilis. S. A. Levinson and W. F. Peterson, Chicago.—p. 413.

**Endocrine Imbalance and Mental Disease.**—Lewis and Davies report on an investigation made to determine the relations, if any, between the physical manifestation, blood chemistry and the mental syndromes in these conditions. In this, the first instalment of the report, eight cases are analyzed.

**Abdominal Crises of Migraine.**—Seven cases in which periodic attacks of abdominal pain formed a part of the migraine characteristic are reported on by Buchanan. He states that it is impossible to make a differential diagnosis in these cases in the absence of a personal or family history of migraine. Four of the patients had been operated on elsewhere and one was operated on in the Mayo Clinic without the discovery of an organic lesion capable of explaining the occurrence of the seizures.

**Sachs-Georgi Reaction in Neurosyphilis.**—In an examination of the serum of the spinal fluid of 100 cases of neurosyphilis, Levinson and Peterson found an agreement of 78 per cent. between the Wassermann and the Sachs-Georgi reaction. In eighteen cases the Wassermann was negative and the Sachs-Georgi was positive.

### Medical Record, New York

Dec. 24, 1921, 100, No. 2668

- \*Abdominal Symptoms and Signs of Thoracic Disease. H. Brooks, New York.—p. 1103.  
Syphilis from Standpoint of Clinician. S. Feldman, New York.—p. 1107.  
How to Determine Severity of a Case of Morphinism. C. B. Pearson, Catonsville, Md.—p. 1113.  
Occipitoposterior Presentations. H. D. Fair, Muncie.—p. 1118.  
Injuries to Semilunar Cartilage of Knee. J. Eaves and P. Campiche, San Francisco.—p. 1120.

**Abdominal Symptoms of Thoracic Disease.**—Harlow Brooks discusses the most frequent forms of thoracic lesions which are commonly confused because of their signs and symptoms with disease of the abdomen. He comments particularly on the frequency with which sudden death from cardiac disease is diagnosed as "acute indigestion." A story of acute abdominal pain of sudden onset with prostration, nausea and vomiting when due to thoracic disease is not an indication of the acuteness of the mediastinal or cardiac lesion. In very many instances only the onset of symptoms is acute; the lesions may be chronic or of very long standing. The termination is the only acute phase of the condition, for close analysis of the history will usually discover abundant premonitory warnings. Extensive necropsy experience has convinced Brooks that very many cases of postoperative pneumonia in abdominal cases were really due to failure of diagnosis of a developing pneumonia, due to the predominance of its abdominal signs and symptoms. In most of these cases a reasonable delay would have given the correct diagnosis. One of the most frequent methods of onset in chronic ulcerative pulmonary tuberculosis is with gastro-intestinal signs and symptoms. The importance of recognizing the fact that a complete picture of gastro-intestinal symptoms may indicate pulmonary tuberculosis must be constantly borne in mind, for every gastro-intestinal clinic is constantly seeing these cases. Brooks emphasizes the very great necessity of close observation of all these cases for a reasonable period of time before the thoracic origin of such a symptom complex becomes so certainly excluded as to determine operative interference.

### New York Medical Journal

Dec. 21, 1921, 114, No. 12

- Man Galen and His Times. J. Wright, Pleasantville.—p. 677.  
Obscure Mastoiditis. S. MacC. Smith, Philadelphia.—p. 683.  
Surgical Endothermy in Accessible Malignancy. G. A. Wyeth, New York.—p. 685.  
Steinach's Method of Rejuvenation. H. Benjamin, New York.—p. 687.  
Restoration of Hand Injuries by Plastic Surgery. J. E. Fuld, New York.—p. 692.  
Metastatic Infectious Vertebral Arthritis from Foci in Tonsil and Left Antrum of Highmore. E. M. Schwartz, New York.—p. 699.  
Inflammatory Discharges from Lower Female Genital Tract. T. H. Cherry, New York.—p. 700.  
Clinical Studies of Lethargic Encephalitis. R. S. Reeves, Philadelphia.—p. 702.  
Rheumatism and Allied Affections. A. C. Geyser, New York.—p. 707.  
\*Acute Yellow Atrophy of Liver Complicating Acute Appendicitis. M. Behrend, Philadelphia.—p. 709.  
Prevention of Venereal Diseases. J. Broadman, New York.—p. 710.  
Vitiligo and Its Relationship to Syphilis. C. G. Cumston, Geneva, Switzerland.—p. 712.  
Venereal Disease: Public Peril. W. R. Riddell, Toronto.—p. 714.  
Solution of Sodium Iodid for Use in Urologic Roentgen-Ray Studies. M. Stern and I. S. Ritter, New York.—p. 715.

**Acute Yellow Atrophy Complicating Appendicitis.**—Behrend operated on a girl, aged 16, for acute appendicitis under chloroform anesthesia. The appendix was gangrenous and the pelvis contained pus. The abdomen was drained. For the first twenty-four hours the temperature ran a normal course. The following morning the skin was slightly jaundiced, there was a rise of temperature, the pulse was good though a little rapid. The patient vomited a little and during the day she became delirious, the temperature rose, the pulse weakened, and she died early on the morning of the third day. The diagnosis of acute yellow atrophy of the liver was confirmed at necropsy. It showed the liver pale yellow in color, not especially smaller in size. It resembled the liver of fatty degeneration, which was confirmed microscopically.



## FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### Archives of Radiology and Electrotherapy, London

November, 1921, 26, No. 6

- British Association of Radiology and Physiotherapy. How Can It Best Serve Interests of All Its Members? Hernaman-Johnson.—p. 173.  
Some Points in Diagnosis of Hilum Tuberculosis in Adult by Means of Roentgen Rays. S. Melville.—p. 178.  
Congenital Synostosis of Radius and Ulna. (Eight Cases). C. P. G. Wakeley.—p. 185.

### British Medical Journal, London

Dec. 10, 1921, 2, No. 3180

- Surgeon as Pathologist. C. J. Bond.—p. 973.  
\*Treatment by Inflation with Oxygen of Tuberculous Affections. E. Rost.—p. 978.  
\*Persistent Cloaca with Imperforate Anus as a Cause of Fetal Ascites. J. N. Cruickshank.—p. 980.  
Curettage and Treatment of Uterine Hemorrhage. B. Whitehouse.—p. 981.  
Position of Medical Practitioner Called in to Attend a Case of Procured Abortion. J. Campbell.—p. 985.  
Caesarean Section in Case of Prolapsed Cord. J. Paton.—p. 987.  
Esophageal Tumor of Thyroid Tissue. H. L. Whale.—p. 987.

**Injection of Oxygen in Tuberculous Peritonitis.**—Rost reports his further experiences with this form of therapy in tuberculous peritonitis, psoas abscess, tuberculous joints, chronic synovitis, fibrous ankylosis, pyemic abscess and infected compound fracture of the radius. It would appear that this form of treatment may be applied (1) when it has a mechanical effect only, as in synovitis and fibrous ankylosis; (2) when it has a therapeutic effect only, as in the flushing of wounds and in the treatment of psoas abscess, and (3) when it has both a therapeutic and a mechanical effect, as in the treatment of tuberculous joints and tuberculous peritonitis. The cleanliness of the method, the ease of its adoption and its simplicity are emphasized.

**Persistent Cloaca with Imperforate Anus Causes Ascites.**—A case is described by Cruickshank in which extreme abdominal distension in a four and a half months' fetus led to dystocia. From the postmortem findings it is concluded that the apparent "fetal ascites" was due to the presence of a greatly distended persistent cloaca. The presence of imperforate anus and other anomalies is demonstrated. The etiology is discussed and a short review of the literature is made.

Dec. 17, 1921, 2, No. 3181

- \*Respiratory Phenomena in Nervous Disease. J. P. Stewart.—p. 1017.  
Some Causes of Our C 3 Population. T. E. K. Stansfield.—p. 1020.  
\*Bactericidal Action of Gastric Juice on Bacillus Tuberculosis. J. Inkster and S. R. Gloyne.—p. 1024.  
\*New Operation for Inguinal Hernia. G. L. Cheatle.—p. 1025.  
Loose Cartilage. V. Pennell.—p. 1026.  
Modern Dietetic Treatment of Diabetes Mellitus. E. P. Baumann.—p. 1027.  
Conservative Treatment of Compound Fracture of Ankle. R. S. Foss.—p. 1031.  
Emetine in Japanese Bilharzia Disease. F. G. Cawston.—p. 1031.

**Respiratory Symptoms in Nervous Diseases.**—Stewart discusses the respiratory symptoms in cerebral lesions, bulbar lesions, spinal cord lesions, peripheral nerve lesions, muscular affections, spasmodic respiratory affections, the various respiratory phenomena met with in hysteria and finally the interesting group of respiratory tics or habit spasms which occur in highly strung, often highly intelligent individuals of psychasthenic nervous constitution.

**Action of Gastric Juice on Tubercle Bacillus.**—Gastric juice removed from the stomachs of persons free from gastro-intestinal disease, at various intervals of time after an oatmeal test meal, showed very little power of destroying (a) tubercle bacilli in sputum which had been exposed to it for ninety minutes, and (b) tubercle bacilli in mouth washes which had been exposed to it for ninety and 180 minutes, respectively. In one case a total acidity of 62, in another of 54.1, and in a third of 24 failed to destroy the bacillus. Inkster and Gloyne admit that the gastric secretion may possibly have destroyed the tubercle bacilli in a very weak emulsion to which it was exposed under similar conditions, but the number of bacilli used (100) was so small that it cannot be considered a fair

test, and even the control test with this weak emulsion proved negative to a guinea-pig.

**New Operation for Inguinal Hernia.**—Several cases presenting difficulties in the efficient excision of the sac led Cheatle to devise a new method by which these and other troubles could be dealt with easily and successfully. A transverse skin incision 4 or 5 inches long is made 1½ inches above the symphysis pubis. Its center corresponds with the middle line. A transverse incision is made in the aponeurosis of the rectus abdominis of both sides, care being taken not to injure either linea semilunaris. The linea alba is undercut upward and downward, to within 1 or 2 inches of the umbilicus, and to the symphysis, respectively; in doing so the sheath of each pyramidalis muscle will be opened. The opening thus made in the aponeurosis is retracted up and down and the subperitoneal tissue exposed by separating the abdominal muscles in the middle line. The peritoneum and its contents are pushed up on both sides, and if necessary kept up by packing. Two retractors are inserted; they should have long, separate and blunt prongs. The lower retractor should pull the abdominal wall downward, outward, and forward on the side of the operation. The upper retractor pulls the structures outward. The deep epigastric artery and vein are delimited and separated from the inner part of the neck of the sac. The spermatic veins and vas deferens, with its vessels, are separated from the whole length of the exposed sac. Having cleared the sac, it is pulled out of the canal by gentle continuous traction in the direction in which it lies. If there are no indications of the possibility of its easy extraction, the sac is cut and the canal portion replaced. The remains of the sac in the subperitoneal space are then radically excised. The neck of the sac, including part of the parietal peritoneum, is then transfixed and removed.

### Glasgow Medical Journal

December, 1921, 96, No. 6

- \*War Psychoses—Infective-Exhaustive Group. D. K. Henderson.—p. 321.  
Practical Application of Determination of Respiratory Exchange in Health and Disease. G. B. Fleming.—p. 337.  
Stovain Anesthesia. J. Taylor.—p. 353.

**Exhaustion as Cause of Mental Illness.**—Henderson is of the opinion that exhaustion as a primary factor in the causation of mental illness has probably been overrated, whereas as a contributory factor it is of the greatest significance. The most varied infective-exhaustive factors produce a uniform symptom picture showing several main types, depending largely on the innate characteristics of the individual, e. g.; (1) delirium; (2) irritable, suspicious, deluded state; (3) depressive hallucinosis; (4) dull, apathetic, depressed group; (5) stupor; (6) mania; (7) Korsakow's syndrome.

### International Journal of Psycho-Analysis, London

June, 1921, 2, No. 2

- Primitive Man and Environment. G. Roheim.—p. 157.  
Castration Complex. A. Starcke.—p. 179.

### Japan Medical World, Tokyo

Nov. 15, 1921, 1, No. 7

- \*Causes of Rapid Sedimentation of Red Corpuscles of Blood of Pregnant Woman. T. Sakae and T. Tsutsumi.—p. 1.  
\*Action of Radix Ginseng on Experimental Hyperglycemia. I. Saito.—p. 3.  
\*Mode of Functional Changes in Glandular Structure. R. Tsukaguchi and K. Takagi.—p. 7.  
Structure of Opsonic Complement. M. Kodama.—p. 9.

**Cause of Sedimentation of Blood Corpuscles.**—The rate of sedimentation of blood corpuscles in pregnant blood is far greater than that of normal blood, and the rate increases as the months of pregnancy increase. Sakae and Tsutsumi assert that there are two causes for it. (1) The ratio of blood plasma to corpuscles in blood of pregnant woman is greater than that of normal woman. (2) The corpuscles are more easily agglutinated in pregnant blood than in normal blood. The causative agent of agglutination of the corpuscles in pregnant blood does not exist outside of colloidal substances. The total amount of colloid has no influence, but the following facts have clearly been established: (a) Fibrinogen markedly increases the rate. (b) Globulin increases the rate. (c) Albumin decreases the rate. In pregnant blood these



three colloidal substances are so changed as to increase the rate of sedimentation. Besides the specific gravity and viscosity of pregnant blood are lower than those of normal blood, which may have some influence on the rate of sedimentation. The concentration of hydrogen ion of the serum of the pregnant woman is higher than the normal serum and may somewhat inhibit the rate of sedimentation.

**Effect of Ginseng Root on Hyperglycemia.**—Saito asserts that ginseng extract prevents the hyperglycemia caused by feeding sugar. Ginseng given by mouth or subcutaneously prevents epinephrin hyperglycemia. The blood sugar increases when the administration of ginseng is stopped. Ginseng also prevents dietetic hyperglycemia, but when ginseng is stopped the sugar in the blood increases.

**Functional Changes in Gland Cells.**—The histologic structure of glandular cells has been studied by Tsukaguchi and Takagi and various formations were found. They show how a glandular cell has a complicated organic construction. But the constituent of the cells which has direct concern with the glandular cells is the plastosome. One theory is that the plastosome has direct relation with the origin of the secretory granules and that the former is, in fact, the mother material of the latter. The other theory, while it recognizes the functional activity of the plastosome, yet doubts the relation with the formation of secretory granules. The granules, according to this theory, are elaborated by protoplasm. The authors hold to the first theory.

### Journal of Tropical Medicine and Hygiene, London

Dec. 1, 1921, 24, No. 23

- \*Arneth Count in Malaria and Syntery. H. B. Newham and J. T. Duncan.—p. 301.
- Dhobie Itch Produced by Inoculating a Culture of Epidermophyton Rubrum (Castellani, 1909). R. de Silva.—p. 303.
- Medical Situation in West, Central and South Africa. H. S. Hollenbeck.—p. 304.

**Arneth Count in Malaria and Dysentery.**—Newham and Duncan found that infection with *E. histolytica* causes no change of any moment in the Arneth picture. Cases of malaria before treatment show a more or less definite shift to the left, but this rapidly gives way to a shift toward the normal as soon as the patient is vigorously treated with quinin and the general toxemia is thus eliminated.

### Lancet, London

Dec. 10, 1921, 2, No. 5128

- \*Heart Problems. E. H. Starling.—p. 1199.
- \*Function of Lymphocyte and of Lymphoid Tissue in Nutrition. W. Cramer, A. H. Drew and J. C. Mottram.—p. 1202.
- \*Effect of B Vitamin on Appetite. S. Wright.—p. 1208.
- \*Aortic Incompetence. G. J. Langley.—p. 1209.
- Nonlactose Fermenting Bacilli. H. Lyndhurst.—p. 1212.

**Treatment of Heart Failure.**—In the treatment of failure of compensation, Starling says, rest is most important. It not only diminishes the demands on the heart from the arterial side, but by removing the main cause for the return of the blood to the heart it enormously decreases the inflow into this organ; and it is inflow which in the healthy heart determines output. The value of oxygen, when there is any cyanosis, is explained by its action in diminishing the blood pressure necessary to drive a sufficient amount of blood through the brain, the relaxation of arterioles and the improved supply to the vital organs of the body, and the direct effect of a proper supply of oxygen in improving the contraction and aiding the reintegration and recovery from fatigue of the heart muscle. The plethora attending failure of compensation is a reaction on the part of the organism, as a whole, not on the part of the heart, and does not assist this latter organ. It may, in fact, be harmful when the heart is beginning to recover under the influence of the other modes of treatment just mentioned. One can, therefore, understand the beneficial effects of bleeding as a preliminary measure in certain cases of failure of compensation, as well as the value of diminished salt intake. Another factor of importance in enabling the heart muscle to recover its physiologic condition is the circulation through the coronary vessels. Starling is inclined to ascribe the beneficial effects of graduated exercises in heart disease very largely to the improvement of the coronary circulation brought about by the temporary rise of

arterial pressure accompanying the exercises. So important is the coronary circulation for the functional capacity of the heart that every medical man should be aware of the manner in which this circulation is regulated. The oxygen usage of the heart is directly proportioned to the work it does, and its oxygen supply must therefore vary within the same limits as its work, i. e., in a healthy heart from 1 to 7 or 10.

**Function of Lymphocyte in Nutrition.**—Absence of the water soluble B vitamin from the diet of rats and mice leads to an atrophy of the lymphoid tissue throughout the body and to a lymphopenia in the circulating blood. The polymorphonuclear leukocytes are not affected. Absence of the fat soluble A vitamin does not lead to an atrophy of the lymphoid tissue, hence there is no lymphopenia. Absence of water soluble B vitamin leads to characteristic nutritional disturbances, such as loss of weight, emaciation, subnormal temperature, which may be designated by the term "marasmus." No such marasmus results from withholding the fat soluble A vitamin. The lymphopenia established by withholding the water soluble B vitamin is rapidly abolished by the administration of the water soluble B vitamin and, with it, the concomitant marasmus. A permanent lymphopenia, and associated with it an atrophy of the lymphoid tissue throughout the body, can also be induced by exposure of rats to sufficient doses of roentgen rays or radium. Such animals then also develop a condition of marasmus similar to that observed when the water soluble B vitamin is withheld. Since the functional disturbances in the lymphoid tissue produced by two such widely different agencies lead to the same nutritional disturbances, it is concluded that the lymphocytes play a part of fundamental importance in the nutrition of the body. Other evidence points to the conclusion that they are concerned in the absorption and assimilation of food from the intestine.

**Effect of B Vitamin.**—Wright asserts that vitamin B acts by facilitating the efficient carrying out of the functions of the intestinal canal. The main effects produced by the absence of the vitamin—i. e., diminished food consumption, loss of weight, and ultimate death—are due to intestinal stasis and the absorption of toxic products which result therefrom.

**Prognosis in Aortic Incompetence.**—The prognosis in aortic disease, Langley states, remains almost as difficult a problem today as it was years ago. Nevertheless, modern methods do give invaluable help in certain cases. Pathologic increase in the P R interval or the duration of the Q R S complex yields information as to myocardial damage which could not be arrived at by other means or could be guessed at without any definite proof—e. g., P R interval increase, four cases, two patients already dead. Inversion of T in Lead II, four cases, one patient already dead, and two others seriously ill. It is only by utilizing every method of investigation, old as well as new, that a correct estimate is likely to be arrived at in these difficult cases. The careful and repeated examination of the urine for red blood cells, the systematic search for petechiae, enlargement of the spleen, pallor and clubbed fingers, is perhaps the most important procedure in the whole clinical examination of the patients, and only to a less extent, because less frequent, in all cardiac cases. Arteriosclerosis and renal diseases, long regarded as etiologic factors, also demand special investigation, more particularly as regards renal function and retinal hemorrhages. The correlation of all the findings will probably point the way, and each factor follows the expected line; yet in a certain number of cases this will not be so, and explanation of the anomaly may be extremely difficult. When the size of the heart does not appear to correspond to the degrees of regurgitation, as judged by the collapsing character of the pulse, difference in systolic and diastolic pressures, presence or absence of aortic second sound at the root of the neck, and the presence of L S P in the electrocardiogram, the possibility of an adherent mediastinopericarditis must be borne in mind; it was thought to be a possibility in only one case of this series. Of the forty cases fully investigated by Langley all the facts arrived at followed the expected line in thirty-one, but in nine cases the findings did not correspond in some particular. Of these nine cases three patients are already dead, one has an active endocarditis, one probably an adherent pericardium, and the other four cannot at present be explained. Cases which show



a want of correspondence in all the findings of a routine examination should also be regarded as of serious outlook.

### Practitioner, London

December, 1921, 107, No. 6

- Epilepsy and Some Kindred Attacks. R. Armstrong-Jones.—p. 381.  
Medical Aspects of Enlarged Prostate. R. Hutchison.—p. 394.  
Orthopedic Surgery. A. H. Tubby.—p. 397.  
Climatic Treatment of Early Phthisis in Well-to-Do Persons. W. Gordon.—p. 403.  
Nongonococcal Urethritis. R. L. Spittel.—p. 406.  
Subacute Bacterial Endocarditis. J. W. McK. Nicholl.—p. 424.  
Rheumatoid Arthritis: Lesson of Twenty-Five Years' Experience. N. Davies.—p. 432.  
Treatment of Vomiting in Malaria with Epinephrin. F. L. Wood.—p. 443.

### South African Medical Record, Cape Town

Nov. 12, 1921, 19, No. 21

- Relation of Radiology to Other Specialties. L. E. Ellis.—p. 410.  
Child Welfare. E. M. Chubb.—p. 414.  
Plea for Early Exploration in Cases of Probable Abdominal Carcinoma. H. T. Mursell.—p. 418.  
Hydatid Cyst of Orbit. J. S. Du Toit.—p. 421.  
Case of Twins with an Interval of Eighteen Hours Between the Births of First and Second Children. C. Sand.—p. 422.

### Bulletin de l'Académie de Médecine, Paris

Nov. 22, 1921, 86, No. 38

- Reform in Preparatory Education and Hygiene. Linossier.—p. 273.  
Abnormal Intellectual Fatigue from Injudicious Pedagogics. P. Le Gendre.—p. 281.  
Medicolegal Import of Mental Disturbances Consecutive to Epidemic Encephalitis. M. Briand.—p. 286.  
\*Phrenoscopy of Psychopaths. Laignel-Lavastine and G. Maingot.—p. 288.  
A French Out-Door School. H. Méry and Vaillant.—p. 291.  
Plastic Operation for Chronic Dacryocystitis. Dupuy-Dutemps and Bourguet.—p. 293.

**Phrenoscopy in Psychopathies.**—Roentgenoscopy of the excursions of the diaphragm may reveal certain individual characteristics instructive in psychiatric examination. In 100 such cases, the findings usually coincided with the clinical course.

### Bulletin Médical, Paris

Aug. 27, 1921, 35, No. 35

- \*Laënnec and His Times. J. Janicot.—p. 685.

**Laënnec.**—Janicot gives extracts from a recent "Life of Laënnec," 1782-1826, compiled mainly from 300 unpublished letters. On his way to a patient one day he passed where a building was being erected and saw some children straddling the ends of a beam and laughing at the loud sounds heard at one end when the other was tapped. Musing on this phenomenon and the dubious diagnosis in the case before him, when he reached the patient he took a pad of letter paper and rolled it up and examined the girl's chest through this, and the stethoscope was born. In his early experiments he tried to roll up the paper tight enough to leave no central space, but was unable to do this. One consequence was his discovery of pectoriloquy.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 18, 1921, 45, No. 33

- \*Malarial Neuritis. G. Paiseau, H. Schæffer and Alcheck.—p. 1498.  
\*Diuretic Potassium Salts. L. Blum, E. Aubel and R. Lévy.—p. 1504.  
Gangrene of the Lung. A. Lemierre, et al.—p. 1513.  
Syphilis Acquired without a Chancre. Gougerot.—p. 1522 and p. 1526.  
Gallstones Formed Early in Typhoid. Dufour and Ravina.—p. 1530.

**Malarial Neuritis.**—After a few days of pain in the arm in the course of malaria, the robust young man developed paralysis of the deltoid. It has persisted unmodified for four months to date. The reaction of degeneration is pronounced. The writers have been unable to find any other instance on record of malarial neuritis of the circumflex nerve. In only nine of the thirty-seven cases of malarial neuritis they have compiled was the malaria of the pernicious type. The sudden onset of the paralysis is mentioned in nearly every instance.

**Diuretic Action of Potassium Salts in Ascites and Edema.**—Blum, Aubel and Lévy called attention recently (as mentioned on page 1526 of THE JOURNAL for Nov. 5, 1921) to the powerful diuretic action of potassium chlorid on the dropsy of chronic kidney disease. They here present data showing

that this action is pronounced also in cases of ascites and essential edema. Provided the cardiovascular apparatus is not involved, they say, this drug can be counted on to benefit more than any of the usual diuretics. It has to be given in adequate doses, from 7.5 to 25 gm. daily, and the system prepared by restriction of the intake of salt. The drawbacks are the intense laxative effect which the potassium salts sometimes induce, and the grave disturbance in the circulation which may follow even a relatively small dose when the heart is diseased.

### Presse Médicale, Paris

Nov. 16, 1921, 29, No. 92

- Pregnancy and Tuberculosis. L. Bernard.—p. 909.  
Trachoma in Poland. C. Majewski.—p. 910.  
\*Uremia in Malaria. Benhamou, Jahier and Berthelemy.—p. 912.

**Uremia in Malaria.**—The experiences related testify that a low urea content of the blood and spinal fluid in pernicious malaria is a favorable sign. It was found that in all the cases with recovery the urea in blood or spinal puncture fluid ranged from 0.27 to 0.52 per cent. In the fatal cases the urea content was always very much higher than this. The cerebral symptoms in pernicious malaria may be due to the high urea content, and hence determination of the urea content of the blood will aid materially in the prognosis and guide treatment.

Nov. 19, 1921, 29, No. 93

- \*Still-Births in France. A. Couvelaire.—p. 917.  
The Vegetative Reflexes. P. Hartenberg.—p. 919.  
Nature of Molluscum Contagiosum and Warts. P. Pagniez.—p. 922.

Nov. 23, 1921, 29, No. 94

- Leukemia and Tuberculosis. P. E. Weil and Coste.—p. 929.  
The Spring Oscillographic Sphygmograph. F. L. Soler (Buenos Aires).—p. 930.  
Nutritional Standards. T. Merrill and H. Violle.—p. 931.

**Mortinatalité.**—Couvelaire applies this term to include all cases of conception not resulting in a viable child, and says that, in more than half of the cases, syphilis or pregnancy toxemia is responsible. He describes ways and means to combat this, and tells what has been accomplished in this line in his own district.

Nov. 26, 1921, 29, No. 95

- Chronic Progressive Ophthalmoplegia. F. Terrien.—p. 937.  
Prolonged Gastric Secretion. L. Meunier.—p. 937.  
The Regimen for the Tuberculous. A. Cawadias.—p. 938.  
Gunshot Fracture of the Femur. E. Juvara.—p. 939.  
Serum and Vaccine Therapy of Soft Chancre. L. Cheinisse.—p. 941.

Nov. 30, 1921, 29, No. 96

- Syphilis as Factor in Epilepsy. E. Leredde.—p. 949.  
\*Tumor in Carotid Region. J. Berger and J. Magrou.—p. 951.

**Salivary Gland Tumor.**—The tumor was in the carotid region and the microscope showed that it was composed of normal salivary gland tissue, without any outlet duct.

### Revue de Chirurgie, Paris

1921, 59, No. 1

- \*Traumatic Toxemia. Cornioley and Kotzareff.—p. 1.  
Retrocolic Appendicectomy. P. Descomps.—p. 20.  
\*Primary Tuberculosis of the Costal Cartilages. A. Gruget.—p. 30.  
Inflammation of Sublingual Gland. F. Bonnet-Roy.—p. 40.  
\*Reconstruction of Hard Palate. F. Burian.—p. 49.  
\*Correction of Deformity from Facial Paralysis. Id.—p. 52.  
Diffuse Symmetrical Lipomatosis. J. Murard.—p. 58.

**Traumatic Toxemia.**—Cornioley and Kotzareff have been experimenting for two years on rabbits and guinea-pigs to study the action of the toxins elaborated by crushed tissues, and means to combat the toxemia. The traumatic toxemia may be estimated by the drop in the number of erythrocytes, the behavior of the oculocardiac reflex, and the increasing eosinophilia. Their research suggests that the toxemia might be combated by measures to coagulate the local toxins in the crushed tissues if, as surmised, these toxins are soluble albuminoids. The toxic action of the muscle autolysate seems to be much like that of tetanus toxin. Profuse venesection, followed by injection of physiologic saline with epinephrin, not only gets rid of part of the toxins in the blood, but it relieves the stasis in different organs, and especially in the portal system, while the epinephrin keeps the blood pressure from dropping, and diuresis is promoted. Transfusion of



blood might be useful, as also organotherapy (liver, suprarenals, kidney) to combat the insufficiency of these organs.

**Primary Tuberculosis of the Costal Cartilages.**—Gruget found the maximum of the lesions on the inner side and center of the cartilage in his three operative cases described. Local medication was unable to reach all the diseased tissues.

**Plastic Operation on the Palate.**—In December, 1919, Burian twisted around a skin flap from the neck until it fitted over the gap in the palate left after removal of a cancer of the hard palate in a young man. The pedicle of the flap was below the ear, the tip at the sternoclavicular articulation. It was brought in to roof the mouth through a 6 cm. horizontal incision in the cheek. The mucous membrane lining the cheek had first been separated to form a large pedunculated flap, and this flap was replaced and sutured over the raw side of the skin flap roofing the mouth. Three weeks later the pedicle of the skin flap was severed. This technic protects the skin flap against harm from the mouth, while the double layer of tissues is strong, and there is little danger of retraction. His patient could speak and eat without difficulty from the first.

**Correction of Facial Paralysis.**—Burian extols the fine results he has realized in a case of traumatic facial paralysis by suspending the drooping corner of the mouth by means of a muscle implant in the lips. Control of the eyelids was regained by a narrow strip of fascia lata wound around the median palpebral ligament, at the inner angle of the eye, and then one end was drawn lengthwise through the lower lid, and the other end through the upper lid. The two ends were sutured together after thus tunneling the lids, close to the edge. The muscles must be trained afterward to work together and symmetrically. The technic is illustrated, and the results in one case. The lower lid can be reconstructed in this way, making the lid from a doubled-over skin flap from the cheek, suspending it by a strip of fascia sutured to the periosteum of the inner and outer margins of the orbit.

1921, 59, No. 2

\*Apparatus for Fractured Humerus. P. Séjournet.—p. 73.

\*Gastro-Enterostomy with Perforated Ulcer. H. Alamartine and C. Dunet.—p. 114.

\*Sarcoma of Sciatic Nerve. E. Allenbach.—p. 135.

**Apparatus for Fracture of the Humerus.**—The advantages of the apparatus of which Séjournet gives an illustrated description are that while the fracture is maintained in perfect reduction, the movements of the elbow and shoulder are not hampered in the least. It has been applied in thirty-two cases to date, and the outcome as regards the use of the arm was practically perfect. The cases are described in detail; they confirm anew the imperious necessity for mobilizing the joints near a fracture.

**Gastro-Enterostomy with Perforated Gastric and Duodenal Ulcers.**—Alamartine and Dunet explain that a gastro-enterostomy is superfluous and futile when the lesion is at the cardia or in the body of the stomach. But it is formally indicated with ulcers in or near the pylorus and in the duodenum.

**Sarcoma of Sciatic Nerve.**—Allebenbach has been able to find twenty-four cases of this kind on record, and adds another case to the list. The man of 50 noticed a small tumor in the back of the right thigh. In four months it had increased to the size of a man's head. The sciatic nerve entered and emerged from the tumor, which was easily resected. Another tumor soon developed in the cicatrix, and the thigh was amputated. Tetanus developed seven days later and proved fatal. The youngest patient in the group was 19, the oldest 59, and 80 per cent. were men. Pain was the first symptom in 80 per cent. and it was agonizing in some. The absence of pain in 20 per cent. was no criterion of lack of malignancy. In some cases the tumor extended from the seat to the knee. The preferable treatment is ample resection, bridging the gap in the nerve with an implant.

### Revue Médicale de la Suisse Romande, Geneva

July, 1921, 41, No. 7

\*Dystrophia in the Hip Joint in Children. H. Vulliet.—p. 413.

Vertebral Lymphogranuloma. A. Valette.—p. 456.

**Hip Joint Disturbance in Children.**—Vulliet reports a long study of a group of lesions of the hip joint in children, for

which neither traumatism nor infection are really responsible, dystrophia evidently cooperating. There is some profound disturbance in the nutrition of the bone at this point, especially some local derangement in calcification. All in this group are distinguished by the tendency to a spontaneous cure, whether the disturbance is of the type of the Legg-Calvé-Perthes deforming osteochondritis, spontaneous crumbling of the neck of the femur, fibrocystic osteodystrophia, scaphoiditis or apophysitis. A number of typical instances of each form are discussed, with forty-seven illustrations. The children were all apparently normal in this respect until between the ages of 4 and 12, when slight limping attracted attention. It may have been noticed first after some slight trauma. The indolence of the lesion and the lack of fever show that infection is not mainly responsible.

August, 1921, 41, No. 8

Wassermann and Vernes Serologic Tests. R. Gonin.—p. 477.

Skin Reaction and Hemoclastic Crisis. P. Schiff.—p. 509.

Treatment of Pulmonary Tuberculosis from Practitioner's Standpoint. R. Burnand.—p. 510.

\*Treatment with Artificial Pneumothorax. Piguet.—p. 521.

Official Measures to Prevent Spread of Venereal Disease. C. Du Bois.—p. 527.

**Treatment of the Tuberculous with Artificial Pneumothorax.**—Piguet emphasizes that in order to obtain the best results from the pneumothorax, the patient should be prepared for it as for a major operation, and be given the benefits of repose and outdoor living afterward. Two years of sanatorium treatment are not too much to devote to it.

### Schweizerische medizinische Wochenschrift, Basel

Nov. 10, 1921, 51, No. 45

\*Experimental Tar Cancer. B. Bloch and W. Dreifuss.—p. 1033.

\*Spontaneous Dissolving of Gallstones. E. Hedinger.—p. 1037.

\*Diagnosis of Cholesteatoma in Middle Ear. E. Schlittler.—p. 1038.

\*Traumatic Neuroses and Previous Hearing. K. Ulrich.—p. 1041.

**Experimental Tar Cancer.**—Bloch and Dreifuss were conducting research in this line in 1912, and resumed it in 1920. They experimented with rabbits, guinea-pigs and white mice. Their results with rabbits were like those published by the Japanese investigators in this line, but the cancers induced in white mice surpassed them in every respect. Guinea-pigs have proved refractory to date. The special feature of their research is that they experimented with the different elements of the coal tar, as well as the whole tar, painting the back of the white mouse with the substance daily for 160 days or more. The tumors continue to grow in diameter and depth after the applications have been suspended, and metastatic tumors were found in axillary and inguinal glands and in the lungs. They found up to 20 metastatic nodules in one lung, and this lung metastasis was evident in 30 to 40 per cent. of the mice that lived long enough. Their experiments with the different elements of the tar demonstrated, they say, that the cancer-inducing fraction is a substance with a boiling point of over 300 C. freed from the bases, phenols, etc., that boil at a low temperature. It is effectual even after distillation, inducing in four months in 100 per cent. extensive and rapidly growing malignant tumors. The work was done at the dermatologic clinic at Zurich of which Bloch is chief.

**Spontaneous Dissolving of Gallstones.**—Hedinger gives an illustration of five gallstones, found at necropsy of a woman of 57, in the shape of rings. The thickness of the rings varies at different points. They look as if the softer center had dissolved out of an ordinary gallstone, leaving merely the outer layer like a shell. In one of the stones there was a gap in the shell, as if even the outer layer had dissolved away at this point. This finding confirms Hausmann's experience that human gallstones placed in the dog gallbladder are soon dissolved. Naunyn has recently reported instances of the dissolving and crumbling of gallstones free in the gallbladder, with normal flow of bile. That this does not occur oftener is evidently because the bile stagnates, and is not of normal composition.

**The Cholesteatoma Danger with Otitis Media.**—Schlittler states that there were 58 fatalities among the 6,000 chronic and 4,000 acute cases of otitis media at the Basel ear clinic



in the last twenty years. In the 25 fatal chronic cases, cholesteatoma was found in all but 2, and he expatiates on the danger of allowing cholesteatoma to escape detection. In all the cases of cholesteatoma of which he knows, the opening in the tympanic membrane was always at the upper edge. This is so constant that he thinks we can assume that with the perforation elsewhere in the membrane there can be no cholesteatoma. Scheibe in 37 cases and Ulrich in 458 found the perforation always at the upper margin or leading directly into the epitympanic recess. The practitioner should realize that with an epitympanic perforation or defect in the membrane the case should be referred to the specialist without delay, as the dangerous form of otitis media. He describes the mechanism and treatment of cholesteatoma.

**The Hearing in Relation to Traumatic Neuroses.**—Ulrich describes 44 cases to show the principles to be followed in estimating the effect of traumatism of the ear, especially what he calls the iatrogenous origin of the neurosis. This term might be defined as "bred by the attending physician."

### Pediatrics, Naples

Nov. 1, 1921, 29, No. 21

\*Emotional Respiratory Spasm. R. Vaglio.—p. 969.  
\*Digestion Leukocyte Reaction in the New-Born. Auricchio.—p. 977.  
\*Banti's Disease in Young Children. A. F. Canelli.—p. 986. Conc'n.

**Affective Respiratory Spasms.**—Vaglio refers to the spasm that may follow a sudden fright, a fall, or anger. The child starts to scream but its respiratory muscles contract spasmodically, and it falls unconscious, but there is usually no incontinence of feces. The spasm may last for a few seconds or even minutes, and as it subsides the child screams. He describes eight cases in infants from 14 to 22 months old and one child of 6. The prognosis is favorable. Treatment, he says, can be only prophylactic, not humoring the child, but threatening to punish it if it holds its breath. The spasm may sometimes be averted by promptly diverting the child's attention. Measures to soothe the nervous system are advisable; change of scene may be necessary. During the spasm, a dash of cold water on the face and, eventually, artificial respiration may be applied.

**Banti's Disease in Young Children.**—Canelli knows of only 30 cases of primary splenomegaly of the Banti type in children; 9 were from 9 weeks to 6 years old; 10 between 7 and 14, and 12 between 15 and 17. He tabulates the details; only 7 are listed as cured; 13 have already died. A hemorrhagic tendency was common among them; hematemesis or melena is mentioned in 9 and epistaxis in 6 other cases. In the total 30 cases, splenectomy was applied in 12 cases and all were cured or improved except one 4 months infant. There was only one spontaneous recovery; this was in a girl at the age of 17 who was over 5 when the symptoms had been first observed. But improvement followed mercurial or arsphenamin treatment in 2. Spleen and liver organotherapy have not displayed any actual efficacy to date. In infantile splenic anemia, the spleen may subside in size under the roentgen rays, but the pathologic process in this differs from the Banti disease in adults, while infantile splenic anemia displays a tendency to a spontaneous cure. He analyzes the literature on the subject, and remarks that the Wassermann test has sifted out a number of cases that deceptively simulated Banti's disease, but specific treatment restored practically normal conditions as a rule. The rapid course of the Banti syndrome in children almost fuses the three stages of the disease, the anemic, the intermediate and the ascitic phases. The influence of intercurrent diseases, the active metabolism and gastro-intestinal derangement, etc., are liable to still further modify in children the classic Banti picture. The spleen is always the first affected, and the secondary insufficiency of the liver entails progressive intoxication. The spleen stage may be masked by gastro-intestinal disturbance or be mistaken for such, the distention from the enlarged spleen being ascribed to meteorism, especially as the spleen is not tender as a rule. This fact may aid in excluding a tuberculous process. The anemia may be mild or pronounced or completely absent. It is never as extreme as might be anticipated from the intensity and duration of the spleen

process; only exceptionally is there any tendency to progressive pernicious anemia. Leukopenia, however, oligocythemia and oligochromemia aid in the differential diagnosis although the leukopenia is not absolutely constant or specific. Tuberculous polyserositis may deceptively resemble the clinical picture of Banti's disease unless there are fever and jaundice, which do not belong in the Banti picture. In a case personally observed, the infant of 14 months was debilitated from a persisting gastro-enteritis, and necropsy after intercurrent bronchitis showed diffuse changes in the enlarged spleen, of the Banti type, with subacute hepatitis with foci of necrosis, and an active tuberculous process in the pelvic organs. The fever in the case was probably traceable to the enteritis or the intercurrent tuberculous process. Some recommend arsphenamin as almost the only means to differentiate true Banti's disease from the syphilitic and other splenic affections liable to be confused with it. It is well to suspend the final diagnostic verdict, as two clinicians have recently reported a case each cured with simple tonics and two others a case improving under mercury. Three pages of bibliography are appended, but Graham and Fuchs are the only Americans cited.

### Policlinico, Rome

Nov. 14, 1921, 28, No. 46

\*Traumatic Lesions of Spinal Cord. G. Egidi.—p. 1539. Conc'n No. 47, p. 1581.  
\*Diagnostic Import of Abdominal Pain. G. Izar.—p. 1545.  
\*Viscous Urine. L. Tocco.—p. 1548.  
\*The Complexion in Malaria. G. Jona.—p. 1551.

**Trauma of the Spinal Cord.**—Egidi reviews the present status of our knowledge of symptoms, course and treatment of traumatic lesions of the cord. We have no means of determining early whether the injury is from compression or contusion, except by estimation of the violence of the trauma. With discovery of a splinter of bone or of metal, or fracture of a vertebra there is sometimes a chance that correction of this or of a hematoma may release the cord from compression. In operating, special care must be taken not to hamper the respiration still further. If the patient lies prone, the abdomen should be left free to share in the respiration movements. In concluding, he mentions Wilms' suggestion to amputate both thighs in incurable paraplegia, to get rid of the dead weight of the legs. By transplanting the outlet of the urethra to the perineum, the urine would escape stagnation. After an operation for injury of the spinal cord, the ventral reclining position, like that used by Rollier in heliotherapy of Pott's disease, has a number of advantages. Chief among them is the avoidance of bed sores in the sacral region, and the healing of the postoperative fistula which is not kept moist all the time, as when secretions are constantly seeping through it by gravity.

### Tumori, Rome

Nov. 20, 1921, 8, No. 3

\*Histogenesis of Cancer of Lung. F. Tonietti.—p. 257.  
\*Pathology and Surgery of the Thyroid. S. Dentici.—p. 274.  
\*Cure of Tonsil Sarcoma under Vaccine. B. Bruzzi.—p. 293.  
\*Treatment of Cancer with Autogenous Vaccine. S. Citelli.—p. 293.  
\*Skin Manifestations with Hemoblastosis. L. Martinotti.—p. 307. Cont'd.

**Vaccine Therapy of Cancer.**—Bruzzi reports a case of sarcoma of the left tonsil in a man of 48 (January, 1921), which retrogressed completely in three months under six injections of an autogenous vaccine made by Citelli's method. The treatment was applied in two other cases but the patients did not return to complete the course.

**Vaccine Therapy of Endothelioma of the Palate.**—Citelli analyzes a case in which the tumor had retrogressed under the vaccine treatment, but it returned with metastases during a severe intercurrent malaria, and proved speedily fatal. In this case and also in a second one of endothelioma the tumors retrogressed rapidly under the vaccine treatment. He does not give the technic for making the vaccine except a casual reference to the use of a filtrate of 20 cg. of fresh cancer tissue, agitated for an hour. He has had no untoward by-effects in the twenty cases of sarcoma and carcinoma in which he has applied it, but in two of the three endothelioma cases, the subcutaneous injections in the arm caused local suppurations.



**Crónica Médica, Lima**

September, 1921, 38, No. 699

\*Surgical Treatment of Empyema. N. Barsallo.—p. 287.

\*Cirrhosis of Liver plus Hydatid Cyst. T. M. Taboada.—p. 296.

\*Arachnoidism. N. E. Cavassa.—p. 298.

**Operative Treatment of Empyema.**—Barsallo reports four cases with an illustration of the simple arrangement of two flasks and tubes which automatically flushes out the pleura intermittently after the pus has been evacuated, and the cavity swabbed out with a wick held in forceps. He resects the rib just above the puncture that brought pus; this was the eighth rib in two of his cases. Through this incision he locates the lowest point in the pleura and makes the counteropening here for the drains. He used Dakin's solution for the flushing fluid, and the prompt recovery confirmed the advantages of this method. All recovered in from thirty-five to forty-five days. In a fifth patient no pus was found on repeated puncture nor even after incision of the intercostal spaces, and the man of 30 died three days later. Necropsy explained the case as merely interlobar pleurisy. He warns that tuberculous empyema contraindicates this treatment, as an interminable fistula is sure to result.

**Cirrhosis of the Liver Plus Hydatid Cyst.**—In Taboada's case atrophic cirrhosis of the liver was accompanied by hydatid cyst, and the clinical picture was that of hypertrophic cirrhosis with ascites. The ascites required weekly tapping for a time and then it subsided completely. Necropsy two years later first revealed the hydatid cyst.

**Poisoning from Spider Bite.**—Cavassa reports three cases, all in robust men. The one bitten by the "luna," a very small spider, died the fourth or fifth day. The two bitten by the tarantula recovered. The skin was involved in both, the process amounting to gangrene in the arm in one and a general eruption with desquamation in the others, besides the symptoms of grave general toxic action.

**Gaceta Médica de Caracas, Venezuela**

July 15, 1921, 28, No. 13

Resolutions Adopted by Third Medical Congress of Venezuela.—p. 184.

\*Medical Geography of Venezuela. F. A. Rísquez.—p. 187.

**Medical Geography of Venezuela.**—This was the main topic at the recent national medical congress in Venezuela, and Rísquez here groups and summarizes the various data compiled for the purpose by physicians in different regions and the published literature on the subject. Typhus does not seem to have been observed in Venezuela, but a pyrexia called Guacarapa fever is regarded by A. Blanco as identical with typhus. In Rísquez' experience with it, he never knew of but two recoveries, one in a child and one in a man who succumbed to complications. Some cases published in 1907 as relapsing fever proved later to be malaria. There has been no case of yellow fever at Caracas since 1913, but there was an epidemic at Coro in 1917. No cases have been known since, and no cases of cholera in the country since 1854, and the country is practically free from smallpox. Venereal diseases and alcoholism are common and increasing.

**Revista Española de Medicina y Cirugía, Barcelona**

September, 1921, 4, No. 39

\*The Blood Pressure During Operations. J. Blanc Fortacín.—p. 519.

Infections Associated with Pulmonary Tuberculosis. R. Dargallo.—p. 529.

The Oculocardiac Reflex in Healthy Children. J. Alzina Melis.—p. 532.

**The Blood Pressure During Operations.**—Blanc Fortacín gives nineteen charts showing the systolic and diastolic pressure as recorded by the oscillometer applied to the arm during and following major operations.

**Archiv für Kinderheilkunde, Stuttgart**

Dec. 3, 1921, 70, No. 3

\*Micromethod for Urine. C. Noeggerath and H. S. Reichle.—p. 161.

Basal Metabolism in Children. II. W. Klein et al.—p. 164.

Calcium Content of Blood in Children. R. Mayer.—p. 170.

Bilirubin Content of Blood in Scarlet Fever. O. Lade.—p. 184.

Tuberculous Meningitis at Kiel. Emma Stelling.—p. 188.

Rachitis Statistics. S. Engel and G. Katzenstein.—p. 198.

\*Modern Tests for Calcium Content of Blood. R. Mayer.—p. 212.

**Micromethod to Determine Specific Gravity of Urine.**—Only 1 or 0.5 c.c. of urine is required for the test. Chloroform and benzin are mixed, the latter slightly in excess, and then a drop of the urine is dropped into the mixture. If the drop rises, the proportions are correct. If it falls, more chloroform is added until the urine rises when it is dropped into the fluid. With the mixture thus obtained as a basis, further tests are made with fresh specimens, adding benzin until a mixture is reached in which the drop of urine settles rapidly to the bottom. The specific gravity of the mixture, in which this occurs, is recorded, as also the specific gravity of the mixture with excess of chloroform in which the drop of urine rapidly rises. The average of the two figures gives the specific gravity of the urine. A table of the findings with this and other methods shows that it is accurate enough for all practical purposes.

**Deutsche medizinische Wochenschrift, Berlin**

Oct. 27, 1921, 47, No. 43

Artificial Complement. L. von Liebermann.—p. 1283.

Lipoids from Animal Organs as Antigens. Niederhoff.—p. 1284.

Comparative Experimental Research on Cardiac Remedies. J. Citron.—p. 1285.

Beer as a Relish (Genusswert des Bieres). Kionka.—p. 1288.

Clinical Tests for Blood Volume. Griesbach.—p. 1289.

Improvement in Two Cases of Dystrophia Adiposogenitalis under Roentgen Exposures of Sella Region. Ranschburg.—p. 1291.

Intrapleural Infusions in Pulmonary Tuberculosis. Thinius.—p. 1293.

Internal Secretion of the Placenta. E. Puppel.—p. 1294.

The Third Modification of the Meinecke Test. Gutfeld.—p. 1295.

Spinal Fluid in Treated Congenital Syphilis in Children. Breuer.—p. 1296.

Gage for Calcium Content of Blood. Weiss.—p. 1298.

Present Status of Physiology of Sex Determination. Péterfi.—p. 1299.

Cont'd.

Lymphangitis, Lymphadenitis and Phlebitis. G. Ledderhose.—p. 1300.

**Medizinische Klinik, Berlin**

Oct. 23, 1921, 17, No. 43

\*Operating in Roentgen Irradiated Area. Fritz König.—p. 1283.

Reinfection with Syphilis No Proof of Recovery. W. Pick.—p. 1285.

\*Treatment of Anal Fistula and Hemorrhoids. K. Schlaepfer.—p. 1287.

\*Ponndorf's Skin Vaccination. F. S. La Baume.—p. 1289.

Technic for Intravenous Injections. Model.—p. 1292.

Durability of Action of Silversalvarsan. H. Brüning.—p. 1293.

Tuberculomucin. A. Lilien.—p. 1295.

\*Urine Reaction in the Tuberculous. K. Levi.—p. 1296.

Oblique Decapitation and Cesarean Section and Temporary Sterilization. H. Hans.—p. 1298.

Silver Nitrate Treatment of Erysipelas. S. Hirsch.—p. 1299.

Oligodynamic Action of Metals on Bacteria. P. Saxl.—p. 1299.

Differentiation of Bacillus Crassus. B. Lipschütz.—p. 1303.

Rudiments of Artificial Infant Feeding. K. Blühdorn.—p. 1303.

**Operations in an Irradiated Area.**—König remarks that as a rule an operation in a region that has been previously treated with the roentgen rays heals as under other conditions. But he reports three cases in which an operation—even an exploratory incision, in one case—was followed by local necrosis. The destructive process, however, did not last long, and after the necrotic tissues had been cast off, prompt healing followed. The necrosis resembled a roentgen ulcer except for the prompt and complete healing. He adds that the necrosis and sloughing off of the tissue may be beneficial after removal of a malignant growth, aiding in eradicating the last trace of the cancer.

**Treatment of Anal Fistula and Hemorrhoids.**—Schlaepfer describes the methods used at St. Mark's Hospital in London, founded in 1835, and exclusively devoted to disease of the rectum.

**Attempt to Immunize the Skin Against Infection.**—La Baume has been experimenting to generalize the method Ponndorf has devised for tuberculosis. About twenty scarifications are made in the skin of the upper arm, each as long as a finger, stopping just short of the papillary layer, the scratches bleeding slightly. Then a concentrated tuberculin or vaccine is dropped into the malpighian layer of the skin thus opened up by the scratches. As almost all diseases accompanied by eruptions immunize against further attacks, it seems rational to assume that by inducing intense esophylactic processes in the malpighian prickle layer of the skin, in this way or its equivalent, a tendency to immunization might be induced. Ponndorf and others claim excellent results with tuberculin applied to the scarifications, and La



Maume here reports fifty-two cases of acute or chronic gonococcus infection treated in this way during the last nine months. He regards the results as representing progress, although it does not supersede local chemical treatment but is a useful adjuvant. The number and length of the scratches offer an opportunity for contact with the vaccine much more extensive than the ordinary vaccination technic or even the inducing of a wheal.

**The Urine Reaction in the Tuberculous.**—Levi insists that the own urine reaction is the work of the salts in the urine, and that it may occur in both the healthy and the tuberculous. There may be antigens in tuberculous urine, but they are not strong enough to give a differential reaction unless the urine has previously had the salts removed.

### Monatsschrift für Kinderheilkunde, Berlin

August, 1921, 21, No. 5

Insufficiency of Digestion in Children over Two. K. Blühdorn.—p. 433.  
Medullary, Lymphatic Pseudoleukemia. Hess and Isaac.—p. 442.  
So-Called "Epituberculous Infiltration." Grävinghoff.—p. 447.  
Roentgen Outline of Heart in Infants. Lange and Feldmann.—p. 458.  
Toxins in Milk of Menstruating Women. M. Frank.—p. 474.  
Suppurative Affections of Urinary Tract in Infancy. Samelson.—p. 477.  
Antigen Qualities of Turtle Tubercle Bacillus. Meyer.—p. 481.

### Münchener medizinische Wochenschrift, Munich

Oct. 7, 1921, 68, No. 40

Hundredth Birthday Anniversary of Rudolf Virchow. Marchand.—p. 1271.  
Virchow and Constitutional Pathology. R. Rössle.—p. 1274.  
Virchow's Centennial. H. Schröder.—p. 1277.  
Trauma and Sarcoma. E. Fraenkel.—p. 1278.  
Cerebral Hemorrhage with Fat Embolism. O. Toenniessen.—p. 1280.  
Infectious Coryza. A. Böttner.—p. 1283.  
Holländer's Tuberculin-Serum Test. Gabbe and Martins.—p. 1285.  
Limitations of Antitoxin Prophylaxis in Tetanus. Schmidt.—p. 1286.  
Comparative Investigations on the Availability of Koch's Old Tuberculin and Moro's Diagnostic Tuberculin. L. Meyer.—p. 1286.  
Experimental Investigations on the Diagnostic Value and the Specificity of Cutaneous Inoculation with Trichophytins. H. J. Markert.—p. 1288.  
Recurrent Exanthems in Syphilis with Negative Wassermann. Menze.—p. 1290.  
Neo-Silversalvarsan Natrium. L. Dub.—p. 1293.  
Omentum to Wall Off Perforated Gastric Ulcer. Salzmann.—p. 1294.  
Prevention of Stiff Fingers. A. Krecke.—p. 1296.

**Clinical Aspects, Prophylaxis and Treatment of Infectious Coryza.**—Böttner recommends for the rational treatment of infectious coryza that not only the nose but also the eyes be taken into consideration. The treatment cannot be effective unless the lacrimal ducts are functioning normally. He has found a 2 per cent. solution of collargol an excellent means of breaking up a coryza within twenty-four hours. The treatment can be applied to infants with perfect safety. On the appearance of premonitory symptoms of coryza the prompt prophylactic use of collargol can be relied on to prevent the evolution of the coryza. Chronic infectious coryza will also commonly yield to this treatment. To clear the lacrimal ducts he applies 1 or 2 drops of the 2 per cent. collargol solution to the conjunctiva of the lower eyelids. In each nostril he injects 4 or 5 drops of the same with the head thrown back; the patient should assume a dorsal position for a few minutes.

**Recurrent Exanthems in Syphilis in the Presence of Negative Wassermann Test.**—Menze recalls cases of secondary and tertiary syphilis in which, under neo-arsphenamin treatment, the clinical manifestations disappear and a negative Wassermann reaction is secured but in which new syphilitic skin manifestations appear. He holds that these recurrent exanthems are due to toxic irritation from latent foci of spirochetes. When, in cases of primary and secondary syphilis, the manifestations disappear only incompletely, while spirochetes persist in the foci of infection and the Wassermann reaction remains positive, it may be due to an especially marked resistance of the spirochetes, the formation of recurrent strains (Stühmer) or arsenic-fast, filtrable stages in the development of the spirochetes (Menze).

**Omentum Cuff in Treatment of Perforated Ulcer.**—Salzmann compares the results of the Neumann operation (use of omentum to wall off the perforation), and the outcome in 44 cases in which the treatment was by the same surgeons during the eight-year period previous to the introduction of the Neumann method. With the Neumann method the mortality

was 30 deaths in 84 cases, or 35.7 per cent. Excluding 11 absolutely hopeless cases, in which the operation was performed too late—from seventy-two to ninety-six hours after the perforation—we have 19 deaths in 73 cases, or 26 per cent. mortality. In the thirty-two cases in which operation was performed within nine hours of the perforation, there were only 2 deaths, or 6.2 per cent. mortality. In the 44 operations before the introduction of the Neumann method, there was 70.4 per cent. mortality. Of the 10 early operations, 4 resulted fatally, or 40 per cent. mortality. In the 34 late operations, there was a 79.4 per cent. mortality. Of the 54 patients cured by the Neumann operation, 27 were recently reexamined (after the lapse of from six to ten years in 11 cases). All but one of the 27 felt perfectly well, many having gained from 10 to 20 pounds. No restrictions of diet were necessary.

The advantages of the Neumann method, which he describes in detail with an illustration, are thus obvious. A long tube is introduced through the abdominal wall into the perforation in the stomach wall, in which it fits tight. Omentum is drawn up to form a cuff over the drain tube, from the stomach to the abdominal wall, and it is sutured with silk button sutures to the stomach wall around the perforation, and several stitches are taken to fasten the cuff around the drain tube. The inner end of the latter curves down inside the stomach to the pylorus, and the patient can be fed from the first. The perforation is shut off completely from the abdominal cavity even after the drain is pulled out. This method has been in use for ten years in the clinic, and its simplicity, ease and fine functioning have been confirmed again and again. The stomach is left undisturbed otherwise in its normal bed.

Oct. 21, 1921, 68, No. 42

Bodily Condition in Relation to Constitution. Toenniessen.—p. 1341.  
Strontium Therapy, Clinical and Experimental. Alwens et al.—p. 1344.  
Remissions in Pernicious Anemia. Zadek.—p. 1346.  
Permeability of Blood Vessels in Pregnancy. Mahner and Lundwall.—p. 1350.  
Dold's Simplified Syphilis Flocculation Test. Poehlmann.—p. 1350.  
The Homogeneity of the Cerebrospinal Fluid. Walter.—p. 1352.  
Albumin Factor in Alimentary Toxicosis. F. Lust.—p. 1353.  
Algesia of the Buccal Cavity. H. Marx.—p. 1354.  
Prevention of Heat Radiation by Bubbles. Neisser and Gersbach.—p. 1355.  
Psychic Disturbances in Hypophyseal Obesity. Weygandt.—p. 1356.  
Manic-Depressive Insanity in Jews. J. Lange.—p. 1357.  
Blood Pressure After Arc-Lamp Irradiation. Kimmerle.—p. 1359.  
Experimental Tar Carcinomas. R. Bierich and E. Moeller.—p. 1361.  
Celluloid Cap in Treatment of Cervix Disease. Pust.—p. 1362.  
Diagnostic Spirilla Fever in Doubtful Syphilis. E. Klebe.—p. 1363.  
Difficult Detubation Due to Thymic Hyperplasia. Cahen.—p. 1363.  
Need for Self-Retaining Aorta Clamp in Obstetric Bag. Rissmann.—p. 1364.  
Painless Birth. M. Nassauer.—p. 1364.

### Therapeutische Halbmonatshefte, Berlin

Aug. 15, 1921, 35, No. 16

Dermatoses Following Use of Some New Remedies. W. Lutz.—p. 439.  
Conc'n No. 17, p. 521.  
Endolumbar Arsphenamin in Neurosyphilis and Tabes. Berkenau.—p. 495.  
Treatment of Typhoid with Copper Salts. H. Löhr.—p. 499.  
Antityphoid Vaccination During Epidemic Typhoid. Hackradt.—p. 502.  
Roentgen-Ray Treatment of Hyperplastic Thymus in Pseudoparalytic Myasthenia. L. Pierchalla.—p. 504.

Sept. 1, 1921, 35, No. 17

Puncture of Corpus Callosum and Suboccipital Region. Scheele.—p. 528.  
Quinidin in Auricular Fibrillation. W. Frey.—p. 534.  
Experiences with Proteotherapy in Obstetrics and Gynecology. R. T. von Jaschke.—p. 539.

### Wiener klinische Wochenschrift, Vienna

Oct. 13, 1921, 34, No. 41

\*Arteriosclerotic Kidney. J. Pal.—p. 495.  
Quick Test of Absorptive Power of Skin. Latzel and Stejskal.—p. 496.  
\*Effect of Opium on the Stomach. L. Jarno and D. Marko.—p. 498.  
Cardiac Changes in Esophageal Processes. T. Bársony.—p. 499.  
Diagnosis of Sprengel's Deformity. V. Kollert.—p. 500.

**The Arteriosclerotic Kidney and Its Relation to Contracted Kidney.**—Pal reiterates that the therapeutic measures to be adopted in cases of arteriosclerotic kidney will vary in each individual case. In general the water balance must be carefully watched. In symptomatic treatment, the blood pressure is usually considered the main point of attack, which is often a mistake. What is needed is to preserve the required central



pressure, and not to disturb it. It must not be lowered if the organism has become adapted to a high pressure. On the contrary, the patient sometimes needs to have his blood pressure raised in order to be free from all symptoms, which is, after all, the main thing.

**Effect of Opium on the Stomach.**—Jarno and Marko state that opium alkaloids usually increase the acidity of the stomach. Even in cases of extreme hypoacidity, normal acidity in the stomach was brought about with opium. It was shown that there is a distinct difference between hypoacidity and anacidity, for in the presence of anacidity opium did not produce a normal acidity. While opium alkaloids usually raise the acidity, they retard the motility of the stomach. The evacuation time of the stomach was primarily lengthened, independent of the acid conditions. The opium alkaloids close the pylorus even though there is an anacid condition of the stomach, for the retarded motility associated with increased tonus and active peristalsis cannot be explained in any other way.

### Zeitschrift für Kinderheilkunde, Berlin

Nov. 22, 1921, 31, No. 1-2

\*Sexuality in Children. J. K. Friedjung.—p. 1.

Biology of Leukocytes in Infants. M. Frank.—p. 16.

\*Pathogenesis of Invisible Scorbutic Edema. A. Wallgren.—p. 35.

\*Traumatic Softening of Brain in the New-Born. P. Schwartz.—p. 51.

Significance of Mongolian Blue Spot. M. Zarfl.—p. 80.

\*Prognosis of Tuberculous Pleurisy in Children. E. Nobel and R. Steinebach.—p. 98.

\*Diagnostic Skin Phenomenon in Scarlet Fever. C. Steinkopf.—p. 132.

**Sexuality in Children.**—Friedjung protests against the prejudices and disregard of one's own childhood experiences in the placid assumption that childhood is asexual or pre-sexual. The tremendous changes at puberty do not come out of nothing; there has been a gradual development up to this stage. He has been collecting material in this line for ten years, and presents examples of three types of erotic manifestations in normal children, those connected with the child's own person, with the person of another, and those in the psychosexual sphere. He includes in the first type, the *autoerotik*, the pleasurable sensation which is a factor in the child's sucking the breast. Some infants suck their fingers even a few minutes after birth. The child does not learn to suck to get food, but it gets the milk as an unexpected by-effect of its erotic sensation from the sucking movements. He agrees with Freud that the mouth is one of the erogenous zones, relating an example of thumb-sucking continued into married life, and one of the factors in the divorce. The erotic sensations from rhythmic movements, rocking, etc., belong in this category, as also those connected with defecation and urination. The urethra is another erogenous zone; many cases of enuresis are traceable to this. He has witnessed erection in a 3 weeks' infant, and the daily necessary washing of the genitals attracts the infant's attention to this region. If the cleansing is neglected, then itching and smarting have the same effect. Perhaps, he suggests, it is a functional necessity for the attention to be called early to this biologically important organ. He gives instances of habitual onanism in infants of 9 and 13 months, and says that as the children grow older and are chided for it, they merely become secretive, both girls and boys. He has never seen any severe injury result from the masturbation which is so frequent preceding puberty. He gives a number of examples of *heteroerotik*, including the case of a boy of 3½ with erections when taken into bed with his young mother, and a girl of 2 who, taken into her father's bed, hugged and kissed him and suddenly urinated. A number of instances of Freud's Oedipus complex in very young children are related, and examples showing the craving of children of even 3 and 4 to learn where babies come from. He reiterates in conclusion that all the examples he cites are of normal children whose further development he has followed for years, some into mature life. Physicians are constantly asked for advice in this field, and they can tranquillize and advise and ward off danger if they do not wilfully close their eyes to experience.

**Scorbutic Edema.**—Wallgren reports six cases of scorbutus in infants in which the capillaries became abnormally permeable, inducing what he calls invisible edema. He thinks

it must be regarded as a regular element in the clinical picture of scorbutus. It becomes manifest in the remarkable fluctuations in the infant's weight.

**Traumatic Malacia of the Brain in the Newly Born.**—Schwartz scrutinized the brain with special care in 110 infant cadavers during a recent six month period. In 105 cases, foci of hemorrhage and softening of brain tissue were evident. In the prematurely and still born, these lesions were macroscopic but in the infants born at term they were only microscopic. He ascribes these unexpectedly prevalent hemorrhagic foci to the injury from the differences in pressure to which the child is exposed during delivery. The blood is forced from the regions under the high intra-uterine pressure into the regions that have escaped from this pressure. The effect is like the aspiration into a vacuum cupping glass. The vessels may not be able to stand the strain. With cephalic presentation, the entire brain may have blood thus forced into it. The hemorrhages are found in the presenting region. In his study of 160 brains of all ages, fat granules in the cells in brain always signified pathologic changes. In normal conditions, fat granules are never found in the brain outside of the vessel sheaths. Interstitial encephalitis in the new-born is consequently a process of malacia resulting from injury during delivery. Stillbirths and asphyxia are due to this traumatic injury of the brain in many cases, and it may explain the diseases with tendency to spasms and paralysis. If the child survives obstetric rupture of the tentorium, it is left with a lesion which might well predispose to genuine epilepsy.

**Tuberculous Pleurisy in Children.**—This communication from Pirquet's service relates that 41.1 per cent. of 39 children traced to date after tuberculous pleurisy were found completely cured, and in 38.4 there were only slight traces of the disease. Only in 10.2 per cent. were severe or moderate changes found, traceable to the pleuritis. It is of tuberculous origin almost invariably in children. Of the total 78 cases, 13 terminated fatally, and the outcome is not known in 26. The prognosis is thus favorable on the whole, cicatricial changes almost all retrogressing in the course of time.

**The "Extinction" Skin Phenomenon in Scarlet Fever.**—Steinkopf obtained a positive result only in 83.7 per cent. of her forty-nine cases of scarlet fever tested. This *auslösch* phenomenon consists in the extinction of the scarlatinal eruption over an area about the size of one's palm when normal human serum is injected intracutaneously. A positive response in the first day or two of the eruption seems to be characteristic of scarlet fever. The eruption does not merely blanch; its elements all retrogress.

### Zeitschrift für Urologie, Leipzig

1921, 15, No. 1

\*Renal Tuberculosis with Outlet Closed. M. Böhringer.—p. 1.

**Tuberculosis of the Kidney with Obliterated Outlet.**—Böhringer adds 4 new cases to the 36 on record, and calls attention to the tendency of this pyonephrosis tuberculosa occlusa to heal spontaneously. He devotes over ten pages to tabulation of the details of the total of 40 cases. In his 4 cases the ureter was obliterated from the bladder to the kidney, and in 3 cases the pelvis was obstructed also with fat or fibrous tissue. The operation or necropsy confirmed the retrogression of the tuberculous process. No actual tubercles, no tubercle bacilli could be discovered. Operative measures were applied in all but one of the 28 women and 2 of the 12 men. Tuberculous cystitis and one shriveled kidney were the main features of the clinical picture as a rule. When the kidney was still large, the bladder had usually escaped involvement in the process. Although the focus is practically extinct, there is always danger of its flaring up, which justifies nephrectomy, while the latter hastens the healing of the bladder process. In one of the 4 personal cases, acute tuberculous meningitis proved rapidly fatal. It was evidently secondary to the almost extinct kidney focus in the man of 40. This recalls Simmonds' statement that 30 per cent. of the nonoperated cases of renal tuberculosis terminate in tuberculous meningitis. This does not occur in pulmonary tuberculosis in more than 5 per cent. of the cases. The



numerous bibliographic references on closed pyonephrosis contain no American names.

1921, 15, No. 2

Preparations of Male Pelvic Organs. H. Virchow.—p. 41.

\*Prostate and Roentgen Exposure of Testicles. M. Nemenow.—p. 45.  
Behavior of Musculature with Double Ureter. Krasa and Paschkis.—p. 49.

\*Endemic Cancer of Bladder in Bilharziasis. E. Pfister.—p. 51.

**Influence on the Prostate of Roentgen Irradiation of the Testicles.**—Nemenow experimented on dogs and found that the prostate became enlarged after exposure of the testicles to the roentgen rays. The seminiferous cells in the testicle atrophied while the Leydig cells proliferated, and he theorizes that the latter—as the producers of the internal secretion of the testicle—secrete more profusely as they proliferate, and this excessive secretion entails the hypertrophy of the prostate. This is analogous to clinical experience: As spermatogenesis dies out in elderly men, the Leydig cells proliferate and the prostate hypertrophies secondarily, as in the experiments on the dogs, the microscopic changes in the testicles being identical. He is now making microscopic examination of the testicles and prostate in all elderly cadavers to see whether they sustain his view. It warns, he adds, for the need of caution in accepting Steinach's operation which, unfortunately, he continues, was published too early.

**Endemic Cancer of the Bladder with Bilharziasis.**—Pfister remarks that since Fibiger's discovery that a nematode in the rat stomach may induce carcinoma, irritation from parasites as a factor in malignant disease has become a vital question. He analyzes the literature on the subject.

### Zentralblatt für Chirurgie, Leipzig

Oct. 8, 1921, 48, No. 40

Longitudinal Resection of Lesser Curvature for Ulcer. Kaiser.—p. 1454.  
Position of Arm in Splint for Forearm Fracture. Propping.—p. 1459.  
Arthro-Endoscopy. E. Bircher.—p. 1460.  
Operations for Torticollis. A. Schubert.—p. 1462.

### Zentralblatt für Gynäkologie, Leipzig

Oct. 1, 1921, 45, No. 39

Pathogenesis and Clinical Aspects of Leukorrhea. R. Schröder.—p. 1398. Conc'n.  
Case of Arsphenamin Poisoning During Pregnancy, with Fatal Issue During Puerperium. H. Lorenzen.—p. 1407.  
Decidua-like Growths on the Diaphragm. P. Geipel.—p. 1412.  
\*Apnea and Asphyxia in Cesarean Section Infants. H. Küstner.—p. 1414.

Oct. 8, 1921, 45, No. 40

Prolapse and Retroflexion of the Uterus. Mathes.—p. 1429.  
Interstitial Cells, Placenta Toxin and Eclampsia. Fellner.—p. 1435.  
Rare Etiology of a Cephalic Hematoma. E. Weinzierl.—p. 1441.  
Pelvic Enchondroma as Impediment in Childbirth. Baumm.—p. 1444.  
The Genesis of Hydrops Gravidarum. W. Gessner.—p. 1447.  
Treatment of Febrile Abortion. H. Hellendall.—p. 1448.

**Apnea and Asphyxia in Infants Delivered by Cesarean Section.**—Küstner had often noted that infants born after cesarean section were frequently in a condition interpreted as apnea. As it was uncertain whether the condition was in the nature of asphyxia or due to the effects of anesthesia, he performed cesarean section on two rabbits and a guinea-pig. Whereas the offspring of the nonanesthetized animals were lively immediately after birth, the young of anesthetized mothers were inactive, limp and bluish looking, reacting to skin irritation only by a gasp. After cesarean section on one rabbit with eight young, it was noted that each individual of the litter removed after the first was less active and more cyanotic than the previous one. From these experiments and after numerous clinical observations as well, Küstner feels justified in referring the apnea and many cases of asphyxia in infants, following cesarean operations on the mother, to the effects of the narcosis.

### Zentralblatt für innere Medizin, Leipzig

Oct. 8, 1921, 42, No. 40

Modification of My Gage for Capillary Pressure. E. Kylin.—p. 785.

### Mededeelingen v. d. Burg. Geneesk. Dienst, Batavia

1921, No. 1. Parallel Dutch-English Edition

\*Malaria Epidemic Traced to Sinensis Mosquito. E. Walch and B. Walch-Sorgdrager.—p. 2.

Malaria Epidemic in Sumatra. W. Schöffner and B. Hylkema.—p. 48.  
\*Proper Dose of Chenopodium. W. Schöffner and H. Vervoort.—p. 92.

1921, Part 2

Purification of Water with Lime. Jan Smit.—p. 1.

**Malaria Traced to Sinensis Mosquito.**—In the epidemic described, although the sinensis was mainly responsible, the ludlowi and kochi could also be incriminated. In the middle of May the ludlowi began to appear in much larger proportions, but the infection index of the few kochi was remarkably high. The epidemic was quite mild, but only further observations will show whether this is a feature of sinensis epidemics.

**Preferable Technic for Administering Chenopodium.**—Schöffner and Vervoort found that much better results were obtained with fractioned doses, in their 400 cases, than when the drug was given at a single dose. They do not give a laxative beforehand, but insist on a light, digestible meal as the last for the day before, and give the drug in the morning on an empty stomach. They always give it with a laxative, but Cajus and Mhaskar have reported a series of 117 cured cases in which no laxative was given afterward, and the helminths were effectually banished, with no toxic by-effects. This experience justifies further experiments in this line although, they add, chenopodium cannot be regarded as a harmless medicine.

### Kitasato Archives of Experimental Medicine, Tokyo

October, 1921, 4, No. 3

\*Japanese River Fever in Formosa and Japan. R. Kawamura and M. Yamaguchi.—p. 169.  
\*Nature of Paralysis Due to Polished Rice Disease in Domestic Fowls. G. Kato, S. Shizume and R. Maki.—p. 207.  
\*Spread of Tetanus Toxin and Serotherapy. R. Kobayashi.—p. 217.  
Cholera in Japan. Y. Watanabe, M. Kawatani and H. Watanabe.—p. 281.

**Tsutsugamushi Disease in Formosa.**—There was only one death among the sixteen cases encountered in Formosa, the mortality thus being lower than in Japan although the disease otherwise seemed to be the same. The article is in German and profusely illustrated, and the blood findings, etc., are tabulated.

**Nature of Paralysis Due to Polished Rice Disease in Fowls.**—Kato's experiments have demonstrated, he says, that adsorption of hydrogen ions is the cause of the deficiency disease in domestic fowls. The article is in English.

**Point of Attack and Spread of Tetanus Toxin.**—Kobayashi injected tetanus toxin at various points in rabbits, and concludes from his observation of the results that the toxin is absorbed from the focus into the lymphatic spaces of the peripheral nerves. Part spreads thence to the peripheral nerve fibers while the remaining part is transmitted still farther centrad and attacks the spinal motor nerve cells. Thus the point of attack is the whole of the neurons of the peripheral motor nerves. Powerful antitetanus serum injected into the subarachnoid space, as early and in as large a quantity as possible, is the logical treatment. The article is in English, and eighty-five bibliographic references giving titles in full are appended.

### Acta Chirurgica Scandinavica, Stockholm

Nov. 16, 1921, 54, No. 2

\*Renal Pyuria Without Bacteria. G. Söderlund.—p. 101.  
\*Pulmonary Embolism in Child. N. Wessén.—p. 123.  
\*Duplication of Ureters. E. Brattström.—p. 132. Id. G. Vidfelt.—p. 137.  
\*Dilatation Test for Appendicitis. E. Jerlov.—p. 145.  
\*Resection of Chest Wall for Sarcoma. E. Key.—p. 168.  
\*Subcutaneous Rupture of Tendons. S. von Stapelmohr.—p. 177.

**Pus in Kidney Urine Without Bacteria.**—In Söderlund's three cases of abacterial renal pyuria the clinical picture was the same in all. The patients were robust men of 26 to 45, and the onset was insidious in all, merely more frequent desires and a smarting in the urethra during and after micturition. These were the only symptoms at any time in two of the men; the third complained for a time of pains in the back over the kidney region, but the only objective symptom throughout in all was the pus in the urine. These cases differ



so materially from ordinary colon bacillus and staphylococcus nephritis that some other origin seems plausible; it is possible that some poison from without or within, eliminated through the kidney might injure them to the extent of pus production. The cystitis observed sustains this possibility.

**Pulmonary Embolism in Child.**—The fatal pulmonary embolism developed late in convalescence after resection of ribs in treatment of pleural empyema in a boy of nearly 4. In Petrén's compilation of 369 fatal postoperative cases of pulmonary embolism, not one was younger than 15, as also in Gautner's compilation of 23 cases consecutive to pleuritis with effusion. Rupp recently published a study of 601 nonoperative—internal—fatal cases of pulmonary embolism, and 11 were in children exhausted by severe illness with more or less involvement of the heart. Wessén thinks it probable that the heart was the source of the embolism in his case, the heart having been much displaced by the extensive empyema.

**Double Ureters.**—In Brattström's case there had never been any disturbances from the four separate ureters in the woman until eleven years after her third childbirth. The pus in the urine and pains for the last six months led to an exploratory operation. This revealed the two ureters functioning normally in each kidney, and the symptoms all subsided thereafter. He was able to introduce a catheter in each of the four ureters. (In English.) In Vidfelt's case there were two ureters on one side, and this kidney was movable and had twisted. After nephropexy the pyelitis soon healed.

**Bastedo's Dilatation Test for Chronic Appendicitis.**—Jerlov insufflated the bowel with air in 100 cases in which chronic appendicitis was known (62 cases) or suspected, and devotes fourteen pages in tabulation of the details. The negative findings were constantly confirmed by the course of the cases, and in the positive cases the response became negative after appendectomy. A positive response was never obtained in the absence of appendicitis, but the findings were negative in 46 per cent. of the chronic cases; in 10 per cent. of the chronic cases with an acute exacerbation; in 7 per cent. of the ulcerative and gangrenous cases. With peritonitis, the response was positive in all the three cases with 33 mm. mercury. (In French.)

**Resection of Chest Wall for Sarcoma.**—Key and Jacobæus have long emphasized the advantages of inducing pneumothorax, preceded and followed by roentgenoscopy, preliminary to operating on the chest. Key here describes a case of extensive resection of the chest to remove a sarcoma. The preliminary measures advocated above had not been taken as it was intended to operate under differential pressure. Nodules were found on pleura and lung and the resection had to be much more extensive than planned; 27 cm. of both the fifth and seventh rib and 29 and 13 cm. of the sixth and eighth. As soon as the wound was closed, the air was aspirated by suction apparatus from the pleural cavity. The results of the operation were good, and the young man seemed to feel very little inconvenience from the loss of such an extent of the chest wall. The article is in English and illustrated.

**Subcutaneous Rupture of Tendons.**—Stapelmoor has encountered a case in which the extensor pollicis longus was ruptured when the man of 56 was run over by an automobile. The function of the thumb was restored by slitting the abductor pollicis tendon and utilizing the 6 cm. strip thus obtained to bridge the gap in the extensor pollicis. In 2 other cases the rupture occurred spontaneously from four to ten weeks after fracture of the radius or dislocation of the wrist, always after a fall on the hand. He compares these with 8 similar cases on record, and remarks that the connection with the primary trauma was not suspected at first as the interval had been so long. In some of the cases the impotence of the thumb was the only symptom. Treatment can be only operative, at least with total rupture of the tendon. Spontaneous gaps in the tendon may heal under expectant treatment if there is no synovial sheath; otherwise not. In one of the 10 cases described the tendon stumps could be sutured together and replaced in the sheath. The operation followed the rupture in five days with complete restitution. In another

case the stumps were sutured the sixth day but the muscle had contracted so much that the sutured tendon could not be replaced in its sheath. This shows the advantage of operating early, although the experiences related show that the muscle is functionally capable for at least eight months after rupture of a tendon. Worsley bridged a gap of 4 cm. in the extensor pollicis longus with connective tissue five years after the rupture, and Camitz a gap of 8 cm. in the tibialis posticus tendon with a strip of fascia lata after an interval of eight years, both with excellent functioning. If the trophic center is still existent, atrophy from disuse never entails total loss of the muscle elements. All kinds of material have been used to bridge the gap, but slitting another tendon near by seems the preferable technic.

## Acta Paediatrica, Stockholm

June 20, 1921, 1, No. 2

\*Spasmophilia. I. W. Wernstedt.—p. 133.

\*Iron Metabolism in the Prematurely Born. A. Lichtenstein.—p. 194.

\*Mixed Diet During First Year of Life. I. I. Jundell.—p. 240.

**Spasmophilia.**—Wernstedt's long study of the spasmophilic diathesis has apparently demonstrated, among other things, that the protein-free whey is the element in cows' milk that is responsible for the spasm-inducing action it sometimes displays. An artificial mixture of the same salts, in the proportion in which they are found in milk whey, also increased the tendency to spasmophilia. It is not an anaphylaxis but a salt action—a disturbance in the metabolism of salts. He adds that research should not be restricted to the parathyroids in studying spasmophilia, but other endocrine glands should be investigated in their relation to tetany. (In German.)

**Iron Metabolism in the Prematurely Born.**—The anemia of the prematurely born seems to be a regular physiologic element in their unripe condition. Breast milk does not contain enough iron to make up for the insufficiency of the blood-producing apparatus. Extensive experiments to supply iron to the infants were only slightly successful, only a small portion being absorbed and retained, but even this was a great gain. (In German.)

**Mixed Diet for Infants.**—Jundell analyzes the outcome in an orphan asylum in which 382 infants during the second half of the first year were given mixed food, and the development of the children was compared with the 2,186 given only the ordinary infant feeding, during the years 1914-1918. The amount of milk with the mixed feeding was restricted to 300 or 550 c.c., and the minced meat or fish or scrambled eggs or vegetables were minced extremely fine. His conclusions are all in favor of giving mixed food to healthy infants in the third quarter of their first year. This feeding in certain cases seemed to have a very favorable effect on the development of the child. This should be borne in mind, he says, when infants of 9 months and over do not seem to be developing well on the ordinary methods of feeding. (In English.)

## Ugeskrift for Læger, Copenhagen

Oct. 27, 1921, 83, No. 43

\*Quinidin in Auricular Fibrillation. G. Fløystrup.—p. 1389.

Complete Heart Block in Fatal Diphtheria in Boy. C. Schwensen.—p. 1395.

Fluctuations in Declining Death Rate. P. Heiberg.—p. 1397.

The Acridin Dyes in Dermatology. A. Kissmeyer.—p. 1399.

Sweat Band Dermatitis. A. Brønnum.—p. 1402.

**Quinidin in Auricular Fibrillation.**—Fløystrup found that quinidin cured the auricular fibrillation in two cases of heart disease of twenty-two and twenty-three years' standing, but it had no effect in three other cases. He insists on the necessity for giving heart tonics, especially digitalis, to get the heart into the best possible condition before starting the quinidin, for two reasons: One reason is that the quinidin reduces the strength of the heart; the other reason is that the drug is effectual in about 66 per cent. of the cases with good compensation. At the same time, he warns not to give digitalis enough to slow the heart too much, as quinidin retards it still further. If stimulation is required during the quinidin treatment, it should be with camphor or caffeine, not digitalis. Quinidin is most effectual when the auricular fibrillation is of recent development.



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## THE PREVENTION OF THE DEVELOPMENT OF RICKETS IN RATS BY SUNLIGHT

STUDIES ON EXPERIMENTAL RICKETS: XIV \*

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## HISTORICAL: LIGHT IN THE CURE OF RICKETS AND TETANY

In 1904, Buchholz<sup>1</sup> published a paper on the treatment by means of light of rickets and certain other diseases occurring in children. He used the "Glühlicht" (Kellogg) which, he stated, was poor in chemically active rays. The heat rays were in part absorbed by a special kind of glass filter interposed between lamp and patient. He considered that the action of the lamp depended in part on the heat rays, in part on the light rays. Whatever the exact composition of the light may have been, Buchholz reported favorable results from its use in rickets. Altogether he treated with it sixteen rachitic children. They all showed general improvement. They ate and slept better; they became more active and began to walk. Sweating of the head decreased, and their backs became straight. The work of Buchholz seems to have commanded little, if any, attention.

The fact that the development of the healing process in the bones of rachitic children could be traced by means of the roentgen ray has been understood in Germany for a number of years. In 1910, in an atlas devoted to rickets Fraenkel and Lorey<sup>2</sup> published roentgenograms of the bones of rachitic children to illustrate all stages of healing and of healing and relapse. Under

these circumstances it is remarkable that the roentgen ray was not earlier employed to detect the therapeutic effects of drugs and other forms of treatment in diseases affecting the skeleton. Phenister,<sup>3</sup> in this country, applied the method to the study of the effects of phosphorus on growth and ossification in health and disease (1918), and to its use Huldschinsky owed the success of his efforts in demonstrating that the light emitted by the mercury vapor quartz lamp exerts a curative action in rickets.

In a preliminary communication, which appeared in June, 1919, Huldschinsky<sup>4</sup> reported that the ultraviolet ray exerted a curative action in rickets. His material consisted of four children, aged between 2¼ and 4¼ years, who had advanced rickets. Three rachitic children, untreated with the quartz lamp, served as control subjects. After four weeks of treatment, calcium deposition at the ends of the long bones of the extremities could be demonstrated in roentgenograms, and at the end of two months the healing process seemed to be almost complete. Huldschinsky complicated the interpretation of the results of the experiments by the daily administration of 1 gm. of calcium phosphate. Since, however, the rachitic children who were not irradiated failed to show any evidence of calcium deposition in the skeleton as the result of the calcium phosphate administration, Huldschinsky concluded that the beneficial effects were to be attributed entirely to the ultraviolet ray.

In December, 1918, Winkler<sup>5</sup> reported the favorable effects of treatment of rickets with the roentgen ray. He used a medium soft tube at a focal distance of about 20 cm. The exposure did not exceed ninety seconds, and was repeated every other day. The treatment was at first directed against the craniotabetic lesions of the head. After five or six treatments, Winkler observed that the sweating of the head came to an end and sleep was improved. As the treatment progressed, laryngospasm and the "tendency to convulsions" disappeared. The craniotabes vanished. The teeth erupted. Bulgings of the costochondral junctions disappeared. Calcium deposition occurred at the ends of the radius and ulna, as was plainly evident in the roentgenograms. Winkler's work seems to have been done without knowledge of the work of Huldschinsky.

In April, 1920, Putzig<sup>6</sup> corroborated the findings of Huldschinsky. He does not state the number of

\* Read before the American Child Hygiene Association at the Twelfth Annual Meeting at New Haven, Conn., Nov. 2-5, 1921.

1. Buchholz, E.: Ueber Lichtbehandlung der Rachitis und anderer Kinderkrankheiten, Verhandlungen der Gesellschaft für Kinderheilkunde in der Abteilung für Kinderheilkunde der 76 Versammlung der Gesellschaft Deutscher Naturforscher und Aerzte in Breslau, 21:116, 1904.

2. Fraenkel, E., and Lorey, A.: Archiv und Atlas der normalen und pathologischen Anatomie in typischen Röntgenbild, Hamburg, Lucas Gräfe and Sillem, 1910.

3. Phenister, D. B.: The Effect of Phosphorus on Growing, Normal and Diseased Bones, J. A. M. A. 70:1737 (June 8) 1918.

4. Huldschinsky, K.: Heilung von Rachitis durch künstliche Höhen-sonne, Deutsch. med. Wchnschr. 45:712, 1919.

5. Winkler, F.: Ueber die Strahlungstherapie der Rachitis, Monatschr. f. Kinderh. 15:520 (Dec.) 1918.

6. Putzig, H.: Die Behandlung der Rachitis mit künstlicher Höhen-sonne, Therap. Halbmonatschr. 8:234 (April) 1920.



rachitic children treated by means of the quartz lamp, but observes that he effected cures through its use in premature infants suffering from rickets. In the same month, Huldshinsky's findings received further confirmation from Karger.<sup>7</sup>

In May, 1920, Huldshinsky<sup>8</sup> reported the results of more extensive investigations of the effects of the ultraviolet ray in rickets. His material had now been increased to thirty children. He administered calcium phosphate or calcium chlorid to twenty of the children, but to ten did not give calcium in any form. In some of the thirty children treated the rickets was recent, in others of long standing; the ages of the children varied between 1½ and 6½ years. In all, healing was accomplished in from twenty-two to twenty-six treatments covering a period of two months. As the result of his further investigations, Huldshinsky concluded that there could be no longer any doubt that the ultraviolet ray exerted a specific therapeutic influence in rickets.

In July, 1920, Riedel<sup>9</sup> further confirmed Huldshinsky's findings in a series of 100 rachitic children.

In September, 1920, Sachs<sup>10</sup> reported that treatment with the ultraviolet ray cured latent tetany. His evidence consisted in the disappearance under treatment of the mechanical and electrical excitability of the peripheral nerves. His conclusions were based on the result of treatment in seven cases. No medication was given.

In the same month Huldshinsky<sup>11</sup> reported cures of manifest tetany by means of irradiation with the quartz lamp. No medication was given. After the first application of the rays, the manifest symptoms disappeared. In no case did the laryngeal stridor or the convulsions recur. The latent symptoms, i. e., the Chvostek and the characteristic electrical reactions, disappeared within four days in one case, but lingered in the other cases for from two to four weeks. By this time the number of rachitic children cured by Huldshinsky through the use of the quartz lamp had risen to 105.

In August, 1921, Sachs<sup>12</sup> reported the cure of eight children having severe tetany, by means of the ultraviolet ray.

In May, 1921, Erlacher<sup>13</sup> reported the cure of rickets in forty-two cases by means of treatment with the

ultraviolet ray. The subjects varied in age from 1 to 7 years, and presented all the symptoms and were in all stages of the disease. The number of treatments necessary to effect a cure varied between forty and sixty. Marked general improvement was noted coincidentally with the healing of the rickets.

In June, 1921, Mengert<sup>14</sup> announced the successful use of the quartz lamp as a prophylaxis against rickets. His work, which is not impressive, consisted in the treatment with the quartz lamp of eighteen infants, aged between 1 and 2 months. One infant was 2½ months old. Ten were premature. Some died from intercurrent disease before the prophylactic treatment was complete. No one of the children treated developed rickets as determined by the roentgen ray.

In January, 1921, Hess and Unger<sup>15</sup> reported the cure of rickets in six children by means of the ultraviolet ray. They conceived of the possibility of the curative action of the ultraviolet ray in rickets in 1917

and actually treated with it at that time six children. Unfortunately, however, they failed to discover that the treatment was valuable. They did not use roentgenographic evidence of healing at the ends of the long bones of the extremities, which was objective and measurable. In 1920 they first described these experiments performed in 1917:

Infants in glass cubicles were not spared more than those in the regular wards. With this question in mind, in the spring of 1917 five children were given daily treatments of violet ray, the mercury vapor quartz lamp being used for this purpose. Their entire bodies were exposed for twenty minutes, so that they soon became brown, as if well tanned by the sun. This therapy, which was carried out with regularity for three months in infants about 1 year of age, did not lead to a definite improvement in the rickets, nor did it benefit their general condition. Violet ray cannot be considered the equivalent of heliotherapy.

But the fact that rickets is exceptional in the arctic region, where there is a lack of sunlight for the greater part of the year, is a strong argument against its predominant influence.

Moist, foggy climates were regarded by Glisson<sup>16</sup> as an etiologic factor in the production of rickets in children.

The true value of sunlight as a therapeutic agent in rickets was set forth by Palm<sup>17</sup> in 1890 as the result of a noteworthy topographic study of the incidence of the disease. We quote the remarkable recommendations for the eradication of rickets from the community which form the conclusion of his article:

14. Mengert, E.: Ueber vorbeugende Höhensonnenbestrahlung gegen Rachitis, *Deutsch. med. Wchnschr.* **47**: 675 (June) 1921.
15. Hess, A. F., and Unger, L. J.: The Clinical Rôle of the Fat-Soluble Vitamin: Its Relation to Rickets, *J. A. M. A.* **74**: 217 (Jan. 24) 1920.
16. Glisson, F.: *De rachitide*, London, 1650.
17. Palm, T. A.: The Geographical Distribution and Aetiology of Rickets, *Practitioner*, London **45**: 271 and 321, 1890.

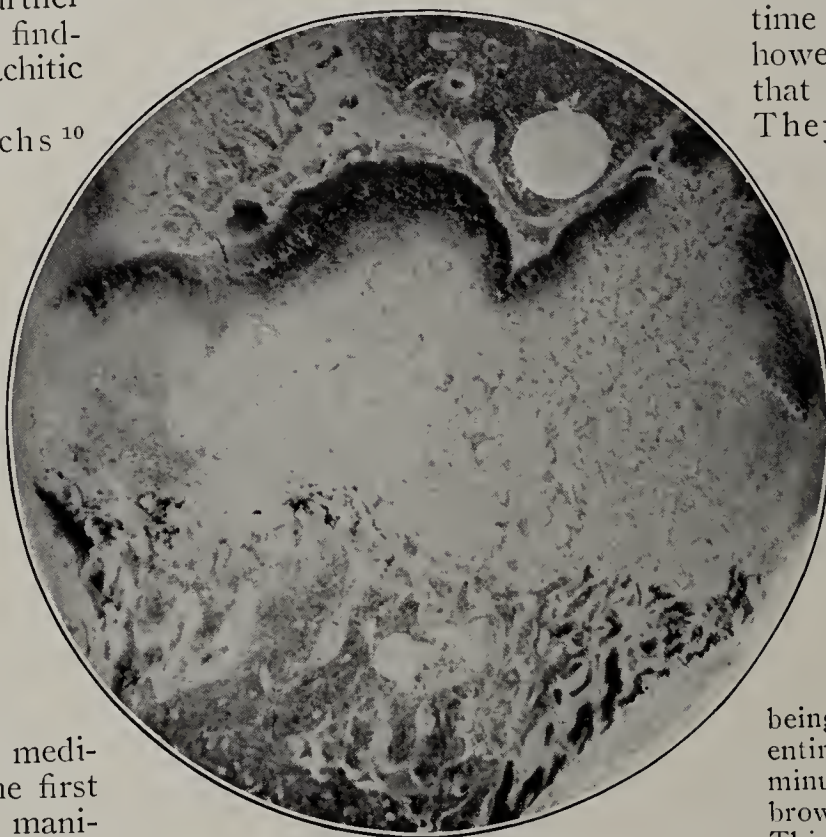


Fig. 1.—Photomicrograph of a rachitic bone from a control rat which was fed Diet 3143 and not exposed to sunlight. The epiphyseal cartilage is uncalcified and a broad intermediate zone or metaphysis has formed between it and the shaft. There is a pathologic overproduction of osteoid tissue in the shaft.

7. Karger, P.: Zur Kenntniss der zerebralen Rachitis, *Monatschr. f. Kinderh.* **18**: 21, 1920.

8. Huldshinsky, K.: Die Behandlung der Rachitis durch Ultraviolettbestrahlung, *Ztschr. f. Orthop. Chir.* **89**: 426 (May) 1920.

9. Riedel, G.: Die Erfolge der Quarzlichtbestrahlung bei Rachitis, *München. med. Wchnschr.* **67**: 838 (July) 1920.

10. Sachs, F.: Untersuchungen über den Einfluss des Ultraviolettlichtes auf die latente Säuglingstetanie, *Jahrb. f. Kinderh.* **93**: 167 (Sept.) 1920.

11. Huldshinsky, K.: Die Beeinflussung der Tetanie durch Ultraviolettlicht, *Ztschr. f. Kinderh.* **26**: 5 (Sept.) 1920.

12. Sachs, F.: Die Heilung der Säuglingstetanie durch Bestrahlung mit Ultraviolettlicht, *München. med. Wchnschr.* **68**: 985 (Aug.) 1921.

13. Erlacher, P.: Ueber Heilerfolge bei Rachitis nach Quarzlichtbestrahlung, *Wien. klin. Wchnschr.* **34**: 241 (May) 1921.



In conclusion, as practical results of this inquiry, I would urge the following:

1. The establishment of means for having systematic and exact records of the sunshine in the heart of our great cities as well as at favorite health resorts. A sunshine recorder at an observatory on some hilltop near a large city is no guide to the amount of sunshine that reaches the streets and alleys of smoky cities. It is important that the sunshine recorder be of the form which indicates the chemical activity of the sun's rays rather than its heat.

2. The removal of rachitic children as early as possible from large towns to a locality where sunshine abounds and the air is dry and bracing.

3. The establishment of a sanatorium for poor rickety children in some such locality, where the severe development of the disease may be averted, and much life and health saved by timely treatment.

4. The systematic use of sun-baths as a preventive and therapeutic measure in rickets and other diseases.

5. That when a mother has once borne a child which has become rachitic, preventive treatment of the disease in her future children should be adopted if possible by change of climate and mode of life in the mother, nothing urged above being inconsistent with the belief that the mother's state of health brought about by the same causes predisposes her offspring to rickets.

6. The education of the public to the appreciation of sunshine as a means of health. Many persons seem to prefer darkness to light in their dwellings out of ignorance, thoughtlessness, or even an economic regard for carpets and curtains. Let people understand that sunlight in the dwelling not only reveals unsuspected dirt, but is Nature's universal disinfectant, as well as a stimulant and tonic. Such knowledge will also stimulate efforts for the abatement of smoke, and for the multiplication of open spaces, especially as playgrounds for the children of the poor.

Experimental evidence for the favorable action of sunlight on the mineral metabolism was furnished by Raczynski<sup>18</sup> in 1912. On account of its importance, we quote Raczynski's brief communication in its entirety:

There are numerous investigations which have had as their object the determination of the etiology of rickets, but there exists none which consists in an experimental inquiry into the action of the sun in that disease.

Daily experience and statistics show that the greatest number of cases of rickets are found in the months following the winter, i. e., in March, April and May.

The statistical records of rachitic breast fed infants aged between 3 and 11 months appearing at the children's outpatient department at Leopold give a curve which begins to ascend in January, rises sharply in the months following, and attains its height in May, to fall rapidly in June.

The attempt is made to explain these generally recognized facts by improper hygienic conditions, such as impure air and damp, ill ventilated lodgings in which the infants of the poor live during the winter. But we often encounter rachitic children in the same months of the year among our patients who live under the most favorable hygienic conditions.

There are again many other facts which lead us to say that it is the sun which plays the principal rôle in the etiology of rickets.

The following experiment lends support to our thesis:

Two puppies born of the same mother in May were reared for six weeks, the first in the sunlight from morning to evening, the second in absolute darkness in a large, well ventilated cage. Both were nourished in the same manner; that is to say, they were both exclusively suckled by their mother. At the end of six weeks the puppies were killed and their bodies were examined from a chemical standpoint.

I have looked for Ca, P, Mg, Cl and Fe, and have estimated them per 100 grams of body weight:

	In the Case of the Dog Reared in Sunlight Gm.	In the Case of the Dog Reared in Darkness Gm.
CaO ...	1.578	0.978
P <sub>2</sub> O <sub>5</sub> ...	1.192	0.862
MgO ..	0.054	0.041
Cl ....	0.162	0.347
Fe ....	0.017	0.019

The table shows the body of the dog reared in the darkness contained less CaO and P<sub>2</sub>O<sub>5</sub> than the body of the dog reared in the sunlight; and that a diminution of CaO and P<sub>2</sub>O<sub>5</sub> in the organism is a characteristic evidence of rickets.

It is possible to assume that the lack of action of the sunlight by influencing in so unfavorable a manner the assimilation of CaO in the young organism is one of the causes of rickets. This is in complete accord with clinical experience.

In a recent letter to the *British Medical Journal* in criticism of the conclusions arrived at by Paton, Findlay and Watson,<sup>19</sup> on the etiology of rickets, Neve<sup>20</sup> called attention to the fact that rickets was exceedingly rare in Srinagar (India), where infants live under the worst conditions of hygiene and diet, but where sunlight, to which they are almost constantly exposed, abounds. He stated that the only case of rickets which he had seen there was in an English child. A cure took place when the gloomy house in which the patient

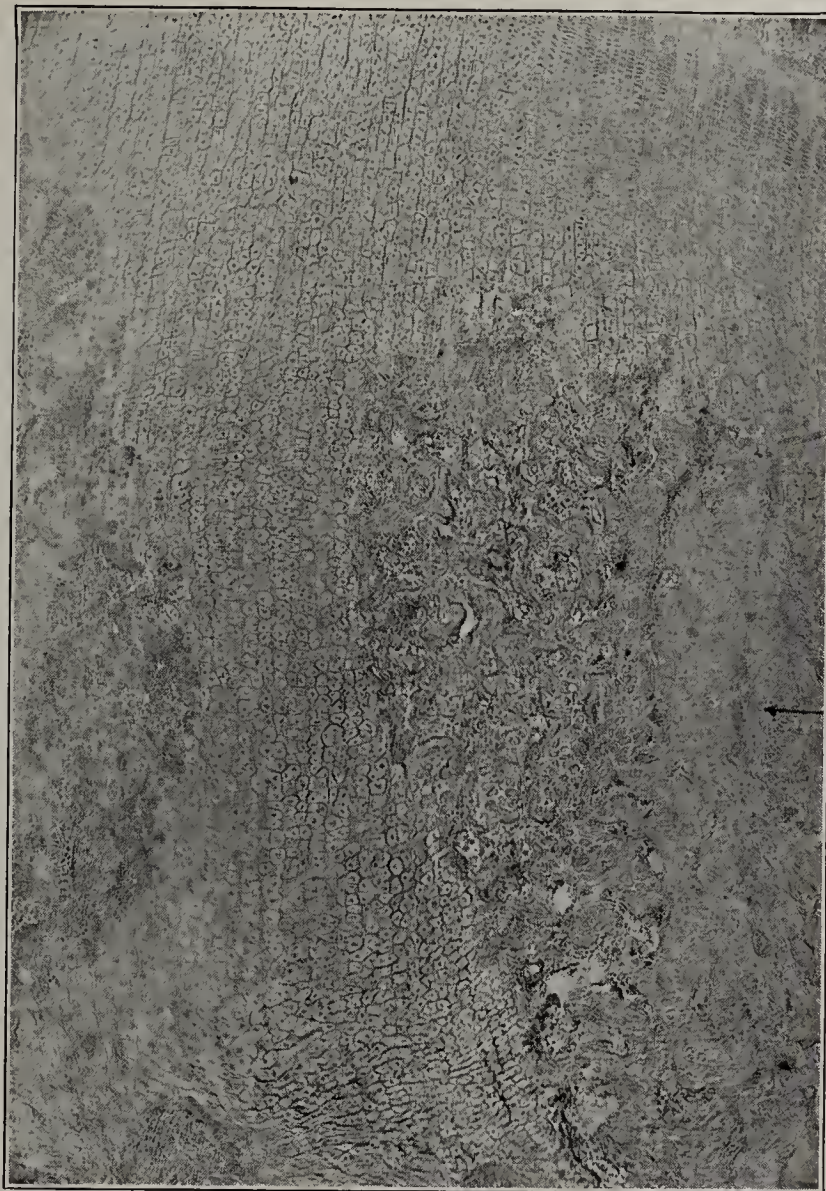


Fig. 2.—Section of a bone from a control animal at the epiphyseo-diaphyseal junction, showing severe rachitic lesions. This animal had been fed for two months on Diet 3143. The picture shows the abnormal persistence of the cartilage and its invasion by blood vessels from the shaft and marrow elements. There is a pathologic formation of osteoid tissue in which cartilage cells (indicated by arrow) are embedded.

18. Raczynski, J.: Communications sur le rachitisme: I. Recherches experimentales sur le manque d'action du soleil comme cause du rachitisme, Compt. rend. de l'Association internationale de pediatrie, 1912, p. 308.

19. Paton, D. N.; Findlay, L., and Watson, A.: Observations on the Cause of Rickets, Brit. M. J. 2: 625 (Dec. 7) 1918.

20. Neve, E. F.: The Etiology of Rickets. Brit. M. J. 1: 518, 1919.



lived was exchanged for one which was well lighted by the sun.

The favorable effect of sunlight in rickets as determined by clinical observation has been recently emphasized by Feer.<sup>21</sup> He called attention to the marked benefit which accrued in rickets from exposure to the sun's rays in the Swiss Alps. He made reference to the excellent results which had been obtained in the treatment of rickets with sunlight during the past ten years at the Zurich Sanatorium, and also to the investigation of Neumann<sup>22</sup> in 1909 in regard to the incidence of rickets and tetany in the Swiss Alps. Neumann had pointed out the great rarity of both rickets and tetany in Arosa, 1,740 meters (5,709 feet) above the sea level, and its frequency at Davos, at an altitude of 1,560 meters (4,285 feet) and only four and one-half hours distant. At Arosa the children lived for a large part of the time outdoors; but in Davos they lived largely indoors under the crowded conditions which are found generally in cities.

Huldschinsky made use of sunlight together with the ultraviolet ray in two cases of his series, and Riedel relied on treatment with sunlight in some of his cases, supplementing with the quartz lamp only on sunless days.

Hess and Unger<sup>23</sup> were the first, so far as we are aware, to demonstrate by means of the roentgen ray that sunlight alone possesses the same curative action as the light of the quartz lamp in the rickets of human beings. They state that they exposed five infants with rickets to the direct action of sunlight for periods varying from one-half hour to several hours daily, whenever the sunlight was available. Different parts of the body were in turn subjected to the action of the sun's rays. In one of the cases the patient was exposed to the sunlight only on seven occasions for a total period of twenty-five hours. The general condition of the infants, as well as the diseased condition in the bones, was benefited. Calcification at the cartilage-shaft junctions of the bones of the extremities occurring in the course of the treatment was determined by the roentgen ray.

#### EXPERIMENTAL: THE PREVENTION OF RICKETS IN THE RAT BY SUNLIGHT

All the investigations which have been made up to the present time in regard to the curative effects of both

the ultraviolet ray and sunlight in rickets have been made on human subjects of the disease, and all the evidence has been furnished by means of the roentgenogram. In order to satisfy ourselves concerning the action of light in rickets as well as actually to see the changes produced in the bones, we performed the following experiments:

Eighteen rats about 6 weeks old and weighing between 40 and 50 gm. were placed on Diet 3143 which, as previous experience<sup>24</sup> has shown, produces rickets comparable in every respect to the rickets manifesting itself in human beings. The ration has the following composition: wheat, 33; maize, 33; gelatin, 15; wheat gluten, 15; sodium chlorid, 1; calcium carbonate, 3 per cent. It contains nearly twice the optimal content of calcium, and is decidedly below the optimum in its content of phosphorus and in fat-soluble A. Otherwise, it is well constituted.

Twelve rats placed on this diet were sent to New Haven, there to be exposed to sunlight. The remain-

ing six rats were retained in Baltimore to be kept as control animals under ordinary laboratory conditions in a large, well ventilated room completely screened with windows of ordinary glass. The animals treated with the sunlight were divided into two groups and placed in fairly large wire mesh cages. Each clear day the cages were carried outdoors and placed in the sunlight. At first, the weather being warm, the rats were exposed to the sunlight for two short periods of twenty minutes each. Soon, however, the periods

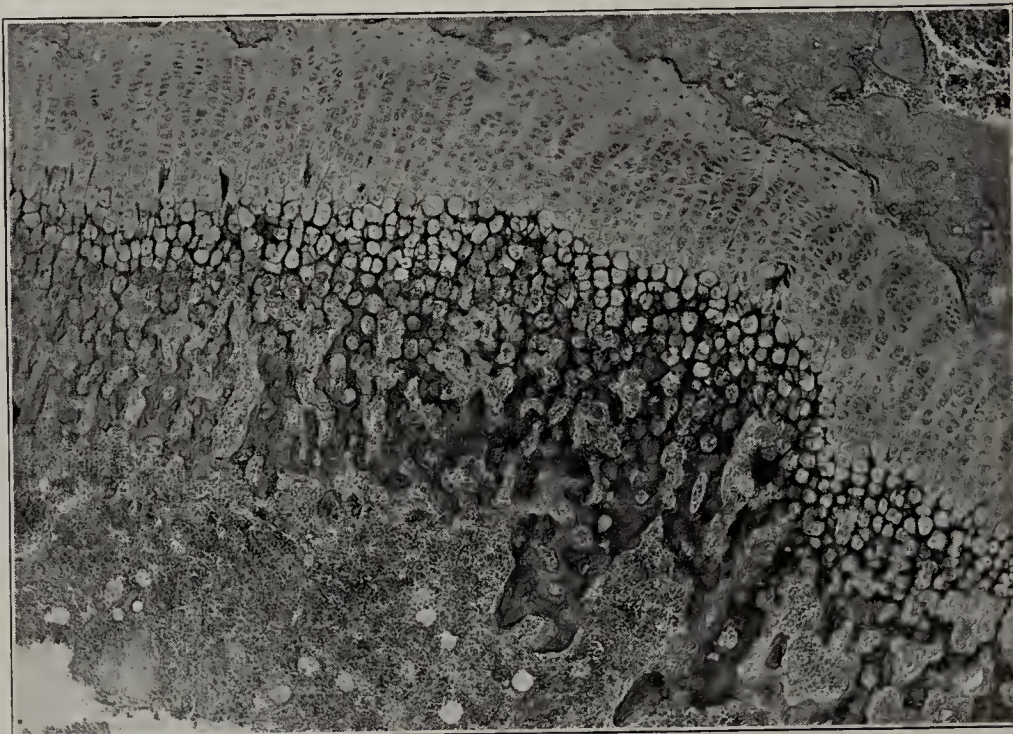


Fig. 3.—Section from a long bone of a rat which had been on the same diet (3143) as the control shown in Figure 1. The cartilage is narrow, regular and well calcified. The marrow is normal, and the bony trabeculae of the shaft, while somewhat fewer than those of a normal bone, are well calcified and show evidences of normal osteoblastic activity. This animal was exposed to sunlight in the manner described in the test.

were lengthened to six or even more hours. During the experimental period, which covered between sixty-two and sixty-seven days, the rats were exposed to the sunlight on every day except nine. The total exposure to sunlight varied between 242 and 273 hours. The average daily exposure was four hours.

When first exposed to sunlight, the albinos developed conjunctivitis; the ears of all, in particular the albinos, began to peel; the skin of the tails became sunburned and rough; the hair of some of the albinos acquired a yellowish tint. Long before the experiments were completed, it became evident that the animals treated with sunlight were not developing rickets. Though they did not grow normally, they remained extremely active, climbing and darting about the cages. Toward the end of the experiments they became sexually active; one of the females became pregnant.

21. Feer, E.: Die Einwirkung des Höhenklimas auf das kranke Kind, Schweiz. med. Wehnschr. 51: 438, 1921.

22. Neumann, H.: Der Säugling im Hochgebirge, Deutsch. med. Wehnschr. 35: 2167, 1909.

23. Hess, A. F., and Unger, L. J.: The Cure of Infantile Rickets by Sunlight, J. A. M. A. 77: 39 (July 2) 1921.

24. McCollum, E. V.; Simmonds, Nina; Shipley, P. G., and Park, E. A.: Studies on Experimental Rickets, VIII, The Production of Rickets by Diets Low in Phosphorus and Fat-Soluble A, J. Biol. Chem. 47: 507, 1921.



The control rats, killed at the expiration of two months, showed all the gross and microscopic evidences of rickets, the characteristic deformities of the thorax, enlargement and distortion of the costochondral junctions, fractures of the shafts, and enlargements at the wrists, ankles and knees, and the ends of all the long bones. The bones cut with diminished resistance. On section, a deep rachitic metaphysis entirely free from calcium was exposed. Into it the proliferative cartilage extended in irregular prolongations. The trabeculae were surrounded with broad zones of osteoid.

The rats exposed to the sunlight, on the other hand, showed none of the evidences of rickets. The thorax was not deformed; the costochondral junctions were normal. There were no fractures of the ribs. The ends of the long bones were not enlarged. The long bones cut with great resistance. On microscopic examination the cartilage was normal. The proliferative zone was completely calcified. The trabeculae were completely calcified. The condition found was normal, except that both microscopically and grossly the bone was more delicate than in the rat of corresponding age reared on satisfactory diets. Though the sunshine completely prevented the development of rickets, it did not entirely compensate for the deficiency of phosphorus in the diet, as regards the growth and development of the rat as a whole or of the skeleton.

There were some noteworthy findings outside the skeleton. An abundance of fat was present. In the control rats the fat was scant. The thymus was only partially involuted. The spleen was not enlarged.

The improvement in the general condition in our animals which were exposed to the light of the sun was convincing evidence that the effect of light was not on the skeleton alone. Sunlight obviously had a profound effect on every cell in the organism.

#### COMMENT

Sunlight effectually prevents the development of rickets in the rat. We have already shown, as has also Pappenheimer, that cod liver oil prevents the development of rickets in the rat. As nearly as we can judge from the roentgenograms furnished by Hulschinsky and others, the mode of healing at the cartilage-shaft junction induced by the ultraviolet ray (or sunlight) is exactly analogous to that which occurs after the administration of cod liver oil, as determined by How-

land and Park.<sup>25</sup> The time relations are also similar. Hulschinsky found that the ultraviolet ray produced definite evidences of healing at the end of four weeks, and at the end of two months almost complete healing. Howland and Park found that cod liver oil first gave rise to evidences of healing at the junctions of the cartilage and shaft of the long bones three weeks after the administration was begun, and that at the end of about two months the calcification of the diseased ends of the shafts seemed to be complete. Moreover, as the result of the gross and histologic examinations made on the rats fed the rickets-producing diet, 3143, but exposed to sunlight, it is possible to say that the changes produced by sunlight in the skeleton do not differ in any

important respect from the changes produced when the animals are kept in room light but on a diet supplemented by cod liver oil.

When cod liver oil is supplied to rats living in room light on diets well supplied with calcium but deficient in phosphorus and lacking in fat-soluble A (and possibly another factor), it brings about an improvement in the animal which is general. If the defects in the diet are not so severe as to preclude the possibility of any favorable effect at all, cod liver oil promotes growth, muscular development and the storage of fat; it improves the condition of the hair and stimulates sexual activity and reproductive power. The rat becomes more active and approximates more nearly the normal animal. It is obvious that cod liver oil does not act on the skeleton alone. Its effect on the calcification and growth of the skeleton is merely the manifestation of its effect on a single tissue.

What we have just said in regard to cod liver oil, we may say, apparently with equal truth, in regard to sunlight. Sunlight, when supplied to the rats living on diets defective in their salt composition, as specified above, and in a factor or factors present in cod liver oil, brings about a general improvement in the condition of the animal. It promotes growth, muscular development, the accumulation of fat, the growth of the hair, sexual activity, and reproductive power. The rat becomes active, eats more food, and approximates closer the healthy animal. It has been no accident that

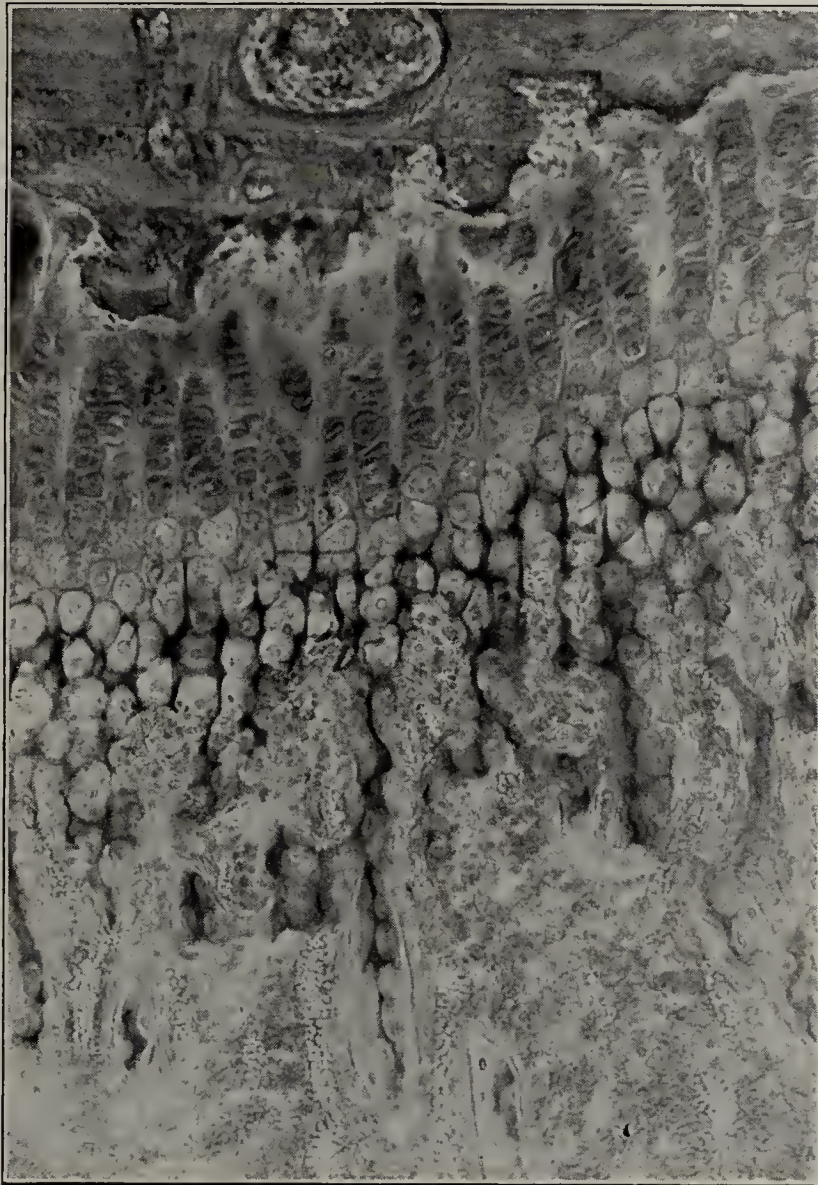


Fig. 4.—Epiphyseodiaphyseal junction of a bone from a rat on a rickets-producing diet, but exposed to sunlight. Note the complete calcification of cartilage and trabeculae.

25. Howland, John, and Park, E. A.: Some Observations on Rickets, *Arch. Pediat.* **37**: 411, 1920: The Radiographic Evidence of the Influence of Cod Liver Oil in Rickets, *Bull. Johns Hopkins Hosp.* **32**: 314, 1921.



sunlight has been found to exert a favorable effect in tuberculosis, in anemia, in the condition commonly referred to as the "exudative diathesis," in the treatment of surgical wounds and burns. Light cannot be thought of, any more than can cod liver oil, as acting on the skeleton alone. Though the deposition of lime salts which it causes affords a most striking, visible and measurable evidence of its action on the skeleton, its favorable influence there is probably not greater than its favorable influence elsewhere.

The experiments that we have reported have a biologic significance which extends far beyond the cure of rickets. Cod liver oil contains and light embodies something which is essential for optimal cellular function. Cod liver oil, or light, when made available to an animal previously deprived of them, permits the organism to put into successful operation mechanisms which otherwise would have been ineffectual. Neither cod liver oil nor light meets the defect in the composition of the diet directly by supplying to the body either calcium or phosphorus. Both must meet them indirectly, in a manner at present unknown, by so activating or altering the processes of the body as to secure a more efficient utilization of those substances which are directly or indirectly concerned with ossification and calcification. We do not believe that the diversity of favorable effects obtained from the therapeutic use of cod liver oil or of light can be explained in any other way than on the theory that by improving the efficiency of the organism it enables the organism to work with increased economy and to deal successfully with the exigencies of environment.

Our experiments indicate that diets which are defective at room light or in darkness may cease to be defective in the presence of active light rays, and, conversely, that diets which are satisfactory in the sunlight may become unsatisfactory at room light or in darkness. It would seem that diets which suffice for the maintenance of optimal health during a life in darkness may supply an amount of dietary factors unnecessary for an individual who is irradiated by sunlight. From this point of view it becomes necessary to think of certain factors which can be taken into the body in the food as being able to compensate for deprivation of light, and of light as being able to compensate for the deprivation of certain dietary factors. The experiments suggest, therefore, that throughout the animal and perhaps also

the vegetable kingdom there may be balances between the amounts of active light required and the amounts of certain food essentials requisite for the maintenance of health. Under the abnormal conditions imposed on animals by domestication or on man by civilization, it may be necessary to supply more light to replace the lack of certain dietary essentials or to increase the latter to compensate for deprivation of light. For example, the negro, because of his heavily pigmented skin absorbing light less readily than the white man, may require more light or, not receiving it, more of the corresponding factor or factors in the food, in order to maintain an optimal condition of health (e. g., to prevent the development of rickets). The available supply of light must be considered in the future in planning

diets for prisoners, miners and all other individuals who are deprived of their exposure to light by occupation or other circumstances.

Our experiments indicate in a broader sense that just as we live in an atmosphere of air and breathe air, so we live in a medium of light and, so to speak, breathe light. That is, light, like air, is absorbed, and in some way influences cellular function.

While one group of students of rickets has been groping for proof that the cause of the disease lay in physical conditions, another group has been too intent on the proofs of the curative properties of a dietary factor contained in cod liver oil for the proper consideration of other possibilities. Two factors, to all external appearances of a totally different nature, one contained in cod liver oil and the other in light, are operative in the prevention and cure of rickets. This fact explains, in part at least, the confusion that

has arisen concerning the etiology of the disease.

We do not regard the etiology of rickets as a solved problem. We do not doubt, however, that the demonstration of the curative action of light in rickets is a substantial step toward the complete understanding of the cause of this disease. Experiments with rats by Sherman and Pappenheimer<sup>26</sup> and ourselves<sup>27</sup> have

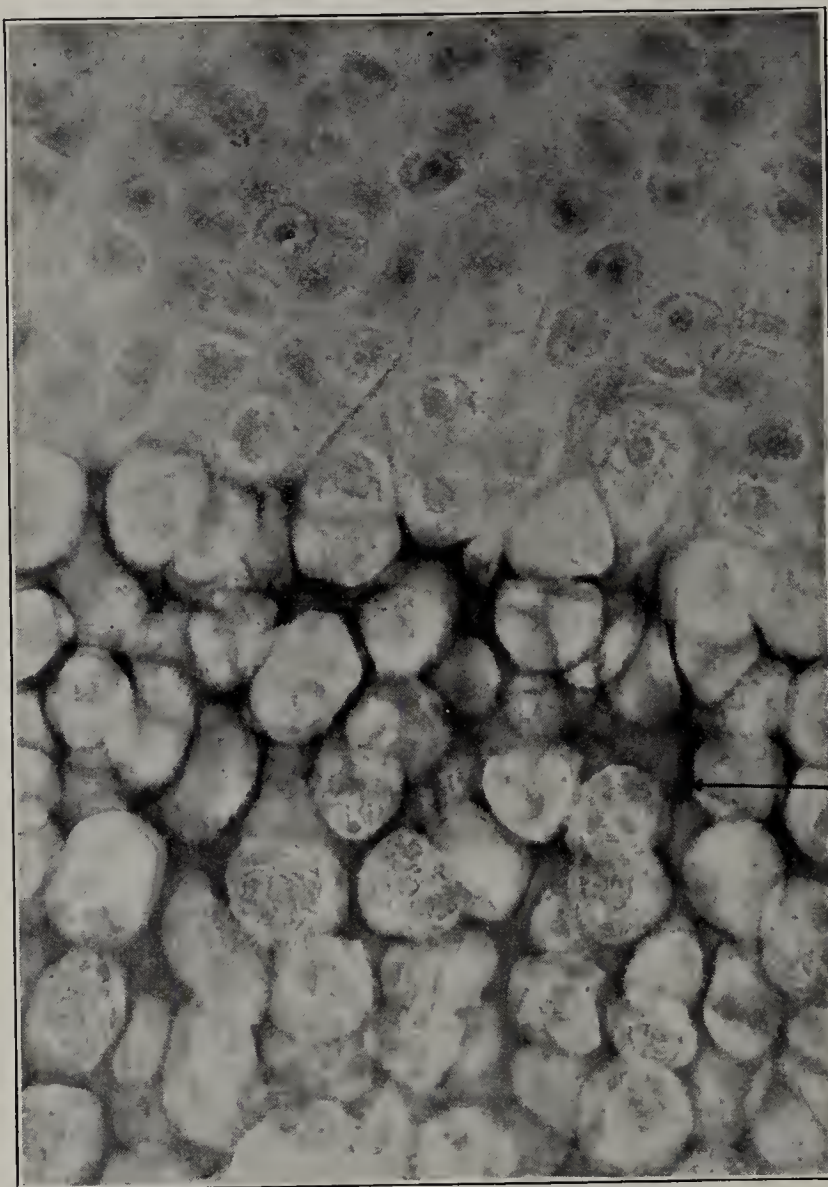


Fig. 5.—Highly magnified cartilage from the provisional zone of calcification of the bone of a rat exposed to sunlight while on a rickets-producing diet. This picture shows the deposit of lime salts between the cartilage cells (indicated by arrow).

26. Sherman, H. C., and Pappenheimer, A. M.: Experimental Rickets in Rats, I, A Diet Producing Rickets in White Rats, and Its Prevention by the Addition of an Inorganic Salt, *J. Exper. Med.* **34**:189 (Aug.) 1921.

27. Shipley, P. G.; Park, E. A.; McCollum, E. V., and Simmonds, Nina: Studies on Experimental Rickets, III, A Pathological Condition Bearing Fundamental Resemblances to Rickets of the Human Being Resulting from Diets Low in Phosphorus and Fat-Soluble A: The Phosphate Ion in Its Prevention, *Bull. Johns Hopkins Hosp.* **32**:160 (May) 1921.



shown that, in the absence of certain light rays and of a factor or factors contained in cod liver oil, a disease indistinguishable from the rickets of human beings may be produced through a deficiency of phosphates in the diet. Rickets so produced may be cured by cod liver oil or prevented by certain light rays. We have also shown that in rats fed on a diet in which the phosphate ion is sufficiently abundant, rickets does not develop even in the absence of certain light rays and of a factor or factors contained in cod liver oil.

Thus, experimentation with the rat makes it appear that deficiencies in light or in a factor or factors contained in cod liver oil do not cause rickets but rather permit defects in the inorganic composition of the diet to become effective. The disease is chiefly the expression in the skeleton of the disturbance of the inorganic metabolism in question. Our experiments have indicated that the function of light and of a factor or factors contained in cod liver oil, so far as rickets is concerned, is to exert a regulatory influence over the mineral metabolism of the body having to do with ossification and calcification. When the body is deprived of the regulatory action of certain light rays and of a factor or factors contained in cod liver oil, such disturbances in the inorganic metabolism of the body are permitted to develop.

As a result of these experiments with rats there is not the slightest doubt in our minds that either rickets or osteomalacia could be made to develop in human beings deprived of the protective influence of light rays and the dietary factor or factors contained in cod liver oil as easily as in the rat through similar alterations in the salt composition of the diet. Indeed, it may be that human beings are especially sensitive to even slight disturbances in the relations of the inorganic constituents of the diet when lacking the protective influence of light and the factor or factors contained in cod liver oil.

Our experiments with the rat, therefore, make us think that in many instances the development of rickets in the human being may be due primarily to abnormal relations between certain mineral constituents of the diet; i. e., the disease has a purely exogenous origin. We are not at all certain, however, that the disease always has an exogenous origin. We think it probable, indeed, that rickets in some instances has an endogenous origin. It seems likely that in human beings, especially when deprived of the protective influence of certain light rays and of a factor or factors contained in cod liver oil, the mineral metabolism may be disorganized from causes operating within the body in such manner as to give rise to rickets.

#### SUMMARY

1. The object of the experiment was to determine whether or not sunlight prevents the development of rickets in the rat.

2. A diet was employed which at room light regularly gives rise to a disease in its essential features identical with rickets as seen in human beings. The diet was high in calcium, low in phosphorus and was insufficiently supplied with fat-soluble A. In other respects it was well constituted.

3. Eighteen rats were placed on the diet. Twelve were exposed to sunlight for a total of 242 hours over a period of sixty-two days. Six were kept under conditions of ordinary room light as control animals.

4. The control rats, killed with ether at the end of sixty days, all showed rickets.

5. The rats exposed to sunlight, killed coincidentally, remained without exception entirely free from rickets. The absence of the lesions of rickets was confirmed by histologic examination.

6. The beneficial effects of the sun's rays were not limited to the skeleton, since the condition of the animals underwent a general improvement under the influence of the treatment with sunlight. The effect of the sunlight on the skeleton was a manifestation of its favorable effect only on a single tissue.

7. The exposure to the sun's rays, however, did not entirely compensate for the defects in the diet. The animals remained undersized; the bones, though completely calcified, remained thin. Though the sunlight did not alter the defects in the diet, it permitted the animals to thrive to a limited extent in the presence of them.

8. It is necessary to conclude, therefore, that the sunlight in some way raises the efficiency of the body cells. It enables the organism to put into operation regulatory mechanisms which otherwise would have been inoperative or ineffectual.

9. The effects of sunlight and of cod liver oil on the growth and calcification of the skeleton and on the animal as a whole seem to be similar, if not identical.

### PURPURA FULMINANS DURING CON- VALESCENCE FROM SCARLET FEVER\*

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In a rather superficial review of the literature of the last twenty years, reports of about fifty cases of purpura hemorrhagica and of purpura fulminans associated with scarlet fever have been found. Of these fifty cases probably less than half have been of the fulminating type.

There seem to be many conditions in which purpura may appear. According to Crocker,<sup>1</sup> it may occur in the course of specific fevers, especially in typhus, variola hemorrhagica and epidemic cerebrospinal meningitis, and, less often, in typhoid fever, measles, scarlet fever and septicemia. He holds that there is much evidence of the importance of toxins, whether of bacterial or other origin, in the production of probably all the severe forms of purpura, and of many of the milder forms. That the purpura is probably due to bacterial action is indicated by its occurrence in connection with well recognized bacterial diseases, by its appearance in groups of cases, and by the fact that in a few instances bacteria have been found in the blood.

There is little doubt that rupture of the vessels takes place in the majority of instances. This probably is preceded by an obstruction of the vessel. A common cause of this condition is thrombosis, which may follow injuries to the vessel wall by the action of toxins alone, or by the bacteria themselves, injury by the bacteria being probably the more common. Such a thrombosis, infectious in character, will tend to alter seriously

\* From the laboratory of the City Hospital.

1. Crocker: Diseases of the Skin, Philadelphia, P. Blakiston's Son & Co.



the vessel wall. According to Adami, the primary change is in the endothelium of the vessels, with degenerative processes taking place in the walls, followed by rupture and hemorrhage. Some clinicians have thought that the hemorrhages have occurred too rapidly to be the result of degenerative changes; but it has been proved that the endothelium may show alterations within a few minutes after the introduction of toxins. As will be shown later, the microscopic picture of the tissues in our case reveals the vascular changes that are considered the cause of the hemorrhages.

Concerning purpura in the course of scarlet fever, Crocker mentions the occurrence but gives no references. Osler refers to purpura fulminans, and says: "In this very rare variety, ecchymoses extend with startling rapidity, and within a few hours an entire extremity or the greater part of the trunk may assume a blue or reddish-black color. This disease usually ends fatally in from eighteen to forty-eight hours, and no patient has recovered." He mentions three cases occurring during convalescence from scarlet fever, in two of which hemorrhagic bullae formed.

Stevenson,<sup>2</sup> in 1912, made quite a thorough review, and found that only thirty-three cases of purpura associated with scarlet fever had been reported by American and foreign writers. He overlooked a few references, and others have been reported since then, but probably not more than fifty altogether.

In view of the great number of cases of scarlet fever that exist throughout the world, it is evident that this complication is distinctly unusual. Stevenson quotes some rather interesting statistics. His patient was seen during an epidemic of about 250 cases. Voelcker (1905) reports that in 4,926 necropsies at the Children's Hospital in London, there were but fifteen cases of purpura hemorrhagica following infectious diseases of all kinds. Rolleston and McCrerrick,<sup>3</sup> in discussing their case, state that "of sixty-four cases of purpura fulminans published to date, seventeen have followed scarlet fever, the ecchymoses occurring usually in the second, third or fourth week of the disease."

Seven additional cases have been reported, and the appearance in all has been about the same. The patient as a rule has been convalescing from scarlet fever when the ecchymoses suddenly appeared. There seems also to have been some relationship between the time of appearance and the severity of the case.

In the instance reported by Bertling,<sup>4</sup> a healthy man, aged 18, awoke with a sore throat. Within thirty-six hours, a typical scarlet rash appeared. The following

noon a bluish-black discoloration was noted on the upper part of each thigh and the lower part of the abdomen. The discoloration extended rapidly, and the patient died within seventeen hours after the appearance of the purpura and about seventy hours after the appearance of the first symptoms. At the other extreme is the case of Biernacki and Dykes.<sup>5</sup> A boy, aged 6, had an attack of scarlet fever and recovered completely. In the seventh week following, he had a moderate attack of tonsillitis, streptococcic in character, from which he recovered in two days. At the beginning of the eighth week, a purpuric patch, 4 inches (10 cm.) in diameter, appeared suddenly on the outer side of the right ankle. The question comes up as to whether this should be considered a sequel of scarlet fever or of the streptococcic sore throat. The latter would seem more probable.

In many of the cases reported, there were no indications of involvement of the mucous membranes, no hematemesis, hematuria or bloody stools being noted. In others, these were present in varying degree. In but few instances were necropsies obtained. McCrerrick<sup>6</sup> found, in his case, that the ecchymoses extended to the deep fascia covering the muscles. No hemorrhages were found in the brain, suprarenals or other organs. There was a slight extravasation of blood in the perirenal tissue on the right side. Cultures made from the heart and the ecchymoses were sterile.

#### REPORT OF CASE

A report of the case that came under our observation is herewith presented:

M. T., a girl, aged 6, white, fairly well developed and nourished, was admitted to the hospital, April 27, her illness having developed the day before with a sore throat. The hands became swollen and painful, so that she could not hold anything. On admission, the temperature was 39 C. (102.2 F.); the pulse, 122; the respiration, 22. The physical examination was negative with the exception of the skin, which showed a faint but definite rash. The tongue was red and swollen, the papillae red and prominent. The pharynx and palate were intensely red.

The patient improved; the temperature returned to normal, and remained so for about a week. May 11, it suddenly shot up to 40 C. (104 F.). The patient's condition had been noted as not as good as before. She was drowsy most of the time and complained of pain in the feet. Her left foot became discolored, about half way up the dorsum, and very painful. No other areas of ecchymosis were noted. May 12, the temperature was down to 37 C. (98.6 F.) at 4 a. m., but went up to 40 C. (104 F.) at 4 p. m. The left foot had become much darker. The dorsalis pedis artery was not palpable, but there were pulsations in the popliteal artery. The right heel also was discolored. Early in the morning, the right forearm showed an ecchymotic area, which extended and became darker during the day. The forearm was swollen and very painful. A



Fig. 1.—Purpura fulminans: distribution of lesions on arms and hands.

2. Stevenson, E. C.: West. M. Rev. 17: 116, 1912.

3. Rolleston and McCrerrick: Brit. J. Child. Dis. 7: 58, 1910.

4. Bertling, F. E.: Case of Purpura Fulminans, J. A. M. A. 53: 383 (July 31) 1909.

5. Biernacki and Dykes: Brit. M. J. 2: 903, 1913.

6. McCrerrick: Brit. J. Dis. Child. 9: 154.



few small areas appeared on the neck. The urine, which had contained only a few red cells, was now almost pure blood. May 13, the temperature was 37.2 C. (98.9 F.) at 4 a. m. The last temperature, which was taken that afternoon, was 41 C. (105.8 F.). The patient's condition was very much worse and, in addition to the areas of ecchymosis already



Fig. 2 (same case as Figure 1).—Distribution of lesions posteriorly.

mentioned, the left ring finger, the tip of the nose, the left buttock and the back were involved. The distribution is shown very clearly in the accompanying photographs, which were made after death. The patient died, May 14. Smears and cultures made from the nose and throat did not show diphtheria bacilli. Blood cultures were negative.

#### NECROPSY FINDINGS

Multiple ecchymoses of skin, submucosa of bladder and of splenic flexure of colon were noted, and cloudy swelling of kidney with glomerulonephritis. There was an acute splenic tumor and hemorrhagic infarct of the brain. The tip of the nose, including the columna, showed a distinct purplish discoloration, with no apparent change in the epidermis. Its outline was indefinite, excepting inferiorly at the junction of the nose and lip, where it was sharp. The rest of the head was negative. The right forearm, a short distance from the elbow downward, and the hand were dark purple, swollen and covered with blisters. The largest of these bullae were in the palm of the hand. Some of those on the flexor surface of the forearm had ruptured, and from them a bloody fluid oozed. On the left forearm, there was a patch of discoloration similar to that of the other side but without blisters. This area, although covering almost the entire extensor surface, did not involve any of the flexor portion and did not extend beyond the wrist. The third finger of the left hand was dry and black. The left foot exhibited a similar patch of discoloration, sharply delimited on the dorsal surface at the metatarsophalangeal joints, involving all the toes and a large part of the sole. The right foot showed a more extensive involvement, the entire dorsum up to the ankle joint being discolored. Minute blebs were present on most of the toes. Posteriorly, the right buttock showed a very large and typical area, and a little distance above it a smaller lesion. The larger of the two was slightly ulcerated. Although all

of these lesions were distinctly localized, the actual edge was rather irregular, and a bluish discoloration, extending about 1 cm. ( $\frac{3}{8}$  inch) beneath the edge of uninvolved skin, was very apparent.

Examination of the abdomen revealed that the peritoneum was smooth and glistening throughout. No fluid and no adhesions were noted. A diffuse hematoma was present in the prevesical space, infiltrating the tissues of the anterior culdesac and of the lateral and posterior ligaments of the uterus.

A subperitoneal hematoma was present also at the splenic flexure of the colon, posteriorly.

The rectum contained two or three small areas of submucous hemorrhage in the lower portion. The mucosa was intact.

The submucosa of the bladder was enormously swollen and hemorrhagic, particularly at the base. The walls were very thick and of a dull rusty color.

In the left temporal lobe of the brain was a superficial area of softening. The tissues were red, hemorrhagic and friable, and the veins were filled with thrombi. The pia was also much injected. Neither the suprarenals nor other organs showed any hemorrhage or other gross abnormalities.

The microscopic examination of the heart, lung, kidney, spleen, pancreas and suprarenal revealed nothing abnormal so far as the blood vessels were concerned.

In the liver, there was present a well marked leukocytic infiltration, surrounding the majority of the portal vessels. Some of the larger vessels showed distinct swelling and vacuolation of the cells of the muscular coat, but no round-cell nor leukocytic infiltration was noted.

In several instances, the small portal vessels were occluded by masses of granular fibrin in which numerous mononuclear cells and a few leukocytes were enmeshed.

In some portions of the bladder the mucosa was destroyed. In the underlying tissues, there was a widespread hemorrhagic and leukocytic infiltration. Some of the smaller vessels contained thrombi.

In the section of the intestine examined, the mucosa was intact. Hemorrhagic and leukocytic infiltration of the submucosa with thrombosis of some of the smaller vessels was noted.

In the brain, the capillaries, many of which contained a large number of leukocytes, were greatly congested. In many, there was a distinct parietal mass of granular fibrin, the free lumen being filled with well preserved blood cells. In some, the obstruction was almost complete. In a few instances, there was an extensive perivascular infiltration by lymphocytes and leukocytes, with a conspicuous extravasation of red blood cells.

In a large vessel in the pia, one portion of its wall was much thickened by a leukocytic infiltration of the muscularis, accompanied by edema. The endothelium was missing entirely. On the side opposite the area mentioned above, the wall was destroyed almost completely. Immediately external to this was a large, quite well circumscribed mass of fibrin containing many red cells, masses of leukocytes and innumerable granules of broken down nuclei.



Fig. 3 (same case as Figure 1).—Distribution of lesions on lower limbs.



Examination of the skin revealed, in some of the smaller vessels of the subcutaneous tissue, an infiltration of the walls by leukocytes and a filling of the lumen by a mass of homogeneous material. The latter was, in places, adherent to the adjacent wall, blood cells being present in the unattached areas. A few of the larger vessels showed an increase in the thickness of the walls, as a result of edema. The microscopic picture in the above mentioned tissues was that of infectious thrombosis, associated with varying degrees of degenerative processes. The most conspicuous feature of the case was the skin lesion which, microscopically, was due to the tremendous infiltration of the subcutaneous tissue by red cells. The overlying corium showed slight hemorrhagic infiltration of the deeper layers but was otherwise negative, and the surface epithelium was unchanged. There was practically no degeneration of the tissues.

At first a diagnosis of gangrene was made, but the clinical course did not support that view. The lesions evidently were of hemorrhagic nature and were not accompanied by degenerative changes other than the formation of bullae. They did not appear primarily at the tips of the fingers or toes, but higher up on the arms and feet. The involved areas extended both upward and downward in a general way, but portions that were at one time intensely discolored became paler and, to some extent, cleared up. In his case, McCririck<sup>6</sup> noted that the larger areas developed in rings with a central area of healthy skin, which gradually was encroached on. A somewhat similar condition was noted in our case, around the inner malleolus of the right ankle. It was not involved, but was almost completely surrounded by ecchymotic tissue.

#### SUMMARY

The fifteenth day after the first symptom of illness, and the seventh or eighth day of normal temperature, the temperature went up suddenly to 40 C. (104 F.). The same day the patient's left foot became discolored, further ecchymoses appeared on the body in the course of some forty-eight hours, the urine and stools became bloody, and the fourth day after the first ecchymotic area was seen, the patient died.

The postmortem examination revealed, in addition to the skin ecchymoses, hemorrhages in the bladder, intestine and brain.

Microscopic examination revealed that the discoloration was not due to gangrene but to interstitial hemorrhages following infectious thrombosis.

**Virchow's Contributions to the Dictionary.**—Virchow used to say he was proud of the purity of his linguistic creations. The list includes leukemia, thrombosis, embolism, myoma, glioma, and myxoma. He also stated that he was the first to use the term "infectious disease." An editorial in the *Medizinische Klinik* comments on the way he used to dig into the history of a subject, and how he always expressed appreciation of the work of those who had preceded him. He complained that the "knowledge of young medical men nowadays never extends farther back than at most three to five years. What was published over five years ago simply does not exist for them."

## A REPORT OF FOUR RECENT CASES OF THORACOPLASTY

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AND

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During the last year, the American physician has shown renewed interest in the surgical collapse of the lung; and so few cases have been reported that we feel assured that the cases herewith reported will be of interest to those treating pulmonary tuberculosis. In this short paper, we cannot go into the early work of Karl Spengler (from 1890 to 1899), with whom one of us (Shortle) later had the honor of acting as assistant (during the winter of 1907 and 1908), further than to say that his success was not such as to encourage others in the use of his methods. Nor can we more than mention the work of Schede, Wilms and Friedrich in early operations, and others whose pioneer work finally led to the present day methods.

The failure of the early operations was probably due to a number of reasons:

First, the removal of almost all of the ribs on one side meant a bloody, prolonged operation, with accompanying shock, that many patients could not survive.

Second, the removal of practically one side of the chest wall resulted in an upset of the normal respiration, with the so-called mediastinal flutter, which, in some cases, resulted fatally in a short time.

One of us (Gekler) acted as assistant for eighteen months to Brauer, at Marburg, when he suggested the operation to Friedrich which now bears the latter's name. This

operation, greatly modified by Sauerbruch, has come to be the one generally adopted.

In America, the rapid spread in the use of artificial pneumothorax by the phthisiotherapist is, no doubt, largely responsible for the renewed interest shown in thoracoplastic methods. It has been found that in about 25 per cent. of the patients in whom artificial pneumothorax is attempted there are pleuritic adhesions so extensive as to prevent successful use of the procedure, so that in many very promising cases the benefit of that treatment cannot be received.

Samuel Robinson, now of Santa Barbara, Calif., Freeman of Denver and a few others operated in a few cases, ten or eleven years ago. The former, in several cases, performed the complete resection of the bony chest wall as advocated by Friedrich; and we

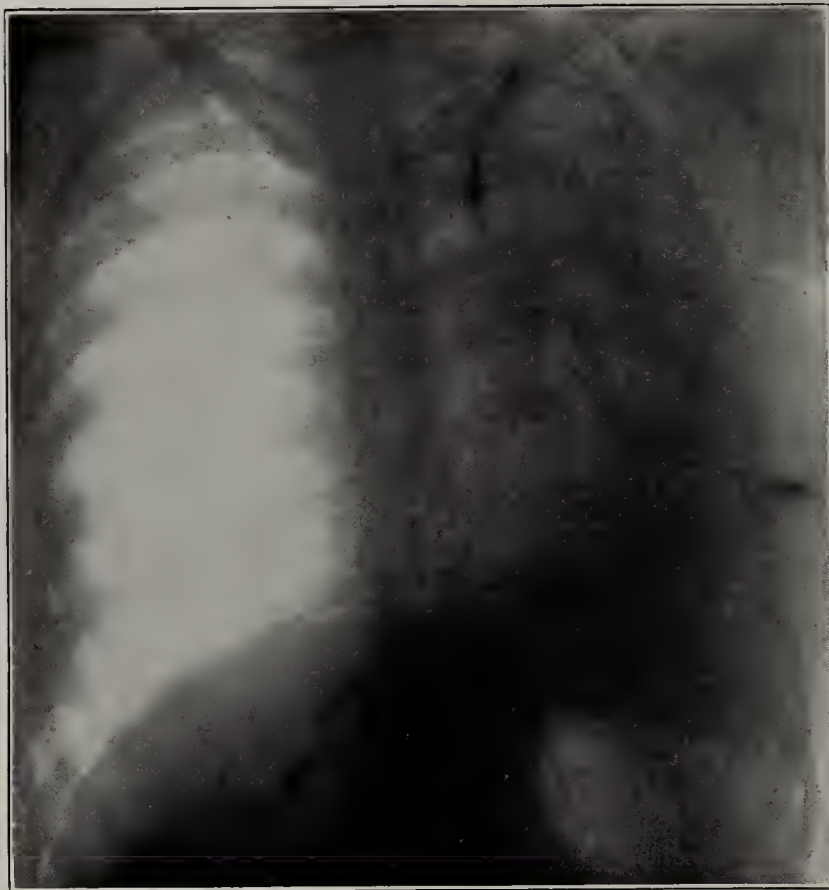


Fig. 1 (Case 1).—The right lung, one week before operation, showing well marked and general peribronchial thickenings, and finer shadows radiating from them, but of the linear type. The apex is comparatively clear. The left lung, owing to a thick pleura and to marked and general fibrosis on that side, shows only as a blurred, dense shadow. With the stereoscope, the large cavity in the upper lobe could be fairly made out. The contraction on that side, the shoulder droop, the absence of aortic shadow on the right side, etc., may be noted. Nature was trying to cause the lung to collapse.



know of one very excellent and remarkable result that he obtained. But in this country, as in Europe, surgeons have turned to the simpler and safer operation of Sauerbruch, which he devised in 1914.

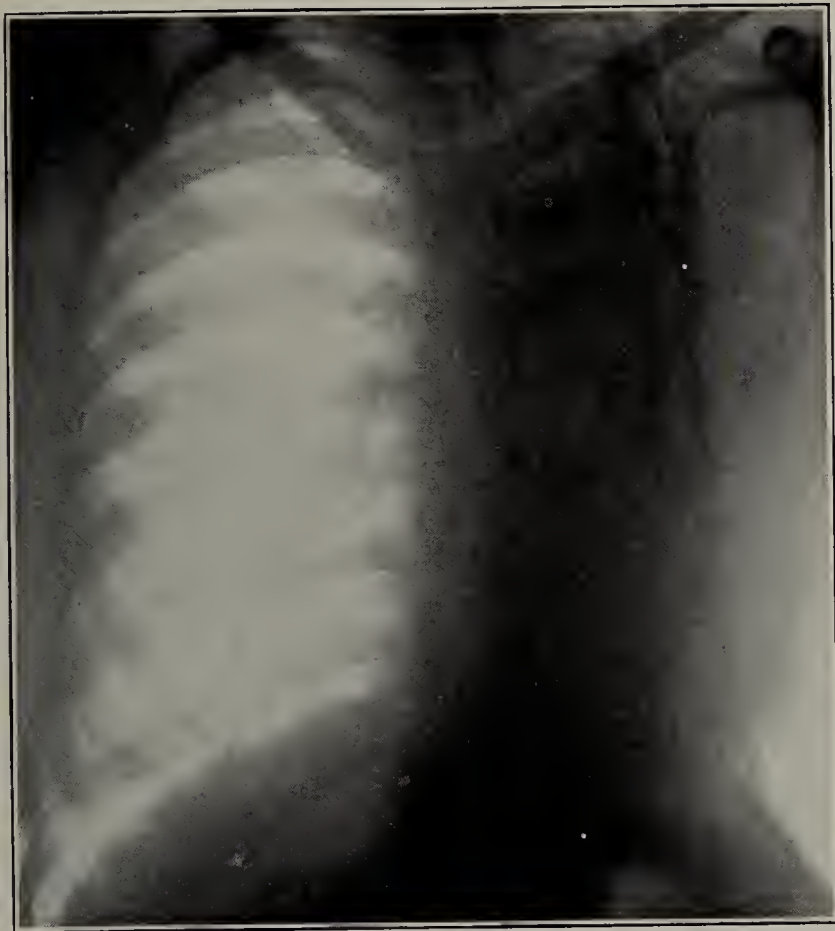


Fig. 2 (Case 1, sixteen months after operation).—Effective collapse of the left lung. When it is remembered that the heart is entirely on that side, it is evident that there is not much room for the lung. The position of the clavicle and the scapula may be noted. The right side is overexposed to get penetration on the left.

Ever since beginning to use artificial pneumothorax, ten years ago, we have contemplated accomplishing collapse in some of our inoperable cases by means of thoracoplasty; but we have delayed from year to year.

During the years of 1912 to 1914, one of us had three such cases in which operation was performed, using the Wilms operation of the six upper ribs. There was a brilliant result in one case; but the other two were not satisfactory. (This, no doubt, was because the collapse was not sufficiently complete—the lower part of the lung remaining entirely uncollapsed.) Ether was also used as an anesthetic, which we now think a mistake.

In May, 1920, we selected two suitable cases for operation and arranged with Dr. Freeman of Denver to operate. He performed a slightly modified Sauerbruch operation, resecting each rib from the first to the ninth, inclusive, removing from 6 to 8 inches (from 15.24 to 20.32 cm.) of the upper ribs, and being careful to get as large a section as possible from the first and second ribs. Each operation was performed in one sitting, instead of in two sittings, as Saugman and some others recommend. Gas-oxygen anesthesia was used.

Below is a brief history of the cases in which operation was performed by Dr. Freeman:

#### REPORT OF CASES

**CASE 1.**—A widow, aged 45, a teacher, whose previous health had been good, had pleurisy with effusion in 1910, and the same year was debilitated by frequent loss of blood from fibroid tumor of the uterus. In 1918, cough developed, and soon after, partial loss of voice. A diagnosis of pulmonary tuberculosis was made in September of that year. She was

referred to us and arrived in Albuquerque late the same month. On examination the entire left side of the chest showed râles after cough. The sputum was positive; and there was an afternoon temperature of from 99 to 99.5 F.

The disease was progressive; and all symptoms became slowly worse. In April, 1919, we attempted artificial pneumothorax, but found pleural adhesions at every point we made a puncture.

The patient returned East for three months, but came back to Albuquerque in November. She continued to get worse; and in February, 1920, she had acute appendicitis and was operated on with a local anesthetic. The appendix was found to be tuberculous.

By May, 1920, the patient had an afternoon rise of temperature from 100 to 101.5 F. every day. Twenty-four hour sputum was from 4 to 6 ounces (from 120 to 180 c.c.) and all symptoms were progressive. Moist râles were heard from the apex to the base, and there was a large cavity extending from the first to the third ribs.

She was operated on, May 18, 1920. Pain was marked for five or six weeks; but she was able to be propped up in bed after five weeks. Fever subsided after the first week. The temperature reached normal after four weeks and remained so thereafter. By October, she was able to walk to meals in the sanatorium and to walk a block or two, twice a day.

In July, 1921, the temperature was normal and the pulse ranged from 80 to 90. The patient weighed 135 pounds (60.75 kilograms), a gain of 20 pounds (9 kilograms). Sputum was reduced to less than 1 ounce (30 c.c.). She walked three quarters of a mile (2.14 kilometers), twice a day.

**CASE 2.**—A single man, aged 32, an instructor in a university, whose previous health had been good, developed cough and slight hoarseness in the winter of 1917, but continued to work. In January, 1918, a rise of temperature of between 99 and 99.5 F. developed, and laryngeal and pulmonary tuberculosis was diagnosed.

He came West in April, 1918. He was put on the usual rest treatment. There was some symptomatic improvement at first; but in August and September, high fever developed—the temperature rising to 103 F. in the afternoon; and a large cavity formed in the right apex. Probably as a result of the free drainage from the cavity, the temperature returned to normal in December, and remained normal most of the

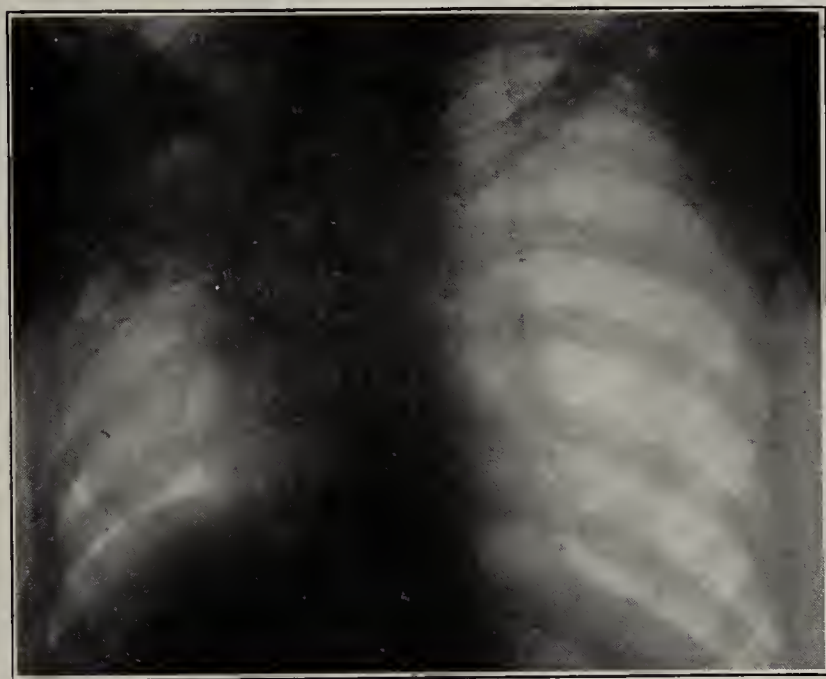


Fig. 3 (Case 2).—The right lung just before operation, showing Nature's effort to collapse this lung, the heart being drawn very markedly to the right. The single plate does not show the large cavity that extended from the first to third ribs, but the stereoscopic roentgenograms did. The right costophrenic angle appears fairly clear, which encouraged us in hoping that we could accomplish artificial pneumothorax; but adhesions were found everywhere.

time, but with periodic "flare-ups" until the operation in May, 1920. Sputum remained profuse, and physical signs were unimproved.

Following operation, the temperature rose to 103 F., but slowly declined to 99 F., persisting at that point for about



two months, and finally, subsiding to normal, where it has remained since. There was marked increase of sputum for the first six or eight weeks; then slowly it decreased from a daily average of 3 or 4 ounces (90 or 120 c.c.) to practically nothing.

The patient exercises now, and his weight is slightly above the former normal.

CASE 3.—A single woman, aged 30, developed symptoms of tuberculosis while in Alaska. She came back to the United States and entered a sanatorium in Oregon, then one in California; but she became progressively worse. She came to Albuquerque in June, 1918, at which time there was active tuberculosis of the left lung from the apex to the base, and there was a large cavity.

We started collapse of the lung almost at once, with most excellent results. After eleven months' treatment, the patient, who then was symptom free except for the lung collapse, returned to California. Then she drifted to Wyoming, and there, unable to receive the "gas," the lung partially reexpanded and relapse followed.

She returned to Albuquerque in June, 1920; and when we attempted to recollapse the lung, we found, as we expected, that it was not possible. We at once advised thoracoplasty; but the patient would not consent.

After six weeks of high temperature, ranging from 102 to 103 F., she asked that the operation be performed. It was our opinion that it was then too late. The patient, however, was insistent; and as it was her only hope, we arranged with Dr. Cornish to operate.

He used the same technic as that used by Dr. Freeman. There was healing by first intention; but heart incompetence developed and the patient died about nine weeks after the operation.

CASE 4.—An Australian rancher, aged 34, single, had pulmonary hemorrhage twenty-one years ago, and had had these hemorrhages at intervals ever since. He had had a chancre eighteen years previously. He came to California four years previously and entered a sanatorium for tuberculosis. He was treated there for two years. He came to New Mexico, and placed himself under our care, about eighteen months ago.

We thought first that his lung was syphilitic. The Wassermann reaction was + + + +; but the sputum was full of tubercle bacilli. He was first put on small doses of arsphenamin, which were gradually increased to heavy doses, but with only slight improvement in the lung condition. The patient, himself, suggested thoracoplasty as he had seen the good results in Cases 1 and 2.

This patient had râles following cough, extending from the apex to the second interspace and from the apex to the fourth dorsal spine, on the right; but the râles were fine and suggested an old, quiescent lesion. The left lung showed moist râles, extending from the apex to the base, with or without cough, with cavity signs at the third rib.

The most unfavorable symptoms were the evidences of a weak heart, a blood pressure rather low for even a tuberculous patient, and a bluish tinge to his complexion—suggesting poorly aerated blood.

Dr. Cornish, at my suggestion, resected only the lower seven ribs, expecting to resect the upper three later, hoping

in that way to lessen the shock and to place the load on the heart and uncollapsed lung a little at a time.

The patient developed dropsy and died of a weakened heart.

#### COMMENT

The study of these cases has led us to form some opinions that we hope may help us in the selection of future cases. Henceforth, we will select our cases and not let the patients make the decision, though this is not always easy to do. The really wonderful results in the two cases we had carefully selected show the importance of this. They go to prove that the theory of the operation is well founded. Indeed, the study of the accompanying roentgenograms shows that Nature herself was trying to collapse these lungs, as is evidenced by the deviated trachea, the displaced heart and mediastinum, elevated diaphragm, etc.

The operation is, of course, to be considered only after the safer and simpler artificial pneumothorax has been found impossible to perform. Then the indications are practically those of that operation except for the following limitations:

First, more care must be used in the choice of patients. The patient must be in better general condition physically than would be necessary in artificial pneumothorax, as the shock of operation is considerable.

Second, cases must be selected with more regard to the heart and to the opposite lung than is the case in the simpler operation, for in artificial pneumothorax, the burden is thrown on those organs a little at a time, through a month or more, while in surgical collapse, the load is thrown on them at once. Therefore, a good heart and a fairly good uncollapsed or working lung is essential.

It will be noted that in Case 4 the operation was to be performed in two stages in the vain hope that the patient in this unfavorable case might be able to survive the shock if the operation were performed in two stages. Saugman has for some years advised this; but recently, he has very largely abandoned it as he asserts that as a rule the single operation is tolerated as well as the two-step operation; and the cicatrices formed in the first step of an operation may interfere with the second step.

Gas-oxygen is the only general anesthetic to be considered; but I believe that in many cases local anesthesia, as described by Saugman, is preferable. This is particularly true if his claim that it limits the danger of pneumonia from aspiration can be substantiated. However, recently, according to his assistant Gravensen, he now supplements the procain-epinephrin by "ether inhalations not pressed far enough to abolish cough reflex." To us, this appears to be a matter of such delicate technic in anesthesia that we



Fig. 4 (Case 2).—Lungs sixteen months after operation. The left side is overexposed so that we could get penetration on the right. Collapse in this case not quite so complete as in Case 1; though symptomatic results are quite as good, or a bit better.



would hardly hope to attain it or, at least, to know when we had.

There have been those who have questioned the practice of elevating the periosteum before resecting the rib. The periosteum was left in all four cases, leaving a basis for bone regeneration. While this has occurred almost perfectly in Case 2, in Case 1 there is union only from the first to the fourth rib, inclusive; the other five ribs being quite free and "flapping" up and down with each respiration. Naturally, the collapse in this patient's lung is not so complete, or the rest of the part so good, as in Case 2. Evidently, careful elevation of the periosteum before resection is desirable.

It has been found necessary by some operators to supplement this operation by the resection of the first and second ribs in front, so as more completely to collapse the apex. Several procedures have been devised; but that recently described by Archibald of Montreal is probably the best.

We might add that to one unaccustomed to the reexpanded lung of artificial pneumothorax the physical findings in these two otherwise wonderfully successful cases might appear disappointing, for there are some fine râles following cough in the collapsed lung of both patients. While these are in part due, no doubt, to incomplete healing, it is to be remembered that these are cases of atelectasis on a large scale, if we are to put the correct interpretation on them. Every one who has followed a reexpanding lung, collapsed by artificial pneumothorax, has heard these râles.

#### CONCLUSION

We believe that since it is the internist who best appreciates the dangers of the operation and its effects, immediate and ultimate, he should be consulted at least at every step from the anesthetic to the after-treatment. Friedrich, the surgeon, not only accepted Brauer's suggestions in devising his operation, but operated only after considerable insistence on the part of the latter.

114 North Second Street.

**Value of Therapeutic Tests in Syphilis.**—Therapeutic tests, in general, have meaning only when the patient presents a definite, and, as far as possible, a visible pathologic lesion, on which quantitative estimates of improvement can be made. Mere gain in weight, disappearance of indefinite pains, malaise or nondescript subjective symptoms are usually meaningless. Iodid therapeutic tests, popular with the departing generation, are untrustworthy. So are arsphenamin therapeutic tests. Mercury is probably more nearly immune from such nonspecific effects than either iodids or arsphenamin, although it is well to recall its action in lichen planus, and in occasional cases of sporotrichosis. Carcinoma of the stomach makes false responses to arsphenamin alone and sometimes when this agent is administered in combination with mercury, a point which should be borne in mind when this therapeutic test is made.—J. H. Stokes, *Arch. Dermat. & Syph.* 4:784 (Dec.) 1921.

## INJECTION OF THE BILE DUCTS WITH BISMUTH PASTE

AND OBSERVATIONS ON THE FLOW OF BILE

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AND

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An instance of injection of the bile ducts of the liver is singular in our experience, and we have been able to find only one report<sup>1</sup> that was similar, in that the bile ducts were injected; but in that case the injection came about in an entirely different way and was not so complete. For this reason and because of the fundamental truths that were developed following the injection, we think this case worthy of being reported.

#### REPORT OF CASE

Mr. T. P., aged 48, a laborer, was admitted to the Toledo Hospital, Dec. 30, 1920, with a typical attack of acute gallstone cholic. He had severe pain in the upper quadrant of the abdomen, with extreme tenderness and rigidity over the gallbladder on slight pressure.

He was a Bulgarian and his family history was unimportant: he had two attacks of inflammatory rheumatism, one in 1895 and one in 1910. His physical examination gave normal findings with the exception of the tenderness already noted and rigidity over the gallbladder. His temperature was 98.6 F.; pulse, 80 and of normal tension, and respiration, 20. The urine was negative except for a slightly elevated specific gravity of 1.034. It contained no bile. The white blood count was 13,400, with 86 per cent. polymorphonuclears and 13 per cent. lymphocytes. The red blood count was 4,500,000, with a hemoglobin of 81 per cent.

On the day following admission, the duodenal tube was used according to Einhorn's method, as a further diagnostic aid. No typical gallbladder bile was obtained, even after the injection of 75 c.c. of a 33 per cent. solution of magnesium sulphate, but light colored bile, which showed no turbidity, change in color, crystals, or gallbladder epithelium came through the tube. By taking cultures of the bile, colon bacilli were obtained.

Jan. 1, 1921, the temperature rose to 102.6 F., and the pulse rate was 96. The white blood count on this date was 16,400, with 88 polymorphonuclears and 12 per cent. lymphocytes.

His condition was slightly improved, January 5, and he was transferred to the surgical service. A cholecystectomy was performed. The gallbladder was gangrenous, with a perforation near the cystic duct. The remaining surface gave the appearance of a chronic "strawberry gallbladder." A stone the shape of an olive, 3 by 2 cm. ( $1\frac{3}{16}$  by  $2\frac{5}{32}$  inch) was found at the neck of the gallbladder. Because of the friability of the tissue and the difficulty of tying off the cystic duct and artery, hemostats were allowed to remain, and were removed on the fifth day after the operation. Before their removal the drainage was abundant, consisting chiefly of bile.

The patient made an uneventful recovery from the operation, but a permanent biliary fistula resulted.

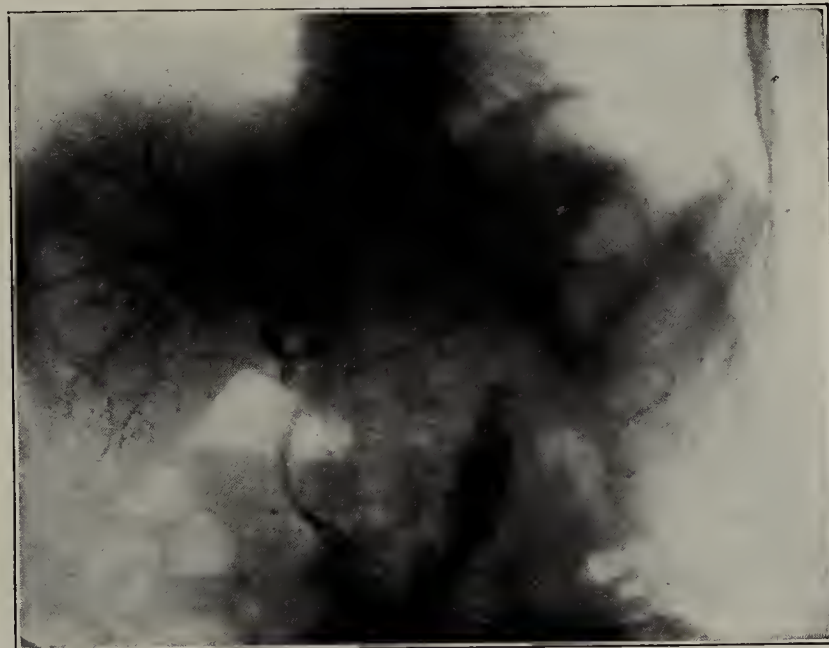


Fig. 1.—Bile ducts immediately after injection with bismuth paste; duodenal tube in duodenum.

1. Beall, F. C., and Jagoda, Samuel: Injection of the Bile Ducts with Barium, *J. A. M. A.* 76:1483 (May 28) 1921.



Eight weeks after the operation, the patient still had an abundant flow of bile from the fistula. He was able to be up and about but did not regain his strength. His weight, originally 165 pounds, was now 125. His skin was clear and his general appearance was good. His digestion was poor and his stools were clay-colored and contained no bile. The blood sugar was 0.075 per cent. with urea 67.2 mg. per hundred cubic centimeters and creatinin 1.60 mg. per hundred cubic centimeters.



Fig. 2.—Stomach with barium meal and duodenal tube passing through pylorus.

March 8, the duodenal tube was passed and 75 c.c. of magnesium sulphate was injected. No bile was obtained, but an abundant amount of clear, viscid fluid, which proved by fermentation tests to contain the pancreatic enzymes, amylase, steapsin and trypsin, came out.

The following day, in order to determine the extent of the fistulous tract and its relations to the duodenum, the duodenal tube was again passed. A small amount of milk, containing barium, was injected into the tube, to make clear its outline. At the same time three-fourths the contents of a one-ounce tube of bismuth paste was injected into the external opening of the fistula. The paste passed in with slight pressure and caused no pain. A roentgenogram was immediately taken, and, to our great surprise, we found the liver ducts extensively injected with bismuth paste, as shown in Figure 1.

Before the second picture was taken (fifteen minutes later), the patient was given buttermilk and barium to drink, so that the stomach might be outlined and we could be assured that the duodenal tube was in the duodenum. This was found to be correct, as shown in Figure 2, and it was further shown that there was no connection between the fistulous tract and the alimentary canal. The obstruction was apparently at the junction of the hepatic duct with the common duct.

Immediately after the injection of the bismuth paste the patient developed discomfort in the region of the liver. It gradually grew worse and in twelve hours he began to have extreme distress, and morphin was required to relieve the pain. In twenty-four hours he had developed jaundice, a pinched expression of the face, and a temperature of 101 F. The urine was dark-colored and contained a considerable quantity of bile. At the end of thirty-six hours the paste gradually began to come out through the external opening, the bile began to flow, and the distress of the patient was much less. The third roentgenogram, taken at this time (Fig. 3), shows the paste, which had extended to the margin of the liver, to be disappearing; and the tube, which was given the patient to swallow fifteen minutes previously, to be looped in the stomach.

March 11, two days after the injection of the paste, the jaundice was less and the patient had no discomfort. More of the paste came out, and the bile began to flow freely. The

duodenal tube was again passed and no bile was obtained. The stool was still clay-colored and contained no bile. March 13, the liver was almost free from bismuth, as shown by Figure 4, and only a small amount was seen around the edge of the sinus. The patient was apparently no worse for the mechanical obstruction to his liver for a period of forty-eight hours.

Being definitely convinced that there was no bile passing into the alimentary canal, we decided to collect a twenty-four hour specimen of bile, that the quantity and rate of flow by various stimuli might be estimated. By means of a tracheotomy tube, which tightly fitted the fistulous opening, the following results were obtained:

(The collection was started at 11:35 a. m.). During the first hour the bile was allowed to flow, and 64 c.c. was collected. The second hour, in a psychic test with a ham sandwich, which the patient was allowed to smell and taste, the flow was diminished to 50 c.c. At the beginning of the third hour a generous, mixed meal was given, and during the first two and one-half hours following this, 128 c.c. was collected. During the third and fourth hours after the meal, 176 c.c., and during the fifth and sixth hours, 36 c.c. was collected. Later another meal was given, with practically the same cycle as to the rate of flow.

A second test with the duodenal tube was then given the patient, and after it had been determined that the tube was in the duodenum, 75 c.c. of a 33 per cent. solution of magnesium sulphate was injected. During the next four consecutive periods of fifteen minutes each, 15 c.c. was secreted, making 60 c.c. during the hour after the magnesium sulphate was injected. There was no increase in the rate of flow, or change in color or in the consistency of the bile from the tracheotomy tube, after the injection of the magnesium sulphate.

The estimation of the total quantity of bile secreted during the twenty-four hours was 1,200 c.c.

In our third test we used 120 c.c. of freshly collected bile and poured it through the duodenal tube into the duodenum. The tube, which was attached to the biliary fistula, was then connected to the duodenal tube and the bile was allowed to flow from the fistula through the duodenal tube into the duodenum, for two hours. The next stool of the patient was

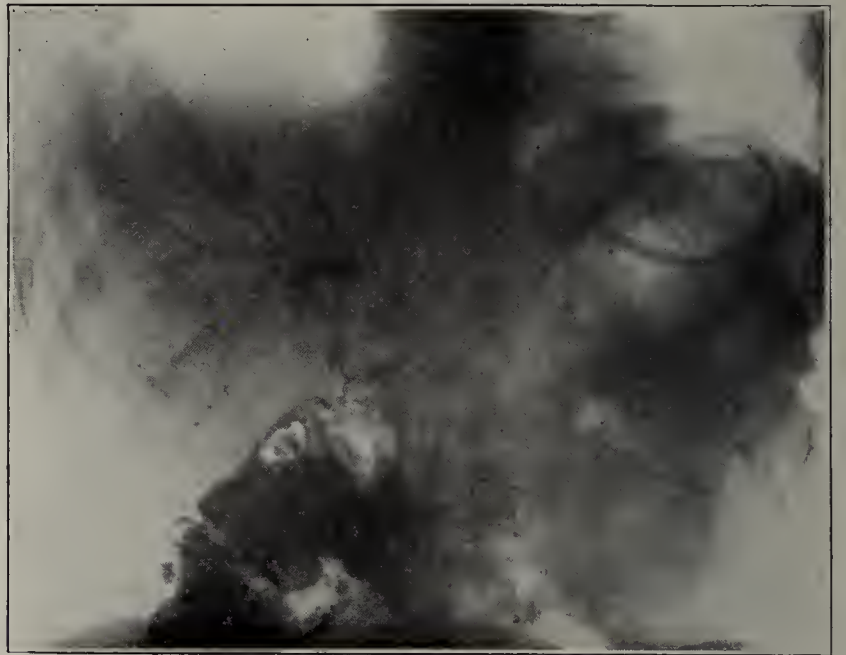


Fig. 3.—Bismuth in bile ducts; duodenal tube looped in stomach.

yellow and contained bile. This was six hours after the bile had entered the duodenum.

In the fourth test the bile was again collected for an interval of two hours. This collection was begun five hours after a meal that had been followed by 120 c.c. of bile injected into the duodenum. The quantity secreted was 110 c.c., showing it to be increased three times over the corresponding period in which the patient had had no bile injected into the duodenum.

The idea of administering the patient's own bile through the duodenal tube continuously was soon abandoned because



of the inconvenience and discomfort of the duodenal tube to the patient.

March 29, the patient's condition was better, and another operation, with the intention of joining the bile tract to the alimentary canal, and closing the fistula, was performed. A high right rectus incision was made. A blunt probe was inserted into the fistulous tract, and with it as a guide, the tract was dissected, free of scar tissue, back to the liver. The common duct was practically obliterated by adhesions



Fig. 4.—Bile ducts free of bismuth; only small amount left in sinus.

and scar tissue. An elliptical incision was made into the duodenum. The opening of the hepatic duct was then sutured to the opening of the duodenum with interrupted chromic catgut sutures. A gauze drainage was left and the incision closed, with the drain protruding through the upper end of the incision.

The patient was in fairly good condition following the operation. The drainage of bile, however, persisted. He continued to grow worse after the second day following the operation, and finally died on the eighth day, from peritonitis and myocardial failure. Necropsy was refused.

#### SUMMARY

The chief points of interest in this case are:

1. The bile ducts of a human liver were injected, and the patient recovered without apparent damage.
2. Magnesium sulphate did not increase the flow of the bile, nor did it change in color or consistency, leading one to believe that in other individuals in which the duodenal tube is used and the bile changes in color and consistency, the magnesium sulphate acts only as a stimulant to contractions of the gallbladder and causes dilatation of the ampulla of Vater, and not as a direct stimulant to the liver, except as the bile in the duodenum increases it.
3. The greatest quantity of bile was secreted during the third and fourth hours after meals.
4. Psychic tests showed no immediate change in flow of bile.
5. One may get normal liver bile by the use of the duodenal tube for diagnostic purposes, even though the patient may have a badly diseased gallbladder.
6. The entrance of bile into the duodenum definitely increased the flow of bile from the liver.
7. Magnesium sulphate injected into the duodenum, which had no connection with the liver, did not increase the flow of bile.
8. Bile injected under the same conditions did increase the flow of bile.

## HEAVY BREASTS AS A FACTOR IN THE PRODUCTION OF FAULTY POSTURE \*

C. L. LOWMAN, M.D.  
LOS ANGELES

The matter of heavy breasts was first brought to my attention eight or more years ago through inquiries from several mothers in regard to some sort of garment that they might obtain for their daughters, who were maturing rapidly and to whom the abnormal movements of the breasts were embarrassing and uncomfortable.

About this time, a patient who was suffering with neuritis, the pain being largely localized in the shoulder girdle area, presented herself at the North Broadway Clinic. She was a Jewess who had borne and reared four or five children. Examination revealed heavy, pendulous breasts which hung down as low as the costal margin. Noting that she had some drooping of the shoulders, with spreading of the scapulae, I thought that possibly the heavy breasts might have something to do with the neuritis. When the shoulders were drawn back passively, the weight of the breasts was at once appreciated. Remembering the use of the handkerchief bandage which I had once used for nursing mothers with heavy and painful breasts, I adjusted one on this patient, who returned in a week saying that she was very much better. She ultimately obtained relief.

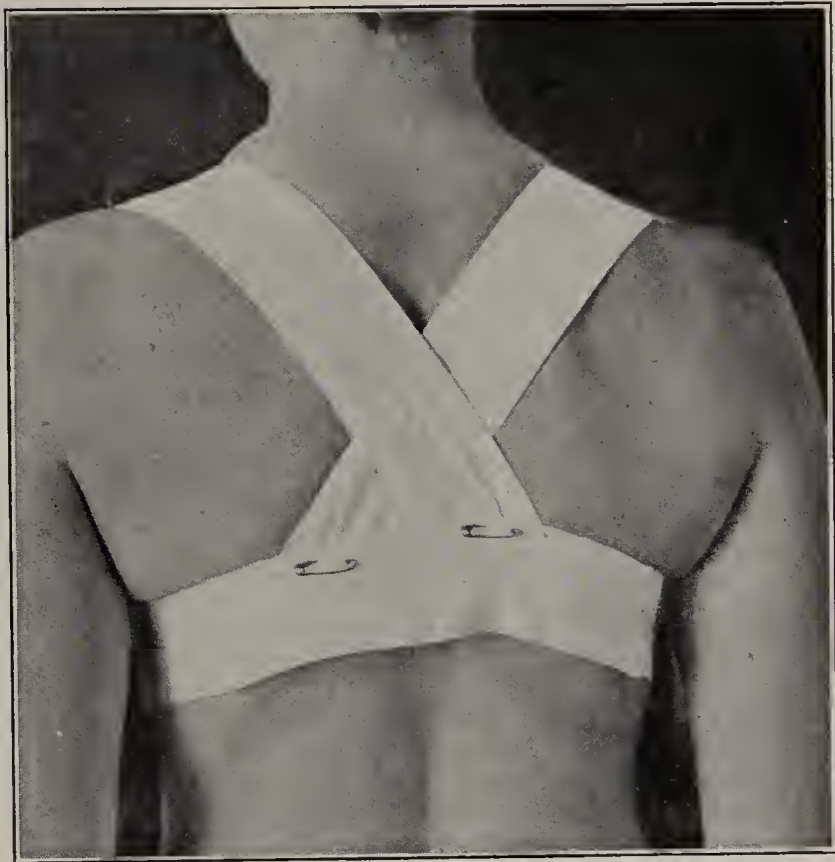


Fig. 1.—Posterior view: broad strap used with very heavy breasts and sensitive shoulders. Otherwise narrower ones are used, sometimes passing straight down to the belt and not crossing.

This bandage did two things: first, it lifted up the breasts, and second, the tails of the bandage, which crossed over the shoulders and scapulae and fastened to the tails which passed around the body, held the scapulae back, assisting in improving the posture. The

\* Owing to lack of space, this article is abbreviated in *THE JOURNAL* by the omission of several illustrations. The complete article appears in the author's reprints.



relief in this case was undoubtedly due to the maintenance of proper shoulder girdle alinement and consequent control of motion, which gave rest to the structures inflamed. The spasm and soreness of the trapezius muscle were quieted, and the irritation of the spinal accessory and circumflex nerves and their branches gradually disappeared.

As is so frequently the case, we soon afterward had some similar cases, patients with various forms of bursitis in the shoulder girdle region, and it occurred to me that a solution of the brassière question, over which I had been puzzling, was necessary. Thus, I began to devise a garment which would be easily adjustable and which would not be so cumbersome as the handkerchief bandage, yet one that would give a real upward lift. Careful investigation in many stores brought out the fact that all the brassières on the market were circular in their application, and all exerted a flattening effect and downward thrust on the breasts.

A library research of anatomic works elicited the fact that the breast tissue, both glandular and fatty, lies

in the reticular spaces formed by the various ramifications of the superficial and deep fascia. The deep fascia lies over the pectoral muscles and is practically a continuation of the costocoracoid membrane, which has its upper attachments along the outer end of the clavicle and the coracoid process; thus, the weight of the breast is suspended mechanically from the shoulder girdle, and the gradual relaxation and stretching of the rhomboid muscles and other fixators of the scapulae allow the shoulders to droop and the breasts to be lowered. This often occurs conversely; i. e., when the breasts are

abnormally heavy and the tone of the back and shoulder muscles is lessened, the weight of the breasts pulls the shoulders downward and forward, and by spreading the scapulae, stretches the rhomboid muscles, and often produces irritation along the spinal column in the region of their insertion.

This condition is generally noticeable in girls and women of the lithe type, whose thoracic girth may be small, whose backs are of the long, weak type, and whose breasts may be disproportionately large. The added weight, suspended as it is, drags the shoulder girdle forward, and pulls the upper end of the dorsal curve of the spine downward and forward, tending to increase and lengthen it, thus producing a round back. This change in spinal alinement must be compensated by other static changes which take place in the cranio-cervical and lumbosacral areas.

Examination and measurement in at least 200 cases showed that the size of the breast had practically nothing to do with other anatomic lines. Small, frail girls may have large breasts, and many large girls and women have small ones. Histologically, also, there is

no definite relation between the glandular and fatty elements. Investigation of the literature gives little or no information in explanation of this, except to call attention to many cases of marked enlargement known as "virginal hypertrophy," the cause for which is not given. The relation of breast development to the glands of internal secretion, notably the ovary, is evidenced by the researches of Claypon and Starling. They also call attention to the cyclic changes in the virgin breast at the menses, which they state occur under the influence of ovarian activity.

Their conclusions also point out that lack of development in girls approaching puberty is usually relative to the retardation or defectiveness in the development of the sexual organs. It is not pointed out, however, whether or not overactivity of the sexual organs from irritation or habitual abuse has any bearing on the question. As yet, I have made no observations in this regard. There is no mention in the literature, that I could find, which touches in any way on skeletal alinement, or the mechanical effect of heavy or pendulous

breasts, other than the mention of the discomfort in large hypertrophies, when the question of operation is to be considered.

Shortly after a number of unsatisfactory attempts by special corsétiers and patients to make such a garment, a young woman, who was then six months' pregnant, came under my observation. She complained of very painful breasts, owing to the rapid enlargement, especially after any active movement. When she attempted to run a few steps, she had to hold her breasts. As she was a good seamstress, I had her make the garment shown in Figures 1, 3 and

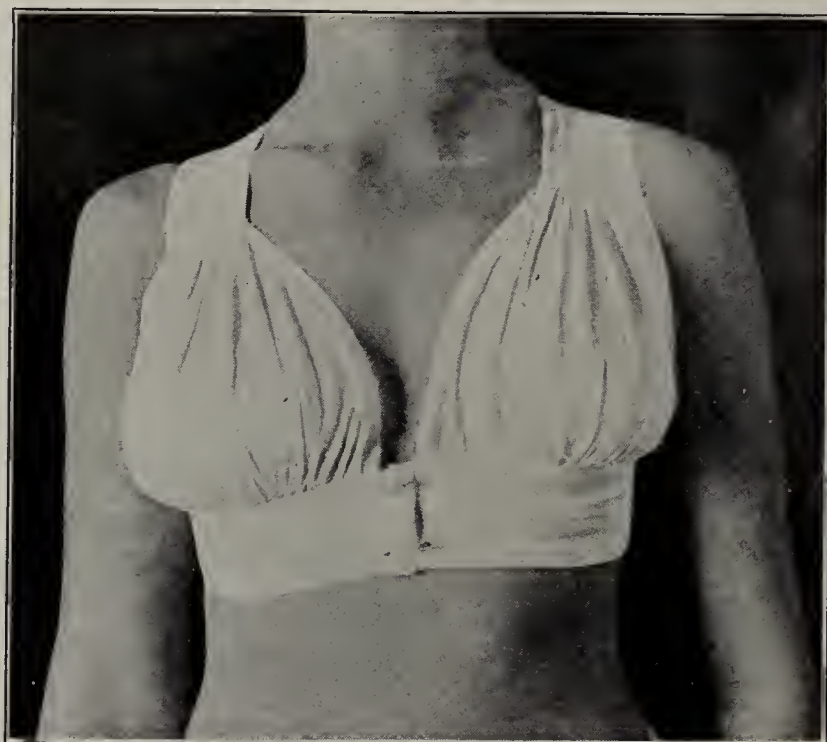


Fig. 2.—Front view: first type used; since greatly modified and improved in many details.

4, which was the result of several fittings. It gave her immediate relief. Feeling sure that reasonable control of the position of heavy breasts in growing girls would prevent the ultimate pendulous condition, as well as prevent the effect on the shoulder girdle which I have already mentioned, and seeing at once that this garment was just what would be of use to girls and women in all athletic activities, I began using it. Various physical directors immediately welcomed it. Its use in our balancing work in connection with other postural procedures, such as corrective corseting and shoeing, has proved its worth many times, as attested by nearly every person who has worn it.

In stout persons, a solid back piece is made, broad enough to control the roll of fat under the arms and scapulae. A portion of the belt in the axillary line is made of elastic so that it will not interfere with breathing. In very relaxed, pendulous breasts, the pockets can be held together in front with snaps or buttons and the garment worn at night to prevent the breasts from dragging sidewise as well as downward. As a result of this support, the excess skin and the subcutaneous



tissue which is slacked off will be gradually removed. Because the supporting straps assist the patient to "stand straight," I have found that in many cases of relaxed posture in which I formerly used a high backed corset with shoulder straps, I can now use one with a medium high back and maintain the shoulder position with this garment. When the shoulder straps are properly adjusted to lift the breast the desired amount, they do not need further attention. The garment is unfastened in front and removed like a coat, by slipping the arms out of the loops.

Figure 5 illustrates a tall, thin patient with long body, flat, small thorax, relaxed posture, and with moderately heavy breasts, with and without the brassière.

As a proof that the breast weight does influence shoulder position, I report briefly the subjoined case:

A healthy young woman of medium height and weight, a physical director in a neighboring city, came to me to be examined for admission to the reconstruction department of the Army. She stated that her right shoulder was low and wondered whether or not this brassière, with which she was familiar, would be of benefit to her. Examination revealed a moderate degree of hypertrophy of the right breast, which caused it to hang about an inch and a half lower than the left. The right shoulder was correspondingly pulled down lower than the left (Figs. 2 and 6). The brassière was made with pockets to fit and the straps adjusted thus: The right strap was fastened to the belt behind the left side as usual; the left strap, however, instead of crossing, was brought directly over the left shoulder and down straight to the belt, making the heaviest pull on the side of the high shoulder, which greatly improved the shoulder girdle alinement.

#### SUMMARY AND CONCLUSIONS

At least 200 of these garments have been used during the last four years with very satisfactory results. Summarizing briefly, it is valuable for these reasons:

1. It controls excessive breast movement during activities, such as swimming, basket-ball, horseback riding, etc.
2. It supports and corrects pendulous breasts.
3. It supports without producing atrophy, and protects from irritation and trauma against the top of the corset.
4. It serves as a prophylactic aid to corrective clothing in the fight for correcting the present vicious habit of compression which results in atrophy of the breast.
5. It relieves pain in nursing mothers and during menstrual periods, when breasts are sometimes painful and heavy.
6. It supports during the periods of pregnancy and lactation and is an aid in the period of evolution, preventing the pendulous condition so common after child-bearing.
7. It acts as a control of shoulder girdle position and is an aid in correction of spinal alinement.

I have presented this matter with the hope that the suggestion will be of as much value to many as it has been to me in giving satisfaction, comfort and relief to those patients who are in need of consideration along this line.

Brockman Building.

**Causes of Deaths of Mothers.**—Prevention and control of illness and death of mother and child are among the most neglected and potentially the most fruitful domains of American public health administration, and, of the problems concerned, the two greatest are the toxemias of pregnancy (including albuminuria and eclampsia) and puerperal fever, of which, the latter is the more readily approached.—W. T. Loward, Jr., *Am. J. Hyg.* 1:230 (March) 1921.

## THE CONVULSIVE DISORDERS OF CHILDHOOD\*

JOHN LOVETT MORSE, A.M., M.D.

BOSTON

In taking up the convulsive disorders of childhood, I wish, in the first place, to exclude all those conditions in which convulsions are simply one of the manifestations of some evident disease of the central nervous system, such as cerebral tumor, cerebral paralysis, idiocy or meningitis, and to limit myself to the consideration of those conditions in which there are no evidences of such a disease. In the next place, it must be remembered that a convulsion is merely a symptom, not a disease. This is also true, even if there have been a series of convulsions.

#### PREDISPOSING CAUSES

It is common knowledge that convulsions occur more frequently in infancy than at any other period of life, that the frequency of their occurrence diminishes steadily during early childhood, and that they are relatively uncommon after seven years. Infancy is evidently, therefore, in itself, one of the predisposing causes of convulsions. There are several possible explanations for this predisposition. One is the rapid growth of the brain, especially during the first year, as it is well known that a rapidly growing tissue or organ is especially vulnerable and irritable. Another is the imperfectly developed condition of the higher cerebral centers, inhibitory in action, which are thus less able than later to restrain the "discharges" from lower centers. This explanation has been criticized by certain authors on the ground that convulsions are more common in the second than in the first six months of life; they claim that this could not be so if undeveloped inhibitory centers were the cause, because the cerebral centers are least developed at birth and develop progressively after birth. They attribute the frequency of convulsions in infancy to spasmophilia, and say that they occur more frequently in the second six months, because spasmophilia is more common at this time. An answer to their criticism is that the irritability of both motor and sensory nerves is very slight in the new-born, that it develops much more rapidly than do the inhibitory centers, and that it is greater during the second half of the first year than at any other period of life. My own experience leads me to believe, moreover, that spasmophilia is not as common as these authors suppose. Heredity undoubtedly plays a part in the etiology of convulsions in early life. There is no doubt that the children of neurotic parents and belonging to neurotic families are more prone to have convulsions than those coming from better stock. All the diseases and conditions that affect the general nutrition likewise predispose to convulsions, because the brain shares in the general malnutrition, and as is well known, poorly nourished nerve tissue is unduly irritable. These facts, while of considerable interest, are, however, not of great importance practically, because all human beings must start as infants and because at present we, as physicians, have very little control over heredity. We can do something, however, to prevent the development of those disturbances of nutrition which predispose to convulsions.

\* Read before the Medical Association of Rochester, N. Y., Dec. 7, 1921



## EXCITING CAUSES

The exciting causes of convulsions are usually divided into three classes: (1) those that cause direct irritation of the cerebral cortex; (2) those that act through reflex irritation, and (3) those which produce toxic substances which affect the cerebral centers. This classification is fairly satisfactory, but I shall follow it only in a very general way.

We have excluded from consideration practically all of the conditions which cause direct irritation of the cerebral cortex. There are, however, one or two of which it seems worth while to speak. The first of these is cerebral hemorrhage in the new-born. This should be thought of when new-born babies have convulsions, or are twitchy or rigid. Convulsions at this time may, however, also be due to cerebral edema, intestinal toxemia, uremia in the mother, or atelectasis. If there is any bulging of the fontanel, bleeding from the nose, throat or ears, or evidence of paralysis, a lumbar puncture should be done or the subdural space explored through the lateral angle of the fontanel, in order that the baby may be given the chance of operative treatment. Thrombosis of the cerebral sinuses should also be thought of when convulsions occur in very weak and emaciated babies. In such cases there are often, in addition, localized edema and venous congestion.

## REFLEX IRRITATION

The importance of reflex irritation in the etiology of convulsions in childhood has, it seems to me, been much exaggerated. I would not say that eyestrain and phimosis cannot cause convulsions; but I have never seen any cases in which I thought that they were the cause, while I have had many children brought to me for convulsions who were wearing glasses or who had been circumcised to stop them. I have seen various manifestations, such as vomiting, looseness of the bowels, fever and irritability, which I have supposed to be due to reflex irritation from dentition; but I have never seen convulsions which were not better accounted for in some other way. It is possible, nevertheless, that the excitability of the nervous system may be increased by irritation from the teeth, and the development of convulsions from some other cause thus made easier. In all the patients that I have seen in whom the convulsions were attributed to worms, I have never found either worms or their eggs, and no patient whom I have known to have worms has had convulsions which could fairly be attributed to them. Yet I have had one case in which I made a diagnosis of epilepsy after a most complete and careful study, including Wassermann tests and examinations of the spinal fluid, blood, urine and stools, who ceased to have convulsions after he had passed a number of roundworms following the administration of an anthelmintic by an elderly woman in the neighborhood. I have also known convulsions, which had persisted for some years, to stop after the stretching of the sphincter ani by a quack doctor.

There can be no doubt that babies and children often have convulsions after eating indigestible and improper food, and that the convulsions cease after this food has been removed from the digestive tract. It seems reasonable to believe that the food is the cause of the convulsions in these instances. It is more difficult to know whether the food causes the convulsions by acting simply as a foreign body and in this way producing reflex irritation, or whether it sets up abnormal decom-

position or fermentation in the digestive tract, the products of which, being absorbed, bring on the convulsions through toxic irritation of the cerebral centers. The immediate cessation of the convulsions after the emptying of the digestive tract, before sufficient time has elapsed for the elimination of toxic substances from the system, suggests strongly that reflex irritation is more important in these cases than toxic absorption.

## TOXEMIA

The convulsions that occur at the onset or in the course of acute diseases are presumably due to the action of toxic substances in the circulation on the cerebral centers. They may, however, be due in part to high temperature. The convulsions which occur not infrequently in whooping cough, however, are not all due to the toxemia of the disease. They may also be due to asphyxia or to cerebral edema or hemorrhage. Convulsions in the new-born infants of uremic mothers may be due to the transmission of the uremic poison from the mother through the placenta. A number of authors attribute considerable importance to the thymus in the etiology of convulsions. I have never seen convulsions as the result of pressure from the thymus. I have seen them in connection with certain severe types of status lymphaticus. In all these cases, however, the babies were seriously ill and the convulsions were only one of the manifestations of the condition. I have never seen single convulsions occurring at long intervals which I thought could be attributed to toxemia from the thymus, and do not think that it need be considered under these circumstances. I have likewise never seen convulsions in infancy or childhood from lead poisoning, although this factor is mentioned by all authors. It should, of course, be kept in mind, nevertheless, as a possible cause.

## SPASMOPHILIA

Another common cause of convulsions, which is far more common than is usually appreciated in infancy and sometimes in childhood, is spasmophilia, a condition in which the normal balance between calcium and magnesium on the one side and sodium and potassium on the other is disturbed, so that there is a relative diminution in the proportions of calcium and magnesium and a consequent increase in the irritability of the nervous system. When convulsions are due to spasmophilia, there is often a history of attacks of laryngismus stridulus or tetany. In such cases the mechanical irritability of the nerves is usually increased, as can be shown by trying Trousseau's and Chvostek's tests. In a doubtful case, the presence or absence of spasmophilia can be easily determined by testing the electrical excitability. The appearance of cathodal opening contractions under 5 milliamperes is pathognomonic of spasmophilia, and of anodal opening contractions with less current than that causing anodal closing contractions very strong evidence in favor of it. Although spasmophilia is a very common cause of convulsions, especially in infancy, it is often overlooked or forgotten. It should always be thought of and looked for in every case of convulsions in early life.

## CONVULSIONS

It is not necessary to describe convulsions. Every one is familiar with them. Every one is also aware that in epilepsy the typical convulsion may be replaced



by a slight stiffening, momentary loss of consciousness, or other similar manifestations. It is common knowledge that when epilepsy is not the cause, convulsive manifestations may vary greatly in degree. Not every one is aware, however, that the epileptic convulsion in early life is very often not characteristic. The aura and initial cry are more often absent than present, and many children do not sleep after them. In fact, it is safe to say that, as a rule, in childhood, there is nothing about any single convulsion to show whether it is epileptic or not. Convulsions due to spasmophilia are no different from convulsions due to other causes. The importance of unilateral or localized convulsions is much less in early life than later. The younger the patient, the less important they are. It is a waste of time, save in exceptional instances, to note whether the attack begins on one side or on the other, or whether one part is more affected than the others. The nervous system of the infant and young child is so irritable that any and all sorts of responses may result from the same stimulus and many different stimuli produce the same response. In general, in early life a convulsion is simply a convulsion, and there is nothing about the severity, the distribution, the onset or the character of the convulsion which shows anything as to its cause. The diagnosis of the etiology can be made only by a careful study of the history, by a thorough physical examination and sometimes only after long observation.

#### DIAGNOSIS OF EPILEPSY

The chief interest in convulsions and other convulsive manifestations in early life lies in whether or not they are symptoms of epilepsy or whether, if not, they may lead to epilepsy later. I know of no more difficult problem in the field of pediatrics. When the convulsion is the first one and there is some apparent cause for it, such as a high temperature, the evidences of some acute disease, or the history of an indiscretion in diet, it is hardly necessary to consider epilepsy. If evidences of spasmophilia are found, epilepsy may be excluded. If there have been convulsions in the past, the possibility of epilepsy must be considered, even if there have been apparently good causes for the previous convulsions. Again, however, epilepsy may be almost certainly excluded if there are any evidences of spasmophilia. When there is a history of convulsions at intervals, without apparently good causes for the attacks, the chances are in favor of epilepsy. The longer the period which the convulsions have covered, the greater is the probability that they are epileptic. The presence of an aura or of an initial cry is almost certain proof of epilepsy. Their absence does not, however, count much against epilepsy. The occurrence of convulsions at night is in favor of epilepsy. Convulsions not due to epilepsy may produce changes in the brain which later lead to epilepsy. This is certainly true of the convulsions which occur in whooping cough. The history of an injury to the head, followed by convulsions, is somewhat in favor of epilepsy. In general, it is impossible to determine immediately whether a child that has had a number of convulsions at intervals has epilepsy or not. A most thorough examination should be made in all such cases to find out if there are any evidences of an organic cerebral disease or sources of reflex irritation. Such an examination should include a Wassermann test on the blood and spinal fluid, a tuberculin test, a lumbar puncture

with an examination of the spinal fluid, as well as examinations of the urine, stools and blood. The stools should be studied not only for evidences of indigestion but also for evidences of parasites. The fundi of the eyes should be examined for evidences of an increase in the cerebral pressure, and every possible location for reflex irritation should be investigated. When all these things have been done, it will sometimes be found that there is a real organic basis for the convulsions, such as syphilis or a cerebral tumor. In others, some possible sources for reflex irritation may be found. In most instances, however, everything will be negative and we shall know as little or as much as we did when we began, and can only wait for time to make the diagnosis.

Minor convulsive manifestations, such as slight local or general twitching and temporary spasms of various sorts, are very common in infancy and are of exactly the same significance as are convulsions. The characteristic carpopedal spasms of tetany are pathognomonic of spasmophilia and have no significance, except that they demonstrate the presence of this disease. No one should mistake the characteristic, single, purposeful and controllable movements of habit spasms for evidences of any serious condition. These minor convulsive manifestations are less common in childhood, but other symptoms having the same significance are not infrequent. Such symptoms are a sudden look of blankness, an instantaneous loss of consciousness, the dropping of some utensil, a fleeting stop in the performance of some action, in speech or attention, and the involuntary passage of a few drops of urine. These manifestations at once suggest *petit mal*. It is just as difficult to know whether they are or not, as it is to know whether convulsions are epileptic or not. The same careful and complete examination should be made in these instances as when there are repeated convulsions. The results will usually be equally meager. They may go on for months or years and finally cease, they may continue unchanged for many years, or they may change to typical epileptiform convulsions or alternate with them. In general, however, these symptoms are more likely to prove eventually to be epileptiform in character than are repeated convulsions. The diagnosis of epilepsy in childhood, unless the manifestations are absolutely characteristic, as they seldom are, must always be guarded. I have known babies and children to have many convulsions, in one instance about 600, and then be perfectly well for years up to the present time. I have known others, who had had only one or two at the time when they were seen, to become confirmed epileptics. I have known children to have hundreds of attacks like *petit mal* and then be entirely well. In others they have persisted or changed to typical attacks of *grand mal*. In general, however, it is unwise to make a positive diagnosis of epilepsy in infancy, while its possibility should always be mentioned in childhood.

There should be no difficulty in distinguishing between attacks of faintness or hysteria and epilepsy in infancy and childhood. In the first place, infants are very seldom faint and still less often hysterical, while children are not often faint and seldom hysterical. Careful observation should prevent any mistakes, in the few instances in which they are faint or hysterical.



## PROGNOSIS OF CONVULSIONS

Death rarely occurs in or as the result of a single convulsion. This is especially true of the convulsions of spasmophilia. The younger and more feeble the individual, however, the greater is the danger. —A single convulsion is most dangerous when it occurs in whooping cough or in the course of diseases of the larynx or lungs. Moreover, the cerebral congestion may be so great in any convulsion that it may result in a hemorrhage, which will later cause feeble-mindedness, epilepsy or spastic paralysis. Death is unusual even when there is a series of convulsions in rapid succession and lasting many hours. It may, however, occur as the result of exhaustion, even in strong babies or children. Repeated convulsions, reflex in origin, may apparently in time develop a "bad habit of the brain," and lead to epilepsy. The prognosis for recovery in epilepsy in childhood is better than in later life; as to mental impairment, worse.

## TREATMENT

At the onset of a convulsion there is cerebral anemia, which is quickly followed by venous hyperemia. This has always developed by the time the physician has reached the patient. The immediate indication is, therefore, to relieve cerebral hyperemia. This may, perhaps, be accomplished by the application of heat or counterirritants to the surface of the body, heat to the feet and cold to the head. At any rate, it affords a rational explanation for the popularity of these household measures. They certainly can do no harm, even if they do no good. It must be remembered, however, that the temperature of the bath should not be over 100 F. It must also be remembered that, if the convulsion is due to the action of a high temperature, a hot bath will do harm and that it is a cold bath to bring down the temperature which is needed. Ether and chloroform are more effective, however, for the immediate relief of a convulsion.

As soon as the emergency allows, the attempt should be made to determine the cause of the convulsion, in order to remove it, if possible. The temperature should be taken at once, and in the rectum. A careful history should be taken, special attention being paid as to whether there have been previous convulsions, recent exposure to contagious diseases, indiscretions in diet or manifestations of spasmophilia. A careful and complete physical examination should then be made, including the tests for the increased mechanical excitability of spasmophilia. The urine should be examined, if possible, but, at this age, uremia is one of the rarest causes of convulsions. If it is the cause, the physical signs of disease of the kidneys—edema, ascites and pallor—are almost always marked, making the diagnosis easy. If no definite cause for the convulsion is found, it is almost always safe and advisable to wash out the lower bowel and to give a cathartic. It is usually not advisable to give an emetic or to wash out the stomach, as these procedures are liable to start up another convulsion, in which food may be inhaled and bronchopneumonia develop as the result. When the patient does not relax after a convulsion or the convulsions are repeated, it is advisable to give bromids or bromids and choral by the mouth or rectum. My feeling is that the doses of the bromids usually recommended are rather small, and those of chloral too large. Bromids are a safe drug, and the limit between the physiologic and toxic doses is a wide one. Chloral is a rather dan-

gerous drug, and the limit between the physiologic and toxic doses is a narrow one. There is no objection to the use of morphin subcutaneously when there is a series of convulsions. The tolerance of babies and young children for morphin is, however, relatively low, and it must, therefore, be used cautiously. Oxygen is sometimes of use when the convulsive state is prolonged and cyanosis continuous.

When, in infancy, convulsions are due to spasmophilia, they almost always disappear promptly when the infant is put on human milk. If this is impossible, the bowels should be cleaned out at once and a carbohydrate given. Whey is contraindicated because of the large amount of salts which it contains. After a few days or, at most, a week, milk must be added in some way, best in the form of precipitated casein and high percentage cream in order to avoid the salts in the whey. It is also worth while to give calcium in some form. The most satisfactory is desiccated calcium chlorid, about 1 dram (4 gm.) a day in divided doses. It may also be worth while to give cod liver oil with the hope that it may favor the retention of calcium. Neither the calcium salts nor cod liver oil has been very efficient in my hands. Parathyroid extract is useless. It is important to remove all sources of infection, as they seem to predispose to the development of the disease. The treatment of spasmophilia in children is along the same lines. They cannot, of course, be given breast milk, but can, however, be given a more varied diet than babies, planned to contain small amounts of sodium and potassium and larger amounts of calcium and magnesium.

In those instances in which children have convulsions from time to time and in which the diagnosis of epilepsy is not warranted, little can be done, except to look after the general health of the child, regulate its diet carefully, be sure that its bowels are kept open and that it drinks plenty of water, and remove, as far as possible, all causes of reflex irritation.

Little more can be done, if the convulsions are certainly or possibly epileptic. In such cases it is wise to cut broths and beef juice out of the diet and to limit the protein intake. They may have the choice of meat, fish or egg once daily. Red meats are no more harmful than white meats or fish. Milk may be taken freely. The bowels must be kept well open and the kidneys acting freely. Great discretion must be exercised in the use of the bromids in epilepsy in childhood, as the by-effects of the drug are often worse than the disease. Large doses, given continuously, not only disturb the digestion and prevent proper physical development but seriously interfere with the development of the mind. I have seen a number of children in whom the mental impairment and general malnutrition had been attributed to epilepsy, when they were really due to the large doses of the bromids which they had been taking and disappeared promptly when the bromids were omitted. In general, I believe that it is wiser not to give bromids to children, unless the convulsions are quite frequent and severe. Phenobarbital (luminal) apparently does not have the same depressing action on the mental and physical development as do the bromids, while it does have a restraining action on the disease. In the limited experience which I have had with it, it has proved itself useful, but has not justified all the claims which have been made for it.

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## GIARDIASIS

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*Giardia intestinalis* was long considered a non-pathogenic inhabitant of the bowel. Even recently Kofoid, Kornhauser and Plate<sup>1</sup> found this flagellate in 6 per cent. of 1,500 healthy American soldiers. Maxcy<sup>2</sup> obtained *Giardia* in the stools of 20 per cent. of 89 children examined. In only one of these children was there bowel disturbance. In routine stool examination at Murray Hospital in the last ten years, I have encountered *Giardia* in nine patients who had no symptoms referable to the bowel. These patients showed only a few organisms at any time. In three cases in which there was severe intestinal disturbance, nothing but *Giardia* could be found to account for the trouble. In these there were myriads of *Giardia* in the stools. Many clinical observations the last ten years have established *Giardia* as the probable cause of some severe chronic diarrheas.

Kennedy and Rosewarne<sup>3</sup> found *Giardia* the cause in twelve out of 136 cases of dysentery. Fantham and Porter,<sup>4</sup> in 1,300 patients with diarrhea, found 187 cases caused by *Giardia*. The condition is fairly common in this country. Logan and Sanford<sup>5</sup> have described sixty-six cases at the Mayo Clinic. Mantovani,<sup>6</sup> in 1919, described cases with severe symptoms. One man in robust health had occasional attacks of pain above the umbilicus, and diarrhea, with from thirty to forty stools a day, containing many organisms. There was an eosinophilia of 10 per cent. One woman, aged 50, had a severe diarrhea of three months' duration, rebellious to all treatment, with enormous numbers of *Giardia* in the stools, and an eosinophilia of 8 per cent. She died from progressive debility. Her brother had died several months before from a similar condition.

Carles<sup>7</sup> emphasizes the chronic and tenacious character of *Giardia* enteritis. Some of his patients had been treated for intestinal tuberculosis. One young man had had giardiasis since childhood, and both mental and physical development were retarded. Labbé<sup>8</sup> reports cases of rebellious enteritis simulating tuberculosis. Cade and Hollande<sup>9</sup> describe in detail ten cases of chronic diarrhea due to *Giardia*. The diarrhea may come on either gradually or acutely. Formed stools are rare; the colon is tender; the patient is pale and often has a slight rise of temperature in the evening. In one case, the fever was high at times. There were no striking blood changes, and there was no blood or pus in the stools. Cress<sup>10</sup> reports a case of appendicitis which he thinks was caused by *Giardia*. Fantham and Porter,<sup>4</sup> at postmortem, found distortion of intestinal epithelial cells due to the suction of *Giardia*. Though

diarrhea is usually present, Lyon<sup>11</sup> reports a case in which there was rather extreme constipation. The patient in Case 3 in this series was constipated.

## OCCURRENCE

The motile forms of *Giardia* are found in the duodenum and jejunum. Smithies reports them present in the gallbladder at operation. Using the duodenal tube, Lyon,<sup>11</sup> in three cases, found actively motile forms in the duodenal contents, and *Giardia* cysts in the stools. I found myriads of motile forms in the duodenal contents in Case 3. In the lower bowel, the organisms are usually encysted. When the diarrhea is extreme, or after purging, motile organisms are present. In Case 2, at times, there were very numerous motile forms in the stool, without catharsis.

## TREATMENT

Lyon says, "The most striking thing in the review of the literature is the fact that up to 1917 absolutely no successful method of treatment had been suggested." I think all who have tried to treat the condition will emphasize this by saying that up to the present time there has been no successful method of treatment. Carles<sup>7</sup> considered sulphur, from 2 to 6 gm. (33 to 92 grains) a day, the best treatment. Carr and Chandler<sup>12</sup> used sulphur, with no effect on the condition. Mayer<sup>13</sup> reports one case which he considered cured after one dose of emetin. Carr and Chandler<sup>12</sup> found no effect from either emetin hydrochlorid or ipecac. That has been my experience. In Case 1, the patient received repeated injections of emetin and ipecac tablets over long periods, with no decrease in the numbers of *Giardia* present. Cade and Hollande<sup>9</sup> thought that from 0.1 to 1.5 gm. (1½ to 23 grains) of hydrochloric acid taken daily in albuminous water for from twenty to thirty days cured one patient. In two other cases, it did no good. Mantovani<sup>6</sup> says there is no specific, but that arsphenamin has the best record, not for its direct action, but because it improves the general condition. Labbé<sup>8</sup> says that giardiasis is much harder to cure than amebiosis; that there is no drug that is curative. Yakimoff<sup>14</sup> and co-workers tested the effect of arsphenamin on giardiasis in white mice. They found that 1 c.c. (16 minims) of neo-arsphenamin in from 1:300 to 1:1,000 solution for every 20 gm. (309 grains) of weight completely cured infected animals. Carr and Chandler report an apparent cure after four intravenous injections of neo-arsphenamin.

I tried neo-arsphenamin in only one patient (Case 2). The patient received one injection, of 0.3 gm. (4½ grains) and, following that, three injections of 0.6 gm. (9 grains) each, in one month, with some temporary relief of symptoms, but with no decrease in the number of cysts. Later this patient was given benzyl benzoate in full doses, and she has remained free from symptoms for nine months, though *Giardia* is still abundant.

Unless a case is observed over several months, it is impossible to tell the results of treatment. There is great normal fluctuation in the number of cysts in the stool, as has been shown by Miss Porter.<sup>15</sup>

1. Kofoid, C. A.; Kornhauser, S. I., and Plate, J. T.: Intestinal Parasites in Overseas and Home Service Troops of the U. S. Army, J. A. M. A. 72: 1721 (June 14) 1919.

2. Maxcy, K. F.: Bull. Johns Hopkins Hosp. 32: 166 (May) 1921.

3. Kennedy, A. M., and Rosewarne, D. D.: Lancet 1: 1163 (June 10) 1916.

4. Fantham, H. B., and Porter, A.: Brit. M. J. 2: 139 (July 29) 1916.

5. Logan, A. H., and Sanford, A. H.: J. Lab. & Clin. Med. 11: 618 (June) 1917.

6. Mantovani, M.: Gazz. d. osp. 40: 66 (Jan. 30) 1919.

7. Carles, J.: J. de méd. de Bourdeaux 90: 187 (May 25) 1919.

8. Labbé, M.: Presse méd. 27: 161 (March 27) 1919.

9. Cade, A., and Hollande, A. C.: Arch. d. mal. de l'app. digestif 10: 193 (July) 1919.

10. Cress, W. W.: M. Rec. 98: 143 (July 24) 1920.

11. Lyon, B. B. V.: M. Clin. N. America 4: 1153 (Jan.) 1921.

12. Carr, E. I., and Chandler, W. L.: Successful Treatment of Giardiasis in Man with Neo-Arsphenamin, J. A. M. A. 74: 1444 (May 22) 1920.

13. Mayer, M.: München. med. Wchnschr. 61: 240, 1914.

14. Yakimoff, V. L., and co-workers: Russk. Vrach. 16: 232 (March 11) 1917.

15. Porter, A.: Lancet 1: 1166 (June 10) 1916.



## REPORT OF CASES

CASE 1.—Mrs. H., aged 41, under observation from January, 1918, until May, 1919, complained of diarrhea and severe abdominal pain. Her health was excellent until the present illness. This began as a mild diarrhea, ten years previously. Seven years previously she had a simple goiter removed, and, because of abdominal tenderness, the appendix was also removed. Four years previously the diarrhea and abdominal pain became much worse. She had from two to four unformed stools a day, containing blood and mucus. The diarrhea and pain had continued, but for the past three years there had been no blood in the stool. There had been loss of weight and extreme fatigability. Three years previously, at one of the best clinics, the uterus, containing small fibroids, was removed in the hope of relieving the abdominal pain. General exploration showed the rest of the abdomen normal. The operation in no way relieved her.

The patient was thin and sallow. There was a slight simple goiter. Marked tenderness was noted along the cecum and ascending colon. Fluoroscopic and roentgen-ray examination after a barium meal revealed a small contracted colon like that of chronic colitis; otherwise the digestive tract was normal. The stool contained enormous numbers of *Giardia* cysts, embedded in mucus. Once, after catharsis, motile forms were found. The patient was given emetin in heavy dosage both by subcutaneous injection and in keratin coated capsules by mouth, for two months, with no effect. Quinin in enemas and by mouth was no more helpful. Methylene blue and thymol gave like results. Coal oil enemas decreased the tenderness, but not the number of *Giardia*. At times, the bowel pain was so great that starch and laudanum enemas were necessary to give relief. The patient was kept on a small residue high caloric diet, and gained weight and improved in general health; but the bowel condition with *Giardia* persisted.

CASE 2.—Miss T., aged 21, who was first seen June 28, 1920, had good health until June, 1920, when she began suddenly to have severe diarrhea with extreme tenesmus, and with some blood in the stools. The diarrhea had continued, but since the first week there had been no blood passed. There were from eight to ten unformed stools a day. The patient had lost 10 pounds (4.5 kg.) in weight.

The general examination was negative except for tenderness over the colon. The appendix had been taken out four years before. There was no fever at any time. There were enormous numbers of *Giardia* cysts in the stool, but no blood or pus. The patient was given four injections of from 0.3 to 0.6 gm. (4½ to 9 grains) of neo-arsphenamin at weekly intervals. The general condition improved. There was marked diminution in the number of stools, down to one or two a day, but there were still large numbers of *Giardia* present. In August, the patient was given benzyl benzoate in 15 minim (0.92 c.c.) doses, three times a day. There has been absence of diarrhea since then. The patient feels well, is gaining weight, and the general condition has improved; but there are still *Giardia* in the stools.

CASE 3.—Mr. D., aged 23, when first seen, December, 1920, complained of indigestion and constipation, with a burning pain in the epigastrium, developing three hours after meals, and relieved by eating. There was some pain in the back below the right shoulder blade; in fact, the history was highly suggestive of duodenal ulcer. Symptoms had been present for four months.

The patient's color and general nutrition were excellent. There was tenderness over McBurney's point and in the upper right quadrant. Roentgen-ray and fluoroscopic examination after a barium meal revealed a normal stomach. The bowel was normal except for an appendix which remained filled for forty-eight hours. The stool showed large numbers of *Giardia* cysts. The duodenal tube, passed for the examination of bile, showed enormous numbers of *Giardia* in both the duodenal contents and the bile from the gallbladder. The appendix was removed by Dr. T. C. Whitherspoon. It contained neither encysted nor motile forms of *Giardia*. The epithelium was perfectly normal. At operation the gallbladder to all appearances was normal. There was no evidence of gastric or duodenal ulcer. The patient was sent home with instructions as to diet to control the constipation, and was put on

benzyl benzoate. Repeated examinations of the stool have always shown *Giardia* present. The stomach symptoms have improved.

## CONCLUSIONS

1. Giardiasis is a frequent cause of severe diarrhea, with much impairment of general health.
2. In place of diarrhea, there may be constipation.
3. Practically all patients have abdominal pain, which at times is very severe.
4. No treatment yet suggested has been successful in ridding the bowel of *Giardia*.
5. *Giardia* may invade the gallbladder, and when there, and in large numbers in the duodenum, may give symptoms resembling duodenal ulcer.

## A CASE OF TRUE PNEUMOTYPHUS

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The textbooks tell us that bronchitis is the most common complication at the onset of typhoid fever—in fact, most observers regard it as a real symptom of the infection. But besides a comparatively mild inflammation of the bronchi, we can have a more extensive involvement of the pulmonary system—an actual pneumonia. Of this complication it is possible to have a lobular form or bronchopneumonia, a lobar type, or a hypostatic congestive condition, all of these usually occurring during the course of the typhoid.

Very rarely, we have a form of pneumonia which occurs at the outset of typhoid fever in which it remains doubtful whether we had a pneumonia patient who developed typhoid, or a typhoid case with implication of the lungs—the so-called pneumotypus, first described by the Germans.

Therefore, a description of one of these types which came under our observation might well be added to the literature on the disease.

## REPORT OF CASE

P. P., aged 19, a French seaman, was admitted to the medical wards of the Broad Street Hospital, in the service of Dr. Francis Huber, July 7, 1921, from his ship, having been ill for five days. The onset was characterized by a chill, pain in the side, weakness and fever. The personal and family histories had no bearing on the case.

The temperature hovered about 104, pulse 80 to 90, respiration 20. Physical examination disclosed dulness on percussion, tubular breathing and bronchophony over the entire middle lobe of the right lung. A diagnosis of lobar pneumonia was therefore made. There was no expectoration, and typing of the sputum for the pneumococcus was impossible. Later the same day, another sailor was admitted from the same ship with a typical lobular pneumonia.

In the first case, blood count revealed 11,520 leukocytes, with a differential count of: polymorphonuclears, 65 per cent.; lymphocytes, 34 per cent.; large mononuclears, 1 per cent. The urine was negative.

The signs remained constant until the fifth day (July 13), when resolution started, as shown by softening of the consolidation, with many moist râles. In spite of this, however, the temperature maintained its fastigium of between 103 and 104. Pulse and respiration still were normal, with some element of dicrotism in the former. Stools were normal, one or two daily, always formed.

On the tenth day (July 17) a discrete, punctate macular rash, scattered over the abdomen and back, made its appearance. It was not hemorrhagic, and disappeared on pressure. There was also some slight soreness and distention of the right side of the abdomen.



A provisional diagnosis of typhoid fever was made, based on the clinical signs, the elevated temperature, slow dicrotic pulse, the tympanitic abdomen with slight tenderness, and the roseola. The spleen was not palpably enlarged at any time.

Treatment instituted was purely supportive and dietetic, the Coleman high caloric diet being used, and about 3,000 calories being fed daily. There was no diarrhea at any time, and the only disturbing factor was some vomiting when too much food was fed—on those days when the diet evaluated more nearly 3,500 calories.

Laboratory findings bore out our clinical diagnosis by a positive Widal reaction for typhoid and by the isolation of the typhoid bacillus from the stools.

On the fifteenth day after admission (July 22), the temperature began to fall by lysis, reaching 98 on the thirtieth. At this time, unfortunately, the patient's neighbor in the ward offered him some raw fruit, which he ate. Immediately the temperature shot to 104.4, pulse rose to 100, and he suffered a typical recrudescence of his illness.

On the night of August 11, or the twelfth day of the relapse, the temperature fell by crisis, reaching normal, where it remained with but occasional and inconsequential flighty elevations. A faint systolic murmur, not transmitted, was audible at the mitral area, but this had almost entirely disappeared before discharge.

On the eleventh and twelfth days of normal temperature, successive stool specimens proved free of typhoid bacilli, and precautions were discontinued. Convalescence was uneventful, and the patient was discharged cured, September 15.

#### COMMENT

Here we have a case of typhoid fever complicated by a relapse of twelve days' duration, which was ushered in by a typical lobar pneumonia. Osler<sup>1</sup> numbers but three in his entire series of cases in which lobar pneumonia occurred at the outset—the "pneumotyphus of the Germans." His classic description fits our case exactly. This type of pneumonia is the most infrequent one of this class of respiratory complications, the other and more common ones being the intercurrent lobar pneumonia, the hypostatic pneumonia, and the bronchopneumonia which occasionally follows the initial and not unusual bronchitis.

Klein and Torrey<sup>2</sup> of the University of Pennsylvania reported a series of six cases of paratyphoid fever, four of which were associated with severe pulmonary disturbances during the course of the infection. They cite a case of a frank lobar pneumonia, in which the lungs entirely cleared but the fever persisted. The Widal reaction then showed a positive agglutination for *Bacillus paratyphosus* B.

Our case was similar in that it showed a frank lobar pneumonia, in which the lungs cleared but the fever persisted. But the Widal test in our case showed a positive agglutination for the true *Bacillus typhosus* in all dilutions.

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1. Osler and McCrae: Principles and Practice of Medicine, Ed. 9.

2. Klein, T., and Torrey, R. G.: Am. J. M. Sc. **159**: 548 (April) 1920.

**Mental Hygiene in Industry.**—Practical measures for a mental hygiene of industry call for three types of workers, the psychiatrist, the psychologist, and the psychiatric social worker. The psychiatrist is the best specialist we yet have in knowledge of temperament and conduct; the psychologist possesses some proved methods of measuring mental capacity; and the psychiatric social worker contributes knowledge of the family and social conditions that help form the personality of an individual.—M. C. Jarrett, *Hospital Social Service* **36**:362 (May) 1921.

## THE OVARY AND THE ENDOCRINOLOGIST

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The ovary exerts a powerful influence on both the primary development of the female sex organs and their function during sexual life. Whether other glands of internal secretion affect the sexual sphere, except secondarily, that is, by intermediation of the ovaries, is more than doubtful. For example, the claims of Goetsch<sup>1</sup> that anterior lobe pituitary extract stimulates the growth of the sex organs was disproved by me<sup>2</sup> in 1919 and more recently again by Sisson and Broyles.<sup>3</sup> Yet this supposititious pituitary influence continues to crop out in the literature and in the "therapeutic" advertising pamphlets with which the medical profession is bombarded.

No matter how often a plausible appearing claim is shown to be wrong, if it appeals to the imagination or meets with the desire of the therapist for new and dramatically effective agents, the falsity continues to be accepted. The results of incomplete experiments, isolated empiric observations and fantastic hypotheses are thrown together to form a glittering and ever changing kaleidoscopic picture. A new terminology is being coined. Shotgun mixtures containing the "fifty-seven varieties" are being circulated. What is to be the end of this seemingly uncontrolled wave of mysticism, hysteria, commercialism and credulousness? Does it betoken the birth of another medical cult, to be controlled by the charlatan and self-seeker, and which, at least for the moment, will carry along with it the overoptimistic, the uncritical and the untrained members of our profession? If this must be the outcome, the sooner the break occurs the better; then all hail to the "endocrinopractor"! The profession is well rid of him, but let us at least try to save the unwary, whom he is at present deluding and perverting.

In what follows I present an analysis of the influence exerted by the ovaries on the genital sphere and on the body as a whole.

This analysis includes: (1) the developmental period; (2) the period of passive growth before puberty; (3) pubescence, with its local generative changes and the development of the secondary sex characters, and the menstrual cycle; (4) pregnancy.

#### THE DEVELOPMENTAL PERIOD

Observation on true hermaphrodites<sup>4</sup> has shown that the genital system of both sexes may be represented in one individual. The amount of development of the male or female duct systems, in such an individual, is quantitatively dependent on the predominance of the ovarian or testicular constituents in the bisexual gland (ovotestis). The secondary sex characters, among which are included the bony pelvis, the larynx and voice, breast, hair distribution and psyche, may also be preponderantly of the male or female type

1. Goetsch, E.: The Influence of Pituitary Feeding upon Growth and Sexual Development, Bull. Johns Hopkins Hosp. **27**: 29 (Feb.) 1916.

2. Frank, R. T.: Influence of Pituitary Extracts on the Genital Tract, J. A. M. A. **73**: 1764 (Dec. 6) 1919.

3. Sisson, W. R. and Broyles, E. N.: Influence of Anterior Lobe of Hypophysis on the Development of the Albino Rat, Bull. Johns Hopkins Hosp. **32**: 23 (Jan.) 1921.

4. Lacassagne, A.: Gynéc. et obst. **1**: 273, 1920.



or incongruously mixed. The true hermaphrodite is bisexual. Complete physiologic potency of both sex components, however, does not occur; more often complete sterility exists.

These findings, together with the facts gleaned from experimental transplantation of the gonad of one sex into an individual of the opposite sex,<sup>5</sup> with the result that especially the secondary sex characters change, shows that the development of the sexual duct systems (wolffian and müllerian ducts) and of the secondary sex characters are qualitatively and quantitatively governed by the sex glands.

#### THE PERIOD OF PASSIVE GROWTH

The period of passive growth normally begins when the genitals are fully formed in the fetus, and extends until puberty sets in. During these years the genital tract is undergoing slow, progressive increase in size. The secondary sex characters toward the end of this period gradually became more apparent. The ovaries throughout the years of infancy and childhood harbor growing and ripening follicles, but quantitatively, follicle ripening is still insufficient to initiate puberty.

In rare instances, premature puberty occurs in infancy.<sup>6</sup> Diverse etiologic causes have been noted, among which are teratomas of the pineal gland, tumor of the suprarenals, and ovarian neoplasms. In Harris'<sup>7</sup> case, in which menstruation and other signs of adolescence were evident at 5 years of age, removal of the ovarian new growth was promptly followed by disappearance of all these premature phenomena. Diverse causes, therefore, can accelerate the ovarian action with resultant premature pubescence.

Operative removal of the ovaries during the period of passive growth causes the rest of the genital tract to atrophy; the secondary sex characters fail to develop, and an individual of neuter or eunuchoid type results.<sup>8</sup>

Thus we see that the ovaries control the growth and functional activity of the sexual tract, and that exceptionally the sex function can be activated long before the normal time. We do not know what agency brings about puberty. Such influences as have been ascribed in the literature to the involution of the thymus or pineal gland, to pituitary activity, etc., are purely hypothetical.

#### THE PERIOD OF PUBERTY AND SEXUAL ACTIVITY

Attention has been wrongfully focused on the most visible phenomenon of puberty—menstruation. But this bleeding may never occur, although the individual is nubile, fertile and bears children. I have encountered two cases of this character. In India, infant marriages are celebrated in order that pregnancy may supervene and thus suppress even the first menstruation.

Of more importance as a criterion of puberty is the full development of all the attributes of femininity.

From the point of view of fertility a roomy pelvis, a well developed duct system (vagina, uterus, tubes), and normal ovaries are essential. The secondary sex characters play an important rôle, good mammary glands assuring nutrition to the progeny, and the sex allures (at least among primitive races) adding to the likelihood of impregnation.

The so-called menstrual or monthly cycle is due to ovarian action on the uterus. As far as can be determined at present, only one factor comes into play, and that is the development, growth and evolution of the ovarian follicle, which begins as the primordial follicle, is called a graafian follicle as it ripens, and, after ovulation or bursting has taken place, completes its cycle of existence as the corpus luteum.

Throughout these stages the follicle produces a hormone which directly influences the uterus. The amount of uterine reaction appears to depend on the quantitative output of the secretion. Only during the early active stage of existence of the corpus luteum is an additional influence exerted on the uterus. This special function which facilitates nidation, i. e., the embedding of the ovum, will be referred to later.

*Stage of Rest.*—The hormone developed by the small follicle or follicles is not sufficient to produce any uterine change. Hence at this stage, which in general corresponds to the first four to six days after menstruation, the uterine mucous membrane is thin and pale. The uterine glands are straight, far apart and inactive (Fig. 1).

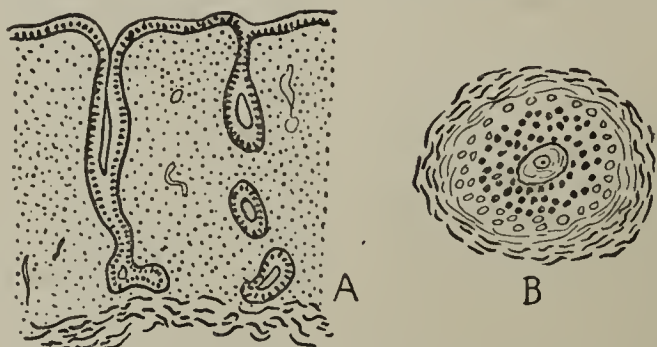


Fig. 1.—Stage of rest, extending from one to four days after the end of menstruation. A, thin uterine mucous membrane, with straight glands which are far apart. The stroma is of connective tissue type. B, graafian follicle from the ovary, maturing, but as yet without follicular cavity.

*Stage of Secretory Activity* (premenstrual or pregravid stage).—A ripening graafian follicle is found in the ovary at the beginning of this stage. When ovulation takes place, which may be any time between the fifth to the twentieth day after

the onset of the last menstruation, a recent corpus luteum forms in the follicle cavity. The finer changes which characterize the development of the corpus luteum are readily accessible in the literature.<sup>9</sup>

As the hormonal secretion from the ovary increases, the entire uterus, but especially its mucosa, becomes more hyperemic and turgid. The mucosa is now thick, pink, vascular and succulent. The uterine glands are tortuous, corkscrew-like in their course, closely packed, and filled with secretion. The mucosa at this time cannot be distinguished from the decidua of the early months of pregnancy, and Fränkel<sup>10</sup> is correct in calling it the pregravid rather than the premenstrual condition, because the change occurs in order to enable the ovum to embed. Only if the ovum fails to embed does menstruation occur. This makes menstruation equivalent to an abortion of an unfertilized ovum.

*Menstruation.*—If impregnation does not take place, the corpus luteum rapidly loses its functional power over the mucous membrane of the uterus, becomes inactive physiologically, and regresses. In consequence of the withdrawal of the stimulating action of the corpus

5. Steinach: Centralbl. f. Physiol. **25**, No. 17, 1911; Arch. f. d. ges. Physiol. (Pflüger's) **144**: 71, 1912.

6. Lenz, T.: Vorzeitige Menstruation, Geschlechtsreife und Entwicklung. Arch. f. Gynäk. **99**: 67, 1913.

7. Harris, R. H.: Surg., Gynec. & Obst. **24**: 604 (May) 1917.

8. Tandler, T., and Grosz, L.: Die biologische Grundlage der sekundären Geschlechtscharaktere, Berlin, J. Springer, 1913.

9. Meyer, R., and Ruge: Centralbl. f. Gynäk. **37**: 50, 1913. Schroeder, R.: Arch. f. Gynäk. **101**: 1, 1914. Miller, J. W.: Ibid. **101**: 569, 1914. Frank, R. T.: The Clinical Manifestations of Diseases of the Glands of Internal Secretion in Gynecological and Obstetrical Patients, Surg., Gynec. & Obst. **19**: 618, 1914.

10. Fränkel, L.: Liepmann's Handbuch der Frauenheilkunde, Berlin, F. C. W. Vogel **3**: 92, 1914.



luteum hormone, the much hypertrophied uterine mucosa undergoes degeneration and disintegration.

In the later part of the secretory stage the mucous membrane was already divisible into three layers, an outer or superficial, compact layer, a middle layer riddled with glands, the spongy layer, and the deepest or unchanged basal layer (Fig. 2). With failure of nidation and withdrawal of the ovarian secretion, the two superficial layers of the uterine mucosa, known as the functional layer (the compact and spongy layers), rapidly undergo necrosis and disintegration, and are cast off.<sup>11</sup> Usually they disintegrate into minute fragments unnoticed in the menstrual blood; exceptionally, when the uterine contractions are premature and violent, they are expelled in larger complexes (dysmenorrhea membranacea). The interior of the uterus is thus to a great degree denuded of its covering and forms a large wound surface (Fig. 3 B). Through this wound blood is poured out into the uterine cavity. When the source of bleeding is from opened up blood vessels the blood can clot; where the blood seeps through the necrotic tissues still adherent to the basal layer, it loses its coagulability.<sup>12</sup> The end of menstruation occurs when regeneration covers the denuded areas and when the excessive uterine hyperemia disappears.

Menstruation, therefore, is analogous to abortion in several ways. It is due to the casting off of the (unfertilized) ovum. The hemorrhage is comparable to the lochial flow, and each menstruation is followed by a period of repair.

#### PREGNANCY

Pregnancy results when an ovum is fertilized and becomes attached, normally in the interior of the uterus, abnormally in the tube, ovarian follicle, peritoneum, etc.

In the human being, ovulation is supposed to occur sometime between the fifth and the twenty-fifth day after the onset of the last menstruation (i. e., from one to twenty days after cessation of bleeding). Conjugation of the sex cells normally takes place in the tube

shortly after coitus, but according to analogous observations made on animals, from eight to ten days elapse before the fertilized ovum reaches its point of embedding.<sup>13</sup> Thus the impregnated ovum reaches the uterus when the uterine mucosa is in the later secretory stage.

The fertilized ovum has the power to cause the corpus luteum to persist, and consequently the still active corpus luteum secretion prevents necrosis and destruction of the lining of the uterus. Moreover, the fetal coverings (trophoblast, later the placenta) elaborate a substance which has an action identical with that of the corpus luteum.<sup>14</sup>

The combined influence of these hormones accounts not only for the persistence of the decidua but also for its exaggerated development.

Even if the implantation of the ovum is extra-uterine, the uterine decidua persists throughout the period of pregnancy.

The special and transitory action of the corpus luteum which sensitizes the uterine mucous membrane in such a fashion that after the occurrence of trauma a marked production of decidual and other cells, such as occur normally only in the maternal (basal) layer of the placenta, takes place, is of importance in insuring a favorable nidus to the ovum.<sup>15</sup> The fertilized egg acts as a foreign body, burrows by lytic action into the uterine decidua, and produces the maternal reaction which assures nutrition and blood supply. Consequently, early removal of the corpus luteum produces abortion.

In the human being the yellow body appears essential at most during the first six weeks.<sup>16</sup>

Furthermore, during the period in which the corpus luteum is active, which, if impregnation does not occur, is for only a week or more, but if pregnancy supervenes occupies ten months, no ovarian follicles attain full ripeness. Their growth is interfered with and they early undergo atresia.<sup>15</sup>

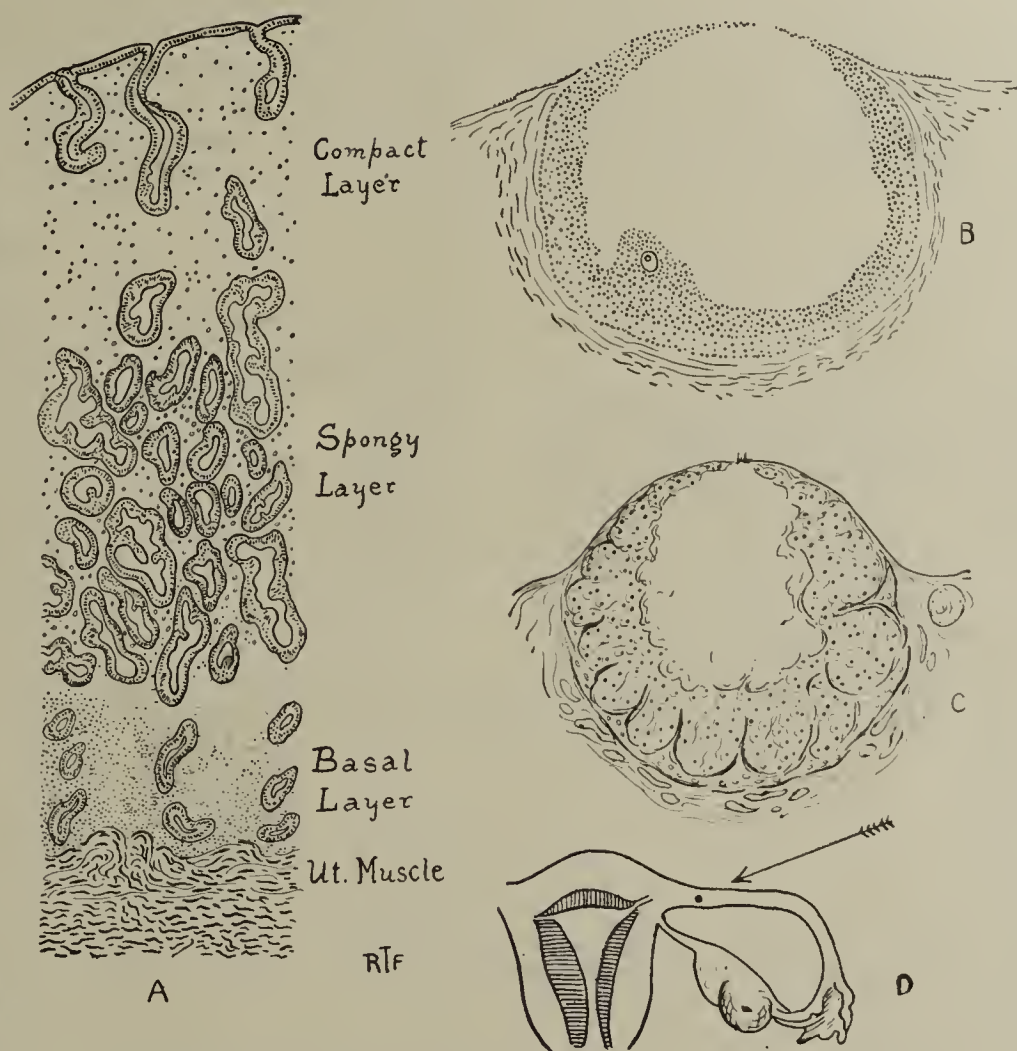


Fig. 2.—Stage of secretory activity, extending from the fourth day after the end of menstruation until onset of the menses, or continuing throughout pregnancy. A, uterine mucous membrane much hypertrophied and plainly divisible into three layers. In the middle layer the glands are back to back. The stroma of both superficial layers shows decidual change. The basal layer is unaltered. B, ripening graafian follicle ready to rupture. Ovulation takes place during the first or second week following menstruation. C, corpus luteum during its active stage. D, arrow points to the ovum, which is traversing the tube while the uterine mucosa is preparing for its reception.

11. Schroeder, R.: Ueber des Verhalten der Uterusschleimhaut zur Zeit der Menstruation, Monatschr. f. Geburtsh. u. Gynäk. **39**: 3, 1914. Die Pathogenese der Meno. u. besonders der Metrorrhagien, Arch. f. Gynäk. **110**: 633, 1919. He believes that absence of corpus luteum and presence of many ripening follicles cause persistent mucosal hyperplasia, thrombosis and localized areas of necrosis. From these and the hyperemia comes the bleeding.

12. Meyer-Rüegg: Die Vorgänge in der Uterusschleimhaut während der Menstruation, Arch. f. Gynäk. **110**: 274, 1919.

13. Grosser: Ovulation und Implantation und die Funktion der Tube beim Menschen, Arch. f. Gynäk. **110**: 297, 1919.

14. Frank, R. T.: The Placenta Regarded as a Gland of Internal Secretion, Surg., Gynec. & Obst. **25**: 329 (Sept.) 1917; "Alleged Placental Functions," Correspondence, J. A. M. A. **74**: 47 (Jan. 3) 1920.

15. Loeb, Leo: The Experimental Production of the Maternal Placenta and the Function of the Corpus Luteum, J. A. M. A. **53**: 1471 (Oct. 30) 1909.

16. Essen-Möller: Centralbl. f. Gynäk. **28**: 869, 1904.



## THE INTERSTITIAL GLAND

The foregoing analysis covers all the phenomena normally occurring in the sexual sphere. No reference has been made to the "interstitial gland," because, as again has been lately emphasized by Robert Meyer,<sup>17</sup> no such structure exists in the human being. In animals it is present in some and absent in other species. No valid evidence has been adduced to show a function for this "gland."

## METABOLISM

Much has been written about the effect of castration on the basal metabolism. Murlin and Bailey<sup>18</sup> review the subject and show that castration produces no marked change. Further investigation along these lines is imperatively required.

## OVARIAN EXTRACTS

Iscovesco,<sup>19</sup> Aschner,<sup>20</sup> Herrmann,<sup>21</sup> Frank in conjunction with Rosenbloom,<sup>22</sup> Lee and Giese have shown that the corpus luteum contains lipoidal bodies which produce uterine hyperemia and rapid hyperplasia of the musculature and mucosa of this organ. The breasts are also strongly stimulated.

In May, 1917, assisted by Giese, I performed the following as yet unpublished experiments.<sup>23</sup> Since then opportunity to continue the work has been lacking.

A quantity of follicle fluid, obtained by puncturing ripening follicles from the ovaries of cows, was collected. In the one series the ovaries were derived from nonpregnant animals, in the second from those of pregnant ones. Two virgin rabbits were injected subcutaneously in each series with 1 and 2 c.c., respectively, of the follicle fluid daily for ten doses. In all four animals, well marked hyperplasia of the uterus was noted, the material from nonpregnant animals being the more effective.

Wintz<sup>24</sup> was unable to obtain similar effects. His dosage appears to have been insufficient. He and Seitz and Fingerhut<sup>25</sup> assert that they separated two bodies from the ovary, one, "lipamin," which apparently acts like the lipoid obtained by other authors, and a "luteo-lipoid" which increases the coagulability of the blood and "inhibits menstruation." These products are being exploited commercially.

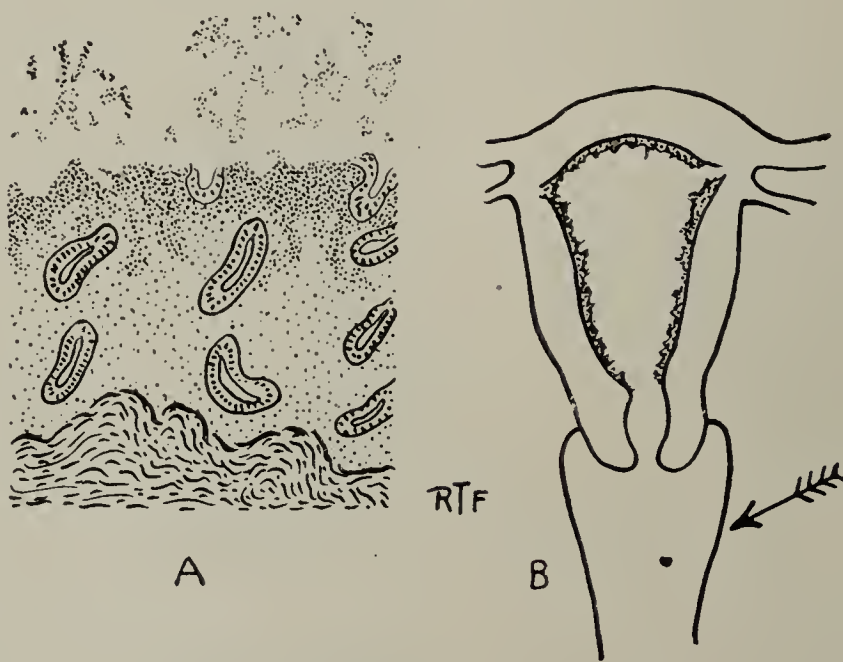


Fig. 3.—A, uterine mucosa during menstruation. The functional layers have exfoliated. The basal layer remains. It forms a ragged wound surface. B, arrow points to the unfertilized ovum, which is being expelled through the vagina.

Pharmacologic researches, therefore, show that the follicle as well as the corpus luteum secretion can maintain the growth and nutrition of the uterus. In large dosage, hypertrophy of uterine muscle and mucosa takes place. The external genitals and mammary glands are also stimulated. These reactions are specific.

Such other properties as vasoconstriction and dilatation, and anticoagulant and coagulant action, which have been ascribed to corpus luteum extract, are non-specific and are shared by many tissue extracts.

## ABNORMAL OVARIAN ACTION

There is evidence to support the statement that the amount of sex equipment is quantitatively dependent on the gonad. The oversexed woman, accordingly, has more ovarian secretion than her frigid sister. Evidence that homosexuality has an anatomic basis, and is dependent on a bisexual gonad, is accumulating.

Hypoplasia of the female duct system (vagina, uterus, tubes) results from insufficient ovarian action. It can be induced artificially by irradiating the ovaries and thus interfering with follicle ripening. Clinically, congenital and acquired hypoplasias which include many cases of amenorrhea, functional dysmenorrhea and sterility are common.

Hyperplasia of the genitals results from excess ovarian action. Such instances as premature puberty are striking examples. Clinically these disturbances most often manifest themselves as menorrhagia or metrorrhagia. The uterine change may include myometrial or mucous membrane hyperplasia or a combination of the two. The excessive bleeding can be due to increase of pelvic hyperemia, to impaired muscular contractility and to excessive menstrual exfoliation. Schroeder<sup>11</sup> has found absence of a corpus luteum and presence of many ripening follicles in some of these cases. His results are not convincing.

The present tendency which seeks to include all menorrhagias and metrorrhagias in the functional group is fallacious. Bleeding may be due to systemic causes (heart, and pulmonary and kidney diseases), to local inflammations (tubal), and to uterine neoplasms (fibroids, cancer). Hence expert opinion, at times assisted by diagnostic curettage (microscopic examination of curettings!), is more often needed than an "endocrine prescription."

## OVOTHERAPY

This leads me to state that today we have no better ovarian extract on the market than we had in 1910 when I first discussed this subject.<sup>26</sup> The commercial preparations are "degreated" or "defatted" and therefore deprived of such minute doses of the active prin-

17. Meyer, Robert: Beiträge zur Lehre von der normalen und Krankhaften Ovulation und der mit ihr in Beziehung gebrachten Vorgänge am Uterus, Arch. f. Gynäk. **113**: 259, 1920.

18. Murlin, J. R., and Bailey, H.: Surg., Gynec. & Obst. **25**: 332 (Sept.) 1917.

19. Iscovesco, M. H.: Compt. rend. Soc. de biol. **73**: 104, 1912; Rev. de gynéc. **22**: 160, 1914.

20. Aschner, B.: Arch. f. Gynäk. **99**: 534, 1913.

21. Herrmann, E.: Monatschr. f. Geburtsh. u. Gynäk. **41**: 1, 1915.

22. Frank, R. T., and Rosenbloom, J.: Physiologically Active Substance Contained in the Placenta and Corpus Luteum, Surg. Gynec. & Obst. **21**: 646, 1915.

23. These experiments were performed at the Crocker Special Research Laboratory, Columbia University, New York, in May, 1917.

24. Wintz, H.: Die physiologisch-chemische Wirkung des Follikelsaftes, Arch. f. Gynäk. **113**: 457, 1920.

25. Seitz, Wintz and Fingerhut: München. med. Wchnschr. **61**: 1657, 1734, 1914.

26. Frank, R. T.: Has Ovotherapy as Now Practiced an Experimental Basis? Arch. Int. Med. **6**: 314 (Sept.) 1910.



ciple as they may have originally contained. Pharmacologically they are inert. This includes the ovarian extracts, corpus luteum extracts, ovarian residue and ovarian substance, etc., of which we read that they cure amenorrhea, sterility, dysmenorrhea, menorrhagia, metrorrhagia, pernicious vomiting, climacteric disturbances and mental confusion in women, etc.

The near future may supply us with an at least partially potent lipid extract. What is required is purification of the lipid, a suitable bland menstruum and parenteral exhibition. The action of such an extract will be as specific for the genital sphere as that of thyroxin is on the metabolism. Probably the placental lipid, which is far easier to obtain, will act as an efficient substitute.

In the meantime, it seems likely that we shall continue to receive ecstatic reports from the commercial laboratories of the marvelous cures obtained with ovarian extracts, especially if combined with a pinch of thymus, spleen, bone-marrow and pancreas.

#### SUMMARY

1. The development of the female (Müller's) duct system from an indifferent anlage is dependent on the presence of the ovary.

2. The transformation of the infantile genital tract, inclusive of the secondary sex characters, to the adult stage results from a quantitative increase in ovarian secretion.

3. The normal sexual cycle includes maturation of an ovarian follicle, ovulation, impregnation and pregnancy. Menstruation signifies the abortion of an unimpregnated ovum. The accompanying uterine changes are in many ways analogous to those occurring in abortion.

4. Decrease or increase in ovarian secretion can produce clinical manifestations. Similar manifestations may result from other (nonovarian) causes.

5. The ovarian extracts now in use have been deprived of the small amount of active substance that they may have contained when fresh. Their pharmacologic effect on the sexual tract is nil. This does not imply that a potent extract cannot be elaborated.

Majestic Building.

**Evolution of Public Health Work.**—In the process of evolution, according to C. V. Chapin (*Health News* 36:308 [Dec.] 1920), public health work has passed through three stages, the first dealing almost exclusively with environment. Health work was based on the idea that disease breeds in filth and, therefore, it chiefly consisted in waging a war against filth. This was the era of sanitation, the building of sewer systems, and the introduction of water supplies—work of great importance, most of which has been so well done that the health officer need no longer give much attention to it, except in rural districts and small towns and villages where he still has to influence people to do away with the insanitary privy and to install a pure water supply. We have learned to discriminate between dangerous dirt and dirt that is not dangerous, therefore less attention is paid to environment than in the past; but the tradition of controlling public health through environment remains as an incubus on the health department. The second stage was concerned chiefly with the isolation of communicable diseases. In the last century, with the filth theory dominant, contagion became recognized as an important factor; it was believed that if every person who had a contagious disease could be quarantined such diseases in time could be stamped out. We still need to isolate cases of communicable disease and probably will continue to do so, but the same stress is not placed on isolation as was given a few years ago.

## THE RÔLE OF TRAUMA IN LESIONS OF SYPHILIS

WITH PARTICULAR REFERENCE TO THE HEREDITARY TYPE \*

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Syphilitic manifestations may be absent during a long period, when the disease may be termed latent. Trauma may excite active lesions on the predisposing soil of syphilitic infection. Gougerot and Clara<sup>1</sup> quote Landouzy's case of an army officer who contracted syphilis, and twenty-five years later developed an osteitis when thrown from his horse. All that time the infection had remained dormant. They regard post-traumatic manifestations as very important because often an underlying syphilitic infection is overlooked. Such lesions may be allowed to persist for months and even years, when a few weeks' vigorous antisiphilitic treatment would produce healing. There is a marked tendency for syphilitic patients to fractures following comparatively slight trauma. Coues<sup>2</sup> explains that roentgen-ray examinations of such cases will often disclose signs of former periostitis.

In addition to these instances of a pathologic condition of the bone, gummas tend to occur at the site of repeated daily traumatism. Railliet<sup>3</sup> describes the case of a chauffeur with a skin lesion of the arms and that of an army officer with an exostosis of the tibia and an ulceration of the leg due to rubbing the skin when mounting his horse. In this connection he recalls the frontal gummas of Islam due to rubbing the forehead against the door mat of the mosque. This is well described by Lacapère and Laurent,<sup>4</sup> who treated forty cases of gummatous lesions in the dispensary at Fez, Morocco. Fourteen of these were on the forehead, and they state that such localization can be explained only by the predisposing influence of the trauma when the men kneel in prayer, according to the Mohammedan custom, with the brow resting on the stone floor of the mosque. Five times a day, they say, the faithful thus prostrate themselves from ten to twenty minutes, and their brows show the effect of this prolonged contact with the stone floor.

Certain cases of paresis have been acutely precipitated and others adversely influenced by craniocerebral injury. It is fair to conclude that a given injury to the head in a nonparetic syphilitic is responsible for the paretic signs which follow and disable the patient soon thereafter. Osnato<sup>5</sup> states that cerebral syphilis of the paretic type develops when something happens to change the permeability of the blood vessels of the brain, allowing the spirochetes and their toxins access to the brain tissue. Trauma of the brain may, therefore, permit the spirochetes to invade the brain tissue by causing vascular injury or brain destruction. This invasion is followed by gliosis and nerve cell sclerosis, which are also integral parts of paretic brain pathology.

\* From the Pediatric Clinic of the Post-Graduate Hospital of Chicago.

1. Gougerot and Clara: *J. méd. franç.* 7:216, 1918.

2. Coues, W. P.: *Interstate M. J.* 23:603 (Aug.) 1916.

3. Railliet: *Bull. et mém. Soc. méd. d. hôp. de Paris* 43:677 (July 1919).

4. Lacapère and Laurent: *Paris méd.* 8:94, 1918.

5. Osnato, M.: *J. Nerv. & Ment. Dis.* 52:112 (Aug.) 1920.



Inherited as well as acquired syphilis is betrayed by trauma. All tissues may be affected, skin, subcutaneous tissue, muscle; and in each localization tertiary lesions may be seen. Gougerot and Clara emphasize that post-traumatic syphilitic manifestations may occur after all types of trauma, single wound, slight repeated, and light or violent trauma, wound or contusion. To bring further evidence to bear on the importance of trauma in exciting lesions in individuals with hereditary syphilis, two cases are described.

#### REPORT OF CASES

The children are half sister and brother. The father of the girl, who is the elder, is not known except that he had been a soldier and regularly married to the mother. He deserted when the child was 3 years old. The father of the boy and the three younger children has lived with the mother for eleven years although not legally married. He is well developed physically, has no syphilitic signs or symptoms, and the Wassermann test on his blood was found negative by two different laboratories using the same specimen. The mother has radial scars at the corners of her mouth and fissures across the lips pathognomonic of hereditary syphilis. The Wassermann test on her blood is four plus. She has had no miscarriages and has been pregnant six times. One of the children died in infancy from a "bowel disorder." The three youngest children have negative Wassermann tests, although there are suggestive stigmas of hereditary syphilis. The mother has a sister four years older who seems normal and whose two children are well developed mentally. Indeed, there is a wide social gap between the sisters. Their mother died of "asthma" and their father of "dropsy." The children with whom we are concerned have hereditary syphilis as described below. There is the possibility that it is a third generation infection from the signs of hereditary syphilis in the mother, if additional acquired syphilis in the mother is not proved.<sup>6</sup>

The girl is 15 years old. There is no history of snuffles or rash in infancy. She had pneumonia, whooping cough and measles in the order given. In 1915 she was treated for interstitial keratitis. Examination at that time showed her only fairly well developed and anemic. There was considerable nasal discharge and marked notching and peg shape of the upper incisors. The teeth were irregular in shape and disposition, poorly kept and carious. The Wassermann test on the blood was four plus. Subsequently the tonsils were removed, and there was another positive Wassermann test. In February, 1921, she was thrown to a cement floor by playmates. She became comatose. The following day she could be aroused to follow directions such as projecting the tongue and swallowing medicine, but she closed her eyes and showed no interest in her surroundings. Her expression was blank. After a few days she became more aware of her surroundings, even to the point of refusing to go home. During this time she lay in the home of a neighbor. There was no vomiting or headache. At times she complained of epigastric pain, not bandlike. There were no lightning pains. Her expression was that of a mental defective. There was an occasional paresis of the right side of the face, and the right nasolabial furrow was smoothed. The left ocular aperture was slightly larger and required less force to open. Hutchinson teeth and strabismus were conspicuous. The strabismus was a convergent, concomitant alternating type of about 20 degrees, both eyes fixing. The fundus was normal. At times there was some inaccuracy in placing the right heel to the left knee and some diminished pain sense over both tibiae. The Romberg sign was indicated, and often there was some unsteadiness in walking. There were no pathologic reflexes. The mentality was slow but clear. Her mental age, determined by Dr. David Levy of the Institute for Juvenile Research, was 9½ years, placing her in the high grade defective group. It was difficult to differentiate the inherent defect due to syphilis and that due to inherited mentality as such. She was characterized by lapses of attention which would probably show different results in further scores. Some of her reactions are considered definitely pathologic. There was

better ability in immediate memory than in other tests, and she was especially poor in tests involving comprehension.

The blood pressure was 115 systolic, 70 diastolic and 45 pulse. The Wassermann test on the blood and spinal fluid was doubtfully negative. A few days after the accident there were generalized muscular spasms resembling an epileptic seizure. The mother states that there had never been such occurrences previously. Since that first attack there have been more than a dozen. She has been found lying on the street in convulsions, frothing at the mouth. She is removed to her home or the hospital and is nonresponsive for a few hours. She takes liquids, however, within a few hours. When she is closely observed during the examination, the eyelids quiver as if there were a conscious effort to keep them closed. During this period there is a remarkable catatonia. The most bizarre and difficult positions are maintained for many minutes. Another behavioristic peculiarity is her feigning attacks when her mother is announced in the hospital or her discharge home is feared. She hates her home and objects to school, where she is backward and ridiculed by her classmates.

The boy is nearly 10 years old. He was apparently well until January, 1920, when he suffered a fractured femur. He was admitted to the Cook County Hospital, where he was described in the records as well nourished. It was also stated that the pupils reacted to light and accommodation and were normal in shape. There were carious teeth and hypertrophic, septic tonsils. The submaxillary glands were tender, and there was cervical adenopathy. Pediculi were present in the scalp. Extension failed to correct the deformity in the thigh. The roentgen-ray findings were transverse fracture of the shaft of the femur at the junction of the middle and lower thirds. The distal fragment was displaced backward, inward and upward, and there was 3 centimeters (1½ inches) of shortening due to overriding of the fragments. Healing did not occur. Two months after the accident an autogenous bone graft was made into the right femur, and he was discharged a month later.

Two months later he returned to the hospital because of failing vision. There was no pain or local inflammation, and the vision was worse at night. Further history revealed the fact that he was knocked unconscious by the injury, but nothing indicated a cranial wound. Again the family history was stated to be negative. At this time there was noted the quadrilateral head with bulging frontal bosses. The teeth were carious, malposed and in poor alignment. The upper incisors were notched and tapered somewhat to their tips. The tonsils were large and ragged. The liver was enlarged, and there was general adenopathy. The Romberg sign was noted, but otherwise muscle sense and coordination were good. The eyes showed many changes. The pupils did not react to light or accommodation. The lid closure reflex was absent. The right pupil was irregular. The disks were bluish white and the margins were well defined. There were streaks of an old exudation. Three weeks after this last admission the vision was 20/100 in each eye. Color vision was very defective, blue being the only color recognized with any certainty. The Wassermann test was four plus, and the diagnosis was made of primary optic atrophy. A roentgenogram of the head showed the sella turcica irregular in shape with a flattened floor and an increase in the long diameter of this recess. It was noted that the cranial area was disproportionate to the face, being much larger than normal. The sphenoidal sinus seemed to be absent.

Eight months later he was admitted to the Post-Graduate Hospital. The peculiar shape of the head, described so frequently by the French as typical of syphilis inherited to the third generation, was striking. The reflexes were normal save the pupillary, and sensation and stereognostic sense normal. Excoriations of the upper lip were present because of constant nasal discharge. The teeth were in poor condition, and the upper incisors contained concave depressions at their tips. The pupils were unequal, irregular and fixed. He could distinguish only between light and dark.

#### SUMMARY

1. Trauma may excite lesions in individuals with acquired syphilis whose infection is dormant.
2. Bone changes, gummas of the soft tissues and parietic brain changes are the usual manifestations.

6. This question is discussed by the author in the *American Journal of Syphilis* 5: 601 (Oct.) 1921.



3. Trauma may act as the exciting cause in the production of lesions in individuals with hereditary syphilis whose infection is dormant and even unsuspected.

4. A girl with hereditary syphilis, possibly of the third generation, developed epileptiform seizures and mental disturbances following a head injury causing coma.

5. Her half brother likewise infected developed primary optic atrophy following similar trauma. The healing of the fracture produced by the same injury was markedly retarded.

#### CONCLUSION

Trauma may incite the localization of a syphilitic lesion in an individual with a quiescent infection, acquired or hereditary, probably by producing a locus minoris resistentiae.

### TENDER PRESSURE POINTS WITH SO-CALLED SYMPTOMLESS GALLSTONES \*

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There is nothing new in the statement that gallstones may run a latent course and be accidentally discovered at necropsies or by the surgeon. Kehr<sup>1</sup> emphasizes the fact that symptoms are present in only 5 per cent. of persons affected with this malady. For years my own experience has taught me that cholelithiasis or cholecystitis may be symptomless, i. e., that these conditions do not give rise to symptoms pertaining to the gallbladder proper, but lead to numerous complaints which are not characteristic of a pathologic condition of the gallbladder, so that one's mind is directed to a multitude of abdominal pathologic conditions other than gallbladder disease.

In persons having so-called symptomless gallstones, not only are symptoms present, but one can find in them signs which are almost pathognomonic for a diseased gallbladder. The signs, when present, furnish the physician with a clue for the interpretation of the apparently nonspecific, nongallbladder symptoms. These signs are tender pressure points, elicited in the intercostal spaces in the continuation of the right axillary line and the scapular and posterior median lines at the level of the gallbladder.

My object in this paper is to emphasize two points which, although not new, are often ignored in practice: (1) that gallstones are often seemingly symptomless, and (2) that the correct diagnosis of this condition is possible.

One may divide patients who have the malady into three groups: (1) those who are suffering from typical attacks of pain; (2) those in whom the paroxysms of pain are atypical, and (3) those in whom the element of pain is entirely absent, but who present a train of dyspeptic and nervous symptoms.

The symptoms of patients belonging to Group 1 are usually so clear that the diagnosis can be made correctly from the history alone by even the novice in medicine.

A history of pain, coming on in paroxysms and originating in the pit of the stomach or in the right hypochondrium and radiating to the right shoulder bone and independent of meals, is the sine qua non for the typical form of cholelithiasis usually described in textbooks. A history of jaundice, irregular fever or rigors cannot often be elicited from these patients. At times there is no abdominal rigidity. The liver and gallbladder may not be palpable. On the contrary, the latter is often small and actually found shriveled at operation. Thus, tenderness on pressure may be completely absent from this region. Tenderness frequently elicited in the epigastric region (Fig. 1) may be useless as a diagnostic aid since neurotic persons, especially women, usually react with pain when pressure is exerted in this area. The urine often shows a negative bile and a negative urobilin reaction. There is seldom a demonstrable abnormal change in the stools. Achylia gastrica, anacidity, hypersecretion or hypochlorhydria, or disturbances of gastric or intestinal motility have no direct bearing on gallbladder pathology. The direct proof of gallstone shadows, through the roentgen ray, is often not forthcoming, as the majority of patients with gallstones are obese.

A pylorus shown by roentgenograms to be markedly drawn to the right often has no meaning in obese persons, and when such plates are correctly interpreted this indirect sign points at most to periduodenal or pericholecystic adhesions. The significance of a visible gallbladder shadow as to its pathogenicity is still under discussion by conservative roentgenologists. To diagnose a diseased gallbladder from the character of the bile aspirated by means of the duodenal tube is only occasionally possible. Einhorn advocates this method, and in his hands it seems to be of value in cholecystitis; but the method is hardly accessible to the practitioner and, aside from this, the passage of the duodenal tube is often disagreeable to the patient. The Lyons test is comparatively new, and time will be required to prove the actual value of his discovery for the diagnosis of cholecystitis. Cholesterin determinations of the blood have not been of any value as a diagnostic aid. From these considerations it becomes evident that, notwithstanding the fact that some of the inconstant signs or a combination of them may be present in persons belonging to the typical group, the corner stone for the diagnosis of their condition is the history.

Patients belonging to Group 2 have attacks of pain which are not typical for cholelithiasis. The character of pain is often similar to that in chronic peptic ulcer, dependent upon food. Ulcer might be diagnosed and not found at operation, but the gallbladder may be found filled with stones and chronically inflamed. All the previously mentioned symptoms may be absent, and as the history is not typical of a diseased gallbladder, the correct diagnosis is not made.

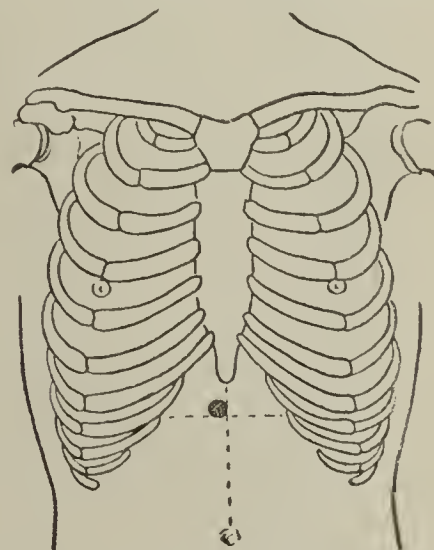


Fig. 1.—Epigastric tender pressure point which is not characteristic of gallbladder disease.

\* Read before the Eastern Medical Society, Oct. 14, 1921.

\*Because of lack of space, this article is abbreviated by the omission of case reports and some illustrations. The complete article appears in the author's reprints.

1. Kehr, H.: *Diagnosis of Gall-Stone Disease*, American Translation, 1901, p. 25.



However, it is true for this group of cases that one will think of the possibility of a diseased gallbladder, notwithstanding the fact that the symptoms are vague. The physician may then obtain a corroboration of his tentative diagnosis through direct or indirect signs of roentgen rays, especially in persons who are not obese. But such a suspicion will not often arise in one's mind when the patients belong to the third group.

Patients belonging to Group 3 do not give a history of either spontaneous pain or attacks of pain. The symptoms of pain cannot be elicited from their histories on the strictest cross-examination. These patients present in their histories a train of dyspeptic and nervous symptoms. Their chief complaints are paroxysmal vomiting or attacks of regurgitation of food, a sensation of a load in the stomach, sour eructations, flatulence, constipation, constipation alternating with diarrhea, loss of flesh, general weakness, anorexia, nausea, etc. In them, there may be a fair combination

of the symptoms mentioned above. In rarer cases, one may speak of a monosymptomatic

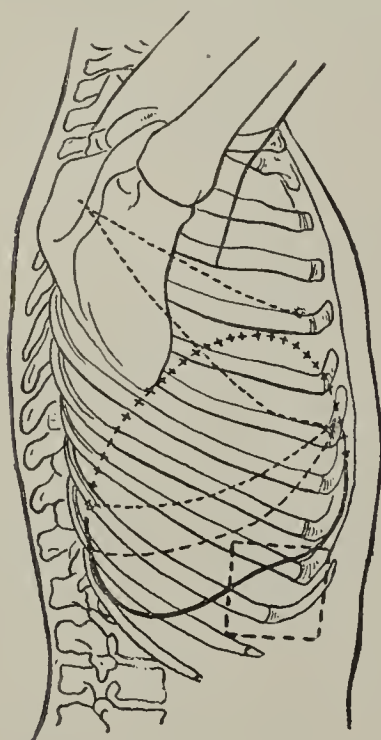


Fig. 2.—Area of tenderness in the continuation of right axillary line.

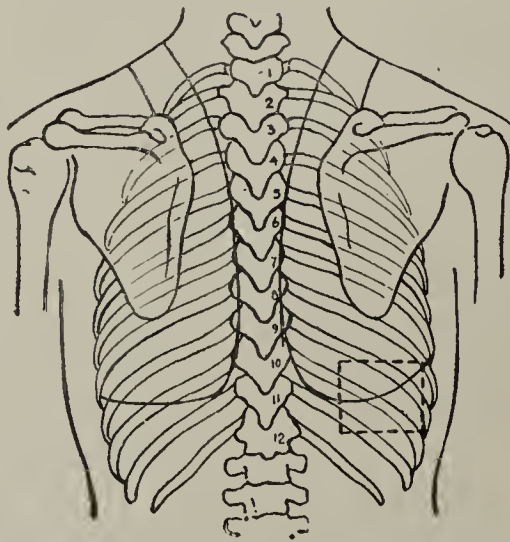


Fig. 3.—Area of tenderness in the continuation of scapular line.

#### DIAGNOSIS

Pressure tender points in the intercostal spaces at the level of the gallbladder, in the continuation of the right axillary (Fig. 2), scapular (Fig. 3), posterior median line (Fig. 4) are almost always found in persons suffering from disease of the gallbladder, even when tenderness in the gallbladder region proper cannot be elicited. The presence of these spots is nearly as characteristic as the history in the group of so-called typical cholelithiasis.

One will frequently omit this important examination in atypical cases, but will not neglect to search for these spots in patients belonging to the first group, and will hardly ever search for them in dyspeptics without pain: wherefore, the importance of searching for the above mentioned tender spots in every dyspeptic, the more especially if these patients have seen many physicians. In eliciting these spots in the intercostal spaces at the gallbladder level, the mind of the practitioner will immediately become concentrated on the gallbladder as the main source of the symptoms which previously have been considered as dyspeptic. Tenderness need not be found in all the areas mentioned. One spot alone may be tender, such as the axillary

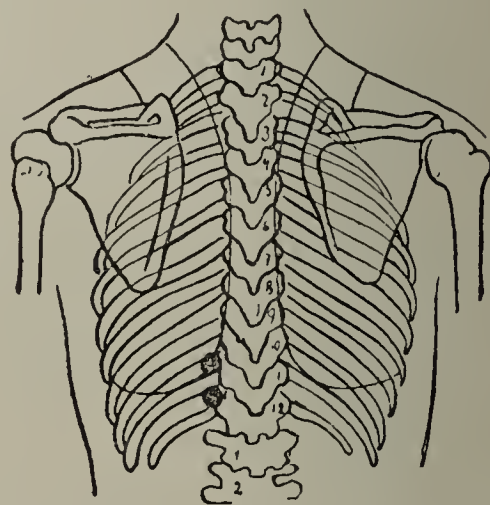


Fig. 4.—Tender pressure points, near the spine to right side.

dyspepsia since there might be only one presenting symptom: as a sensation of a load in the stomach, flatulence, nausea or burning sensation in the epigastric region. Stiller's habitus is present in some.

In order not to be monotonous, I omit the enumeration of the nervous symptoms complained of. Every possible symptom given by a neurotic may be obtained from the history. These patients date their complaints back from three to twenty years. They consult numerous physicians, gastro-enterologists and neurologists. The usual diagnosis made of their conditions is dyspepsia, movable kidney, atonic or spastic constipation, nervous dyspepsia, achylia gastrica, gastrosuccorhea, vagotonia and, last but not least, the scapegoat of all that is unknown in the abdomen—autointoxication. It is obvious that if the patients belonging to this group happen to consult a surgeon, his advice is against surgery. On several occasions, such patients were referred to me by surgeons as dyspeptics. If the family physician becomes disgusted after treating these patients for dyspepsia, he may refer them to a roentgenologist who in routine examination of the gastrointestinal tract may discover direct or indirect signs of a diseased gallbladder.

portion, the scapular or the portion in the posterior median line. The actual proof that these tender pressure points are in direct connection with a diseased gallbladder may be shown by the fact that the tenderness in these areas cannot be elicited when the diseased gallbladder is removed.

#### TECHNIC

In searching for these pressure points, one must apply equal force to the right and to the left side with the palpating fingers. This procedure should be repeated on several occasions, especially in neurotic women. If on repeated examinations there is marked tenderness on the right in comparison with corresponding areas to the left, a pathologic gallbladder is the source of the symptoms in the painless dyspeptic. This patient should be referred to a surgeon, even though the report of the roentgenologist is negative. The rule is: Never forget to search for tender pressure points, in the areas mentioned above, in dyspeptics and also in cases simulating peptic ulcer or chronic appendicitis.

I have been able many times correctly to diagnose cholecystitis as a concomitant condition in otherwise clear cases of gastric ulcer or chronic appendicitis by



finding the tender pressure points. Interns in the institutions with which I am connected have often been able to make a correct diagnosis of diseased gallbladder in painless dyspeptics by the examination described.

To my mind there can be only one explanation for the tender pressure points. Gallstones are rarely aseptic. As a rule there is a concomitant cholecystitis. The infective agent of the gallbladder, for unknown reasons, has a predilection to settle in small areas of intercostal nerves at the gallbladder level. The inflammatory condition in minute areas of these nerves is not sufficient to cause spontaneous pain, but reaction occurs as soon as pressure is exerted on the spot. If this tenderness should be due to a reflex from the diseased gallbladder, it would manifest itself spontaneously, i. e., without pressure. I have missed the pressure points in three cases of chronic peptic ulcer which were found at operation to be associated with gallstones. The gallbladders in these cases were as thin as tissue paper, without the slightest inflammatory signs. From two of these gallbladders, sections were made and the histologic picture in both cases was normal. Therefore, I am forced to believe that the tenderness in the majority of cases of cholecystitis is due to infection of minute areas of intercostal nerves.

#### CONCLUSION

While the eliciting of tender pressure points in the mentioned areas in cholecystitis with or without stones is not new, they are hardly ever searched for in atypical cases, and rarely in dyspeptics who present no symptoms pertaining to the gallbladder.

63 East Eighty-Fourth Street.

## *Clinical Notes, Suggestions, and New Instruments*

### FIGHTING DIPHTHERIA IN THE COUNTRY

HARVEY B. BASHORE, M.D., WEST FAIRVIEW, PA.  
Medical Director, Cumberland County

The modern way of fighting diphtheria by the Schick test and toxin-antitoxin, while almost ideal, is hardly yet applicable in many of the rural districts, so we have to rely on antitoxin and the culture tube. Many physicians in my district use antitoxin, but they do not use the culture tube; thus, between the practitioners and the neglectful parents we miss a good many cases, and all of these patients become convalescent carriers without restrictions. Here it is that the health authorities can do much good by stepping in and taking cultures of all possible contacts, thereby gradually rounding up these missed cases which are the real menace to the community. It is presupposed, of course, that all known patients with the disease are properly isolated and quarantined, which is generally the fact in well organized states.

Therefore, when a case of diphtheria occurs in the district under my supervision, even though the patient and all the immediate contacts have received antitoxin, a nurse, especially trained for this work, visits the patient and gives such instruction as may be necessary in regard to isolation, nursing, etc. She also learns a good deal about the outside contacts, or any other possible cases: these are then visited and throat cultures taken; all positive ones are put under observation quarantine until two successive negative cultures are obtained. No placard is put up unless it becomes absolutely unavoidable. By this plan we have greater cooperation on the part of the public and—a very necessary thing—on the part of physicians. When a case occurs in a school, the nurse, after explaining the procedure to the teacher and the pupils, takes throat

cultures of the entire school. I say the entire school, for although this is usually really unnecessary, it is good policy. On account of the mental narrowness of an isolated community John Brown will complain because a culture was taken of his child and not of Mrs. Jones'. So we take all, and it saves us a lot of trouble. Those whose report is returned positive are immediately excluded from school and kept under observation quarantine until the usual two negatives appear.

In nearly every little outbreak we speedily come upon the missed case—a mild sore throat with no clinical symptoms; but the positive culture and the history generally tell the tale, and if taking cultures did no more than locate these it would prove the value of the plan. Sometimes the missed cases are not so mild, but are the result of pure neglect. In a certain parochial school, diphtheria had been very prevalent—a case or two every now and then for about two years. We finally got in touch with this place and took twenty cultures of the most likely carriers, and only one report came back positive. On inquiry we found that this young man had been sick with sore throat and in the school infirmary for a week; he had no physician, as the matron had made a diagnosis of tonsillitis. The school authorities were much chagrined and felt that we had found the one case to show up their neglect; and so we had. But ever afterward these people had great respect for the bacteriologist's report, and incidentally have had no diphtheria since that time.

As another added factor in suppressing diphtheria, Pennsylvania now requires two successive negative cultures before release from quarantine. This is vastly more reasonable and scientific than the fixed period of twenty-one days, which in most cases is too short. The following illustrates the point in question: Some years ago we had a small outbreak in a certain rural school district, which furnished one case after another, very slowly and deliberately. Several times we felt that we were just about over the outbreak, when a new case would appear. We investigated the quarantine and isolation, and found everything and everybody meeting the legal requirements. We became suspicious and began to take cultures of the patient on the day of quarantine removal, and—if I remember correctly—every one was returned positive. Here, then, was the cause for the continuance of the disease. We explained the condition to the parents of the patients—we did not then have the same authority as now—and they kept the children isolated for two weeks longer. The outbreak stopped short, and there has been no case in that community since, between five and six years ago.

In this work in the outlying districts it is fine to see the cooperation we have with the public: the people seem to realize the value of scientific precision and the danger of carriers spreading the disease. A little more time, a little more education and we shall have the Schick test and toxin-antitoxin in the country school; and then diphtheria will become as rare as smallpox.

### MENINGOCOCCUS MENINGITIS WITH BASAL BLOCKAGE \*

JOSEPH H. BAINTON, M.D., NEW YORK

*History.*—A boy, aged 8 months, artificially fed, and perfectly well up to the time of the present illness, developed a cough, Oct. 1, 1921, which lasted for a few days. October 9, the child became decidedly worse; developing projectile vomiting, five convulsions, fever 102, and cervical opisthotonos. Vomiting and convulsions were not repeated, but fever and cervical opisthotonos continued until the time of admission to the hospital, October 14. The mother stated that all during the week the child had been restless and fretful, and had constantly held the head in the same fixed position.

*Physical Examination.*—The infant was well nourished, and apparently normal in development, lying quietly in bed. Cervical opisthotonos was extreme, flexion being impossible with a reasonable degree of force. The anterior fontanel was 1 inch (2.5 cm.) in diameter, bulging and pulsating. The pupils were equal and reacted to light. There was congestion of the posterior half of the right ear drum. The spinal column was normal in contour and showed normal flexibility except in the cervical region. There was a slight degree of muscular

\* From the Medical Service of St. John's Long Island City Hospital.



rigidity. The deep reflexes were normal. Kernig's sign was absent.

*Treatment and Course.*—On lumbar puncture, the fluid, unfortunately, was contaminated by accidental puncture of a vein, making it impossible to evaluate properly its appearance or to perform complete laboratory analysis. The fluid was under greatly reduced pressure, only 1 c.c. dropping out at a very slow rate. A twenty-hour culture developed meningococci, verified later by positive agglutination.

October 15, lumbar puncture yielded a "dry tap." Ten cubic centimeters of antimeningococcus serum was introduced into the spinal canal. We can see no objection to injection of fluid into the empty spinal canal, provided force is not used. As a test and safeguard we allowed 5 c.c. of serum to run out, which it did drop by drop.

October 16, lumbar puncture yielded only a few drops of reddish fluid. Five cubic centimeters of serum was introduced.

October 17, lumbar puncture gave a "dry tap." The skull was trephined by Dr. F. C. Keller. The right lateral ventricle was punctured, 25 c.c. of fluid allowed to escape, and 15 c.c. of serum introduced.

October 19, lumbar puncture, to our surprise, yielded a cloudy yellow fluid under pressure at the rate of 60 drops a minute, the fontanel flattening out during the operation. Twenty cubic centimeters of fluid was removed and 15 c.c. of serum introduced.

Subsequently, lumbar punctures were performed, October 21 and 24; 30 c.c. of fluid was removed on each occasion, followed by the introduction, respectively, of 10 and 12 c.c. of serum. Each time the fluid was under greatly reduced pressure, making it necessary to leave the needle in situ for one hour to obtain the 30 c.c.

October 25, the child developed general urticaria with a temperature of 102 F. However, as the general condition was so much better, the fontanel flat, the neck flexible, the report on the spinal fluid of the previous day showing vast improvement, we thought it advisable to withhold the serum. On the following day the temperature reached normal and remained so till the day of discharge.

The patient was discharged, October 31, in apparently good physical and mental condition, which has continued.

Right otitis media developed as a complication. A culture of the discharge yielded meningococci and pneumococcus Type III.

Other laboratory data are given in the accompanying tables.

CEREBROSPINAL FLUIDS					
	October 14	October 17, from ventricle	October 19	October 21	October 24
Cell count.....	Not made	136	1,500	1,200	300
Globulin.....		Slight excess		Marked excess	Very slight trace
Fehling's solution. ....		Reduced	Slight reduction	No reduction	Good reduction
Differential:					
Polymorphonuclear.....					70%
Lymphocytes.....					30%
Culture.....	Meningococci	Meningococci		Meningococci	No growth
Smear.....	None made	Gram negative, intra and extra cellular	Gram negative, intra and extra cellular	Gram negative, intra and extra cellular	Gram negative, (Two organisms seen on smear)

LEUKOCYTE COUNTS		
	October 14	October 24
Leukocytes.....	21,800	11,200
Polymorphonuclear.....	75%	58%
Small lymphocytes.....	20%	31%
Large lymphocytes.....	5%	8%
Eosinophils.....	....	1%

SUMMARY

In a case of meningococcus meningitis, communication between the cavities of the brain and the spinal cord was completely obstructed. Two days after puncture of the lateral ventricle with evacuation of cerebrospinal fluid and introduction of antimeningococcus serum, continuity of the subarachnoid space was reestablished.

166 West Eighth-Fifth Street.

A SIMPLE APPARATUS FOR ACCURATE INTRAVENOUS ADMINISTRATION OF GLUCOSE SOLUTIONS

WILLIAM THALHIMER, M.D., MILWAUKEE

The remarkable and accurate apparatus devised by Wood-yatt for the slow intravenous injection of glucose solution, at any desired rate, is not available in many hospitals and is quite expensive. The apparatus described here is simple and inexpensive, and accomplishes the same results with such a degree of accuracy as to make it of distinct practical value. It consists of an ordinary intravenous infusion set, with the flow regulated by a glass stopcock (A), and a 10 c.c. buret, graduated to 0.1 c.c., introduced as a reservoir, in order to determine accurately the rate of flow by observing the time required for delivery from the buret of a given amount of fluid.

The system is filled with the solution, and the fluid rises to the same level in the large graduated flask (D) and in the buret. The needle is inserted into the vein, and the stopcock at C is closed, shutting off the flow from the reservoir (D). The stopcock (B) of the buret is opened, and the stopcock at A is gradually turned until the solution begins to flow very slowly from the buret. It is easy by watching the fall of the fluid in the buret to determine with the second hand of a watch how long it takes for the delivery of 1 c.c. of solution. Since the rate of flow can be accurately regulated with the glass stopcock (A), any desired rate can be obtained. When this has been done, the stopcock at B is closed and the stopcock at C is opened. The solution then runs from the large flask (D) at the same rate as it did from the buret. The rate of flow from both D and the buret is the same, since the level of fluid at the start was the same.

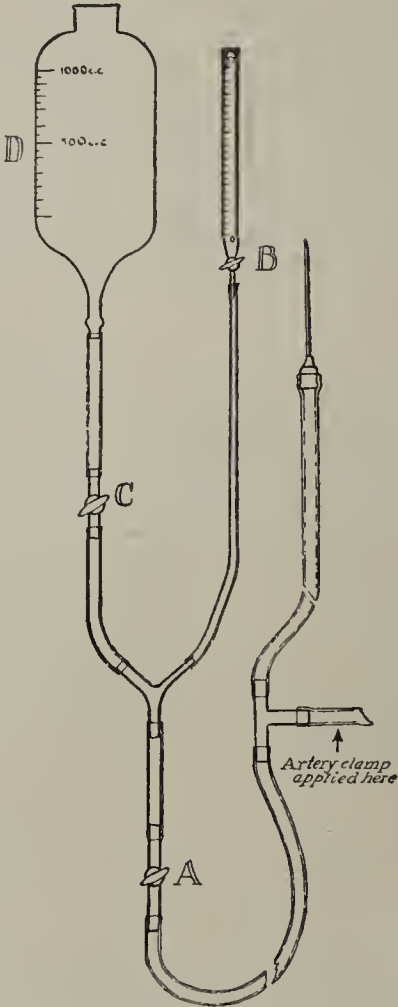
The fluid level can always be made the same in the large flask D and in the buret by opening both of the stopcocks B and C, without changing the position of the stopcock at A. The slow rate of flow through the stopcock at A, when the apparatus is in use, does not prevent the fluid from reaching the same level in both the flask (D) and the buret.

The rate of flow can be observed from time to time by repeating the original procedure. If the rate of flow is slow, the fluid will remain at the same level in D and the buret, if the stopcocks to both of these are kept open.

The graduations on the buret can then be calibrated in terms of the number of cubic centimeters in D. For example: In one of our apparatus each 0.1 c.c. on the buret is equivalent to 11 c.c. in D. The fall of the fluid level can be more rapidly and accurately determined in the buret than in the flask (D). Every 0.1 c.c. fall indicates that 11 c.c. has been delivered from the flask (D) into the vein.

We have given glucose solution intravenously with this apparatus as slowly as 40 c.c. an hour, for five hours. The rate could be made even slower, and we also have given it at various faster rates.

The apparatus is adaptable to many different arrangements for other purposes. We have found it convenient to have the various parts fastened to a board, and then sterilized after wrapping in a sheet. The rate of flow can be best controlled if the stopcock at A is about 2 feet below the top of the flask (D). The stopcock should be lubricated with sterile petrolatum just before use. A solution which is being given



Apparatus for accurate intravenous administration of glucose solutions.



slowly cools in the tube before it reaches the vein. It can be warmed by an ordinary electric pad placed around the portion of the tube nearest the vein.

The apparatus can be used also for administering serums intravenously, such as antimeningococcus serum. We believe that the apparatus can be used for experimental purposes, since the rate of flow can be accurately regulated.

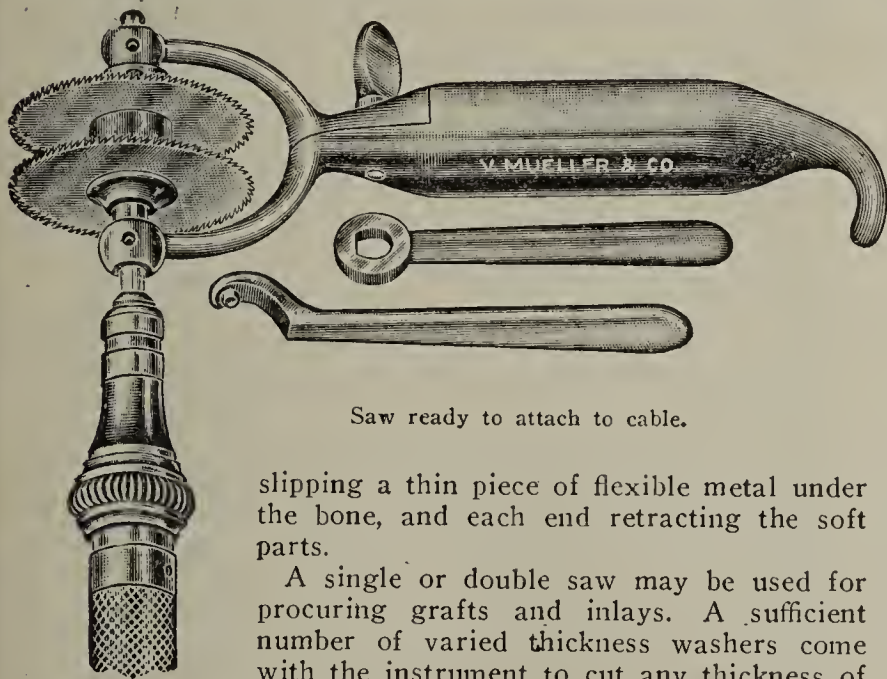
#### A NEW DEVICE FOR THE MORE UNIVERSAL USE OF THE ELECTRIC BONE SAW

ELLERY M. HETHERINGTON, M.D., KANSAS CITY, MO.

The accompanying illustration shows a saw arbor to be attached to a bone engine. It permits a thorough control by both hands and in perfect view at all times. The cable being long and flexible, the saw can be held to cut at any angle.

Cross-sections of bone can be easily and quickly made.

In cases of ununited fractures, the ends of bones may be freshened without detaching bones from their soft parts, by slipping a flat retractor under each side of the bone, or by



Saw ready to attach to cable.

slipping a thin piece of flexible metal under the bone, and each end retracting the soft parts.

A single or double saw may be used for procuring grafts and inlays. A sufficient number of varied thickness washers come with the instrument to cut any thickness of inlay desired.

A single saw is a very convenient method of procuring a wedge shaped graft for spinal work, also pointed grafts for intermedullary splints.

738 Lathrop Building.

#### METHOD OF MAKING LANTERN SLIDES FROM ROENTGEN-RAY NEGATIVES

C. E. AND C. C. COLLINS, CRISFIELD, MD.

For routine work in making lantern slides from roentgen-ray negatives we have evolved a technic that will give practically 100 per cent. results and which requires very small outlay. For illumination, a roentgen-ray viewing box, with four 75 watt lamps, in a semidarkened room, is employed; for the reducing, a small camera equipped with ground-glass back, plate-holder, and portrait lens. The copying lens does not give as satisfactory results. In connection with this we use roentgen-ray film. Two pieces can be cut from a 5 by 7 film, and the 14 by 17 size will cut to advantage.

The camera can be placed from 2 to 4 feet from the viewing box, according to the size of the negative, the proper focus obtained on the ground-glass back, with the portrait lens attached, and an exposure of from ninety to 100 seconds given. The film may be developed and fixed in the standard roentgen-ray solutions. After drying, the film is cut to lantern slide size (3¼ by 4 inches), the picture blocked off with black paper, and mounted between two lantern slide cover glasses and bound.

We have experimented with various makes of lantern slide plates, and so feel safe in recommending the film as being the most satisfactory for this particular kind of work.

Another good feature about this method is that if the slide is accidentally broken it is not irredeemably lost, as it will be necessary merely to remount the film between new cover glasses.

#### A SIMPLE METHOD OF STAINING GRAM-NEGATIVE ORGANISMS \*

RUTH TUNNICLIFF, M.D., CHICAGO

A modified Gram stain, without decolorization with alcohol, has been found useful in staining gram-negative organisms, which take ordinary stains with difficulty. A rat streptothrix, similar to one isolated in rat-bite fever, *Spirochaeta pallida* and fusiform bacilli and spirilla, found in Vincent's disease, have been studied by this method, in smear preparations from lesions and from cultures. The specimen is fixed in the flame, stained three or four seconds with freshly prepared carbol-gentian violet solution, 1 part saturated alcoholic gentian violet in 9 parts of 5 per cent. phenol (carbolic acid), washed in tap water, treated with Gram's solution of iodine (iodine, 1 gm., potassium iodide, 2 gm., water, 300 c.c.), three or four seconds, again washed in water and dried. The organisms stain a purplish black, resembling preparations stained with Fontana's silver stain. Fontana's stain, however, requires more time for staining, and the solutions are difficult to prepare and are unstable.

#### REPORT OF A CASE OF RUPTURED UTERUS RESULTING FROM THE USE OF PITUITARY EXTRACT

MAX A. DORLAND, M.D., ANACONDA, MONT.

In view of the fairly general use of pituitary extract by obstetricians, and the laxity of legal restrictions relative to so-called midwives, the subjoined report of an unusual case will be of interest:

An Austrian woman, aged 39, an octipara, whose last pregnancy had resulted in the birth of twins of normal size, which were delivered without difficulty, was strong and healthy, with normal pelvis. Gestation had reached full term. Labor began, and a midwife was called at 4 a. m., Aug. 22, 1921; the case progressed normally, and without unusual incident, until about 5 p. m., when the midwife became a little fatigued, and administered, hypodermically, 0.5 c.c. (8 minims) of pituitrin obstetrical, Parke, Davis & Co., followed in one hour by a second injection of a like amount.

In about ten minutes after the second injection, the patient experienced an extremely painful contraction, during which the uterus evidently ruptured. Labor ceased at this time, and she suffered constant and excruciating pain, soon showing signs of collapse. This alarmed the midwife, and I was called into the case. On arrival, I found the patient in a state of extreme collapse, the pain constant and excruciating, especially over the left side, and much increased on pressure. The abdomen was greatly distended, and the surface flattened when the patient was in the dorsal posture. There was dulness on percussion, in both flanks. The pulse registered 130, and respiration was rapid and labored. Extreme pallor was noted; the face and head covered with perspiration, and pupils were dilated. Digital examination revealed a fully dilated cervix, the head being disengaged, and freely and easily pushed up as far as the examining finger could reach. As the examination proceeded, there was a gush of dark colored blood into the hand. A diagnosis of ruptured uterus was made, and the patient was removed to the hospital, where, with the assistance of Dr. John Noonan, et al. being administered by Dr. F. L. St. Jean, the abdomen was widely opened in the median line. When the peritoneum was incised, there was a gush of bloody fluid, and the legs of child protruded through the incision. The child, which was dead, was a boy, weighing 11 pounds (5 kg.). It was freely delivered, the cord clamped and cut, and the intact placenta was lifted freely from the abdominal cavity. There was a large amount of free and clotted blood. The uterus was ruptured throughout the attachment of the left broad ligament nearly to the

\* From the John McCormick Institute for Infectious Diseases.



fundus. The uterus, which was contracted into a hard firm mass, was hastily removed, supravaginally, and the abdomen closed, and a large gauze drain inserted. The patient rallied under physiologic sodium chlorid solution hypodermoclysis, hypodermic administration of a digitalis preparation, and other measures to minimize shock.

The following day she felt very well, had practically no pain, took liquid nourishment, and gave no evidence of further hemorrhage. The following day she was less cheerful, and began to show signs of weakening to considerable extent. Saline injections, which had been freely used, failed to revive her weakened heart. The packing was removed, and an enema administered, with good results. During the afternoon she was very weak, with a scarcely discernible pulse. She continued to grow weaker, in spite of stimulants, and died of exhaustion about 5 p. m., nearly forty-eight hours after the operation, maintaining consciousness until ten minutes before respiration ceased.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**FOOD ALLERGENS-SQUIBB.**—Powders representing the protein of foods.

*Actions and Uses.*—See general article "Biologically Reactive Food Proteins," N. N. R., 1921, page 65.

*Dosage.*—See general article "Biologically Reactive Food Proteins," N. N. R., 1921, page 65.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patents or trademarks.

- Almond Allergen-Squibb.—The protein from the almond.
- Barley Allergen-Squibb.—The protein from barley.
- Brazil-Nut Allergen-Squibb.—The protein from the Brazil-nut.
- Buckwheat Allergen-Squibb.—The protein from buckwheat.
- Butternut Allergen-Squibb.—The protein from the butternut.
- Chestnut Allergen-Squibb.—The protein from the chestnut.
- Corn Allergen-Squibb.—The protein from maize.
- Filbert Allergen-Squibb.—The protein from the filbert.
- Hazelnut Allergen-Squibb.—The protein from the hazelnut.
- Hickory-Nut Allergen-Squibb.—The protein from the hickory-nut.
- Oat Allergen-Squibb.—The protein from oats.
- Peanut Allergen-Squibb.—The protein from the peanut.
- Pecan Allergen-Squibb.—The protein from the pecan.
- Rice Allergen-Squibb.—The protein from rice.
- Rye Allergen-Squibb.—The protein from rye.
- Walnut (Black) Allergen-Squibb.—The protein from the black walnut.
- Walnut (English) Allergen-Squibb.—The protein from the English walnut.
- Wheat Allergen-Squibb.—The protein from wheat.
- Apple Allergen-Squibb.—The protein from the apple.
- Artichoke Allergen-Squibb.—The protein from the artichoke.
- Asparagus Allergen-Squibb.—The protein from asparagus.
- Banana Allergen-Squibb.—The protein from the banana.
- Blackberry Allergen-Squibb.—The protein from the blackberry.
- Black Pepper Allergen-Squibb.—The protein from black pepper.
- Bean (Lima) Allergen-Squibb.—The protein from the lima bean.
- Bean (Navy) Allergen-Squibb.—The protein from the navy bean.
- Bean (String) Allergen-Squibb.—The protein from the string bean.
- Beet Allergen-Squibb.—The protein from the beet.

- Cabbage Allergen-Squibb.—The protein from the cabbage.
- Cantaloupe Allergen-Squibb.—The protein from the cantaloupe.
- Carrot Allergen-Squibb.—The protein from the carrot.
- Celery Allergen-Squibb.—The protein from celery.
- Cherry Allergen-Squibb.—The protein from the cherry.
- Coffee Allergen-Squibb.—The protein from coffee.
- Cucumber Allergen-Squibb.—The protein from the cucumber.
- Eggplant Allergen-Squibb.—The protein from the eggplant.
- Grape Allergen-Squibb.—The protein from the grape.
- Grapefruit Allergen-Squibb.—The protein from grapefruit.
- Lettuce Allergen-Squibb.—The protein from lettuce.
- Mustard Allergen-Squibb.—The protein from mustard.
- Onion Allergen-Squibb.—The protein from the onion.
- Orange Allergen-Squibb.—The protein from the orange.
- Parsnip Allergen-Squibb.—The protein from the parsnip.
- Pea Allergen-Squibb.—The protein from the pea.
- Peach Allergen-Squibb.—The protein from the peach.
- Pear Allergen-Squibb.—The protein from the pear.
- Plum Allergen-Squibb.—The protein from the plum.
- Potato (Sweet) Allergen-Squibb.—The protein from the sweet potato.
- Potato (White) Allergen-Squibb.—The protein from the potato.
- Prune Allergen-Squibb.—The protein from the prune.
- Radish Allergen-Squibb.—The protein from the radish.
- Raspberry Allergen-Squibb.—The protein from the raspberry.
- Rhubarb Allergen-Squibb.—The protein from rhubarb.
- Spinach Allergen-Squibb.—The protein from spinach.
- Squash Allergen-Squibb.—The protein from the squash.
- Strawberry Allergen-Squibb.—The protein from the strawberry.
- Tomato Allergen-Squibb.—The protein from the tomato.
- Turnip Allergen-Squibb.—The protein from the turnip.
- Watermelon Allergen-Squibb.—The protein from the watermelon.
- Beef Allergen-Squibb.—The protein from beef.
- Bluefish Allergen-Squibb.—The protein from the flesh of bluefish.
- Chicken Allergen-Squibb.—The protein from the flesh of the chicken.
- Clam Allergen-Squibb.—The protein from the flesh of the clam.
- Codfish Allergen-Squibb.—The protein from the flesh of the codfish.
- Crab Allergen-Squibb.—The protein from the flesh of the crab.
- Goose Allergen-Squibb.—The protein from the flesh of the goose.
- Haddock Allergen-Squibb.—The protein from the flesh of the haddock.
- Halibut Allergen-Squibb.—The protein from the flesh of the halibut.
- Horse Allergen-Squibb.—The protein from the flesh of the horse.
- Lamb Allergen-Squibb.—The protein from the flesh of the lamb.
- Lobster Allergen-Squibb.—The protein from the flesh of the lobster.
- Mackerel Allergen-Squibb.—The protein from the flesh of the mackerel.
- Mutton Allergen-Squibb.—The protein from the flesh of the sheep.
- Oyster Allergen-Squibb.—The protein from the flesh of the oyster.
- Pork Allergen-Squibb.—The protein from the flesh of the hog.
- Salmon Allergen-Squibb.—The protein from the flesh of the salmon.
- Shrimp Allergen-Squibb.—The protein from the flesh of the shrimp.
- Sweetbreads Allergen-Squibb.—The protein from the pancreas.
- Turkey Allergen-Squibb.—The protein from the flesh of the turkey.
- Veal Allergen-Squibb.—The protein from the flesh of the calf.
- Milk (Cow) (All Proteins) Allergen-Squibb.—The protein from the milk of the cow.



**Milk (Goat) (All Proteins) Allergen-Squibb.**—The protein from the milk of the goat.

**Milk (Human) (All Proteins) Allergen-Squibb.**—The protein from human milk.

**Milk (Cow) (Casein) Allergen-Squibb.**—Casein from the milk of the cow.

**Milk (Cow) (Albumin) Allergen-Squibb.**—The albumin from the milk of the cow.

**Egg (White) (All Proteins) Allergen-Squibb.**—The protein from the white of hen's eggs.

**Egg (Yolk) (All Proteins) Allergen-Squibb.**—The protein from the yolk of hen's eggs.

**Egg White Albumin Allergen-Squibb.**—The albumin of the white of hen's eggs.

**Egg (Whole) (All Proteins) Allergen-Squibb.**—The protein from the entire hen's egg after removal of the shell.

**Wheat (Gliadin) Allergen-Squibb.**—One of the proteins from wheat gluten.

**Orris-Root Allergen-Squibb.**—The protein from orris-root.

The following method is used for the preparation of Almond Allergen-Squibb, Barley Allergen-Squibb, Black Pepper Allergen-Squibb, Brazil-Nut Allergen-Squibb, Buckwheat Allergen-Squibb, Butternut Allergen-Squibb, Chestnut Allergen-Squibb, Coffee Allergen-Squibb, Corn Allergen-Squibb, Filbert Allergen-Squibb, Hazelnut Allergen-Squibb, Hickory-Nut Allergen-Squibb, Mustard Allergen-Squibb, Oat Allergen-Squibb, Peanut Allergen-Squibb, Pecan Allergen-Squibb, Rice Allergen-Squibb, Rye Allergen-Squibb, Walnut (Black) Allergen-Squibb, Walnut (English) Allergen-Squibb and Wheat Allergen-Squibb.

The shell, if any, is removed and the bean or kernel is finely powdered and completely extracted with purified petroleum benzin (petroleum ether) for the removal of fat. The residue is macerated over night in 10 per cent. sodium chloride solution which has been rendered faintly alkaline by the addition of sodium hydroxide. The salts are removed from the filtered extract by dialysis and the dialyzate is precipitated with acetone. The protein powder thus obtained is further dried with anhydrous acetone.

The following method is used for the preparation of Apple Allergen-Squibb, Artichoke Allergen-Squibb, Asparagus Allergen-Squibb, Banana Allergen-Squibb, Blackberry Allergen-Squibb, Bean (Lima) Allergen-Squibb, Bean (Navy) Allergen-Squibb, Bean (String) Allergen-Squibb, Beet Allergen-Squibb, Cabbage Allergen-Squibb, Cantaloupe Allergen-Squibb, Carrot Allergen-Squibb, Celery Allergen-Squibb, Cherry Allergen-Squibb, Cucumber Allergen-Squibb, Eggplant Allergen-Squibb, Grape Allergen-Squibb, Grapefruit Allergen-Squibb, Lettuce Allergen-Squibb, Onion Allergen-Squibb, Orange Allergen-Squibb, Parsnip Allergen-Squibb, Pea Allergen-Squibb, Peach Allergen-Squibb, Pear Allergen-Squibb, Plum Allergen-Squibb, Potato (Sweet) Allergen-Squibb, Potato (White) Allergen-Squibb, Prune Allergen-Squibb, Radish Allergen-Squibb, Raspberry Allergen-Squibb, Rhubarb Allergen-Squibb, Spinach Allergen-Squibb, Squash Allergen-Squibb, Strawberry Allergen-Squibb, Tomato Allergen-Squibb, Turnip Allergen-Squibb and Watermelon Allergen-Squibb:

The fruit or green vegetable is washed or peeled and the finely divided pulp extracted with 10 per cent. sodium chloride solution, which has been rendered faintly alkaline by the addition of sodium hydroxide. The salts are removed from the filtered extract by dialysis, and the dialyzate precipitated with acetone. The protein powder thus obtained is further dried with anhydrous acetone.

The following method is used for the preparation of Beef Allergen-Squibb, Bluefish Allergen-Squibb, Chicken Allergen-Squibb, Clam Allergen-Squibb, Codfish Allergen-Squibb, Crab Allergen-Squibb, Goose Allergen-Squibb, Haddock Allergen-Squibb, Halibut Allergen-Squibb, Horse Allergen-Squibb, Lamb Allergen-Squibb, Lobster Allergen-Squibb, Mackerel Allergen-Squibb, Mutton Allergen-Squibb, Oyster Allergen-Squibb, Pork Allergen-Squibb, Salmon Allergen-Squibb, Shrimp Allergen-Squibb, Sweetbreads Allergen-Squibb, Turkey Allergen-Squibb and Veal Allergen-Squibb:

The material is finely ground and extracted with faintly alkaline 10 per cent. sodium chloride solution. The solution is dialyzed until free from salts and the concentrated dialyzate precipitated with acetone. The residue from the sodium chloride extraction is further extracted with 0.2 per cent. sodium hydroxide solution, filtered, and hydrochloric acid added until the iso-electric point of the dissolved protein is reached. The protein thus precipitated is dried with anhydrous acetone and then combined with the protein fraction obtained by the sodium chloride extraction.

The following method is used for the preparation of Cow's Milk (All Proteins) Allergen-Squibb, Goat's Milk (All Proteins) Allergen-Squibb, Human Milk (All Proteins) Allergen-Squibb:

The fresh milk is centrifuged to remove the fat and the separated milk is dialyzed until free from salts and lactose. The dialyzate is precipitated with acetone and filtered, and the precipitate dried with anhydrous acetone.

The product is a fine, white, odorless, tasteless powder; somewhat soluble in water and physiologic salt solution; more readily soluble in dilute sodium carbonate solution or in sodium bicarbonate solution.

The following method is used for the preparation of Cow's Milk Casein Allergen-Squibb:

Casein is precipitated from separated milk with dilute acid. The precipitate is redissolved in dilute sodium hydroxide, the solution filtered and the filtrate reprecipitated with acid. The entire operation is repeated until the precipitated casein is free from albumin. The purified casein is finally brought into solution with a minimum addition of alkali, and precipitated with acetone. The fine, white powder thus obtained is finally dried with anhydrous acetone.

The product is a white, odorless, tasteless powder; insoluble in water, salt solutions or dilute acids, but readily soluble in 0.5 per cent. sodium bicarbonate solution or in 0.2 per cent. sodium hydroxide solution. It gives strong biuret, Millon and xanthoproteic reactions.

The following method is used for the preparation of Cow's Milk Allergen-Squibb (Albumin):

Fresh cow's milk is centrifuged to remove the fat; the casein is precipitated by adding dilute acid; the mixture is filtered, and the

filtrate is saturated with ammonium sulphate. The albumin is further purified by dialysis; the dialysate filtered, and finally precipitated with acetone. The fine white powder obtained is finally dried with anhydrous acetone.

The product is odorless and tasteless; soluble in water, in physiological solution of sodium chloride, dilute acid and dilute alkali. It is not coagulated on heating.

The following method is used for the preparation of Egg White (All Proteins) Allergen-Squibb:

The whites of hen's eggs are dissolved in water, precipitated with acetone and the precipitate dehydrated with anhydrous acetone.

The following method is used for the preparation of Egg White Albumin Allergen-Squibb:

The ovomucin and globulin are removed from the beaten and strained whites of freshly laid hen's eggs by fractional precipitation with half saturated ammonium sulphate. The true albumin is isolated from the conalbumin and ovomucoid of the filtrate by repeated crystallizations with acid. The final albumin crystals are dissolved in water neutralized with sodium hydroxide solution and the solution dialyzed until free from salts. The dialyzate is reduced to a white powder by rapid dehydration in vacuo.

The following method is used for the preparation of Egg Yolk (All Proteins) Allergen-Squibb:

The washed yolks of hen's eggs are extracted with ether. The insoluble residue is dissolved in water and dialyzed until free from salts. The salt-free protein is filtered, then precipitated and dried with acetone.

The product is a faintly yellowish powder; odorless and tasteless; somewhat soluble in water; more readily soluble in dilute sodium bicarbonate solution or in sodium carbonate solution.

The following method is used for the preparation of Egg (All Proteins) Allergen-Squibb:

Egg White (All Proteins) Allergen-Squibb and Egg Yolk (All Proteins) Allergen-Squibb are combined in equal proportions.

The following method is used for the preparation of Wheat Gliadin Allergen-Squibb:

Patent wheat flour is extracted with purified petroleum benzin. The insoluble residue is extracted with 10 per cent. sodium chloride which has been made slightly alkaline with sodium hydroxide until free from salt soluble proteins. The residue is extracted with 80 per cent. ethyl alcohol and the filtered alcoholic extract evaporated in vacuo at a low temperature. The residue is redissolved in 80 per cent. alcohol, the solution filtered and the evaporation repeated. The final residue is dried with anhydrous acetone.

The product is a white, odorless, tasteless powder; insoluble in water, in dilute alkali or salt solution, but completely soluble in from 70 to 80 per cent. alcohol. It gives strong biuret, Millon and xanthoproteic reactions.

The following method is used for the preparation of Orris-Root Allergen-Squibb:

Peeled orris-root is ground to a fine powder in a ball mill, and the powder extracted with 1 per cent. sodium chloride solution. The filtered extract is precipitated with acetone and the precipitate dried with acetone.

The product is a fine, white, odorless, tasteless powder; somewhat soluble in water, and readily soluble in physiologic salt solution. It gives strong biuret, Millon and xanthoproteic reactions.

**POLLEN PROTEIN ALLERGENS-SQUIBB.**—Powders consisting of the sodium chloride-soluble protein of the isolated pollen from various species of plants.

**Action and Uses.**—See general article, "Pollen Extract Preparations," N. N. R., 1921, p. 239.

**Dosage.**—See general article, "Pollen Extract Preparations," N. N. R., 1921, p. 239. The Pollen Protein Allergens-Squibb are intended only for diagnosis.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patents or trademarks.

**Corn Pollen Allergen-Squibb.**—A protein from the pollen of maize (*Zea mays*).

**Goldenrod Pollen Allergen-Squibb.**—The protein from the pollen of goldenrod (*Solidago* species).

**Orchard Grass Pollen Allergen-Squibb.**—The protein from the pollen of orchard grass (*Dactylis glomerata*).

**Ragweed Pollen Allergen-Squibb.**—The protein from the pollen of ragweed (*Ambrosia* species).

**Rye Pollen Allergen-Squibb.**—The protein from the pollen of rye (*Secale cereale*).

**Timothy Pollen Allergen-Squibb.**—The protein from the pollen of timothy (*Phleum pratense*).

Corn Pollen Allergen-Squibb, Goldenrod Pollen Allergen-Squibb, Orchard Grass Pollen Allergen-Squibb, Ragweed Pollen Allergen-Squibb, Rye Pollen Allergen-Squibb and Timothy Pollen Allergen-Squibb are prepared by the following method:

The pollen allergens are prepared by macerating the mechanically isolated pollen granules in 10 per cent. sodium chloride solution, which has been rendered faintly alkaline with sodium hydroxide. The filtered extract is dialyzed until free from salts, and the dialyzate is precipitated with acetone. The pollen protein thus obtained is dried with anhydrous acetone.

The products are white, odorless, tasteless powders; insoluble in water or dilute acids; readily soluble in physiologic salt solution, and dilute alkalis. They give strong biuret, Millon and xanthoproteic reactions.

**NEOCINCHOPHEN.**—See New and Nonofficial Remedies, 1921, p. 86.

**Neocinchophen-Abbott.**—A brand of neocinchophen-N. N. R. Manufactured by The Abbott Laboratories, Chicago, under U. S. patent 1,075,171 (Oct. 7, 1913; expires, 1930), by license of The Chemical Foundation, Inc.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 21, 1922

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## THE REFERENDUM ON ALCOHOL

In hearings before Congress, in the discussion of regulations issued by the Internal Revenue Department, in fact, in practically every discussion of prohibition, contradictory statements have been made as to the views of physicians on the value of alcoholic beverages as therapeutic agents. Several scientific organizations have adopted resolutions on the subject. So far as we know, however, no attempt has heretofore been made to ascertain, in a direct way, the opinions of any considerable number of physicians.

Moreover, the medical profession has been subjected to ridicule and criticism on account of the actions of a small number of its members who are abusing their privileges and who have assumed a position in the public eye not creditable to the profession as a whole. It therefore seemed worth while to obtain the views of a large number of physicians regarding the effect on medical practice of the present regulations; to discover whether or not conditions might be improved, and if so, how.

In order to secure the views of a representative portion of the medical profession a questionnaire was sent to more than one third—53,900—of the physicians of the United States. Of these, 43,900 were selected by arbitrarily taking every other name on the mailing list of THE JOURNAL. In towns in which there was only one physician, the questionnaire was sent to that physician. In addition, the questionnaire was sent to 10,000 physicians who were neither members of the organization nor subscribers to THE JOURNAL. These names were selected in a similar manner, but from the medical directory.

The excellent response, reaching 58 per cent. of replies and representing 21.5 per cent. of the physicians of the country, a percentage of return seldom attained by the questionnaire method, has been gratifying as an indication of the interest taken by our profession in this attempt to secure an adequate expression of its views.

As might have been expected, THE JOURNAL has been accused by many of preparing these questions wholly in the interest of prohibition, and an equal

number have asserted just as emphatically that the questions were intended as the opening wedge for breaking down prohibition.

Some have taken exception to the word "necessary," claiming that no drugs are absolutely necessary, and that "desirable" or "advisable" would have been a better word for the purpose. This point was given careful consideration in formulating the question. Moreover, the word "necessary" is used in the National Prohibition Act itself (Section 7, Title II):

... And no physician shall prescribe liquor unless after careful physical examination of the person for whose use such prescription is sought, or if such examination is found impracticable, then upon the best information obtainable, he in good faith believes that the use of such liquor as a medicine by such person is *necessary* [italics ours] and will afford relief to him for some known ailment.

The word "advisable" or "desirable" would have been as much too mild as "necessary" is, perhaps, too strong; "necessary" does not mean indispensable, and it was properly regarded by practically all who answered the questionnaire.

The criticism has been made that the question as to whether whisky is a necessary therapeutic agent is a scientific one and cannot be decided by resolutions or by votes. This is true; and the referendum was to secure the *opinions* of physicians on the subject, not to decide a scientific question. It is granted that the physiologic effects of alcohol are matters which may be determined in the laboratory; but therapeutics is the application of such findings to the treatment of disease as determined by the opinions of physicians. This and the experience of physicians—for the opinions necessarily are based on experience and observation—may be determined, as has been done, by the questionnaire.

Approximately one third of those replying commented on the general prohibition situation, on the restrictions and regulations, or on some allied topics. The more interesting of these comments have been published in connection with reports on the individual states. Many of the views brought out in the comments are of value to those who are interested in the subject from the sociological or from any other point of view. For instance: Since national prohibition went into effect, judging by these comments there has apparently been a reaction against prohibition in many states in which prohibition by state law had become accepted and effective. This is especially noticeable in the comments from Colorado, Kansas, Nebraska, South Dakota, and even from Maine. From the comments, one must come to the conclusion that home-made, illegally distilled or chemically compounded liquors—so-called "moonshine"—are being extensively used in states in which this was not the case three or four years ago. What has produced this apparent change?



The questionnaire has brought out definitely the fact that the present regulations governing the medicinal use of alcoholic beverages are not satisfactory—in fact, many physicians declared them “intolerable.” Many who were convinced that these drugs were not necessary therapeutically, were emphatic in stating that other physicians who believed them necessary were entitled to have their views respected, and were warranted in efforts to have the drugs made available without incurring the odium attaching under the present regulations.

Evidently most physicians are satisfied with the control of narcotics as regulated under the Harrison Narcotic Law, and many expressed a desire that the control of alcoholic liquors follow such lines. A decidedly large number of physicians suggest that the government take over the whisky, including its storage and sale, and supply it in sealed packages—say of 8, 16 and 32 ounces—for medicinal use only, and at a fixed price, under regulations similar to those of the Harrison Narcotic Law, thus making available to physicians a drug of dependable quality.

#### HELIOOTHERAPY AND RICKETS

There has been exceptional interest during recent months in the problems of rickets. From this it must not be inferred that the widely prevalent disease has not in the past given occasion for studies of its etiology and pathogenesis. On the contrary, rickets has long been the subject not only of experimental investigation, but also of the most diverse speculation. The unquestioned success that has attended the consideration of beriberi and scurvy from the standpoint of their relation to dietary deficiencies has emboldened students to approach the problems of rickets likewise with due appreciation of the factors that recent advances in the science of nutrition have brought into prominence. The upshot of all this has been the demonstration that rickets, or at least a closely related pathologic condition, can be induced in experimental animals through feeding unsuitable diets, and that cures can be effected by remedying the dietary defects without further regard to other environmental factors.<sup>1</sup>

How beneficial these researches are likely to be for the therapy of rickets through dietary measures was pointed out in these columns in a recent review of the rôle of cod liver oil as a remedial agent.<sup>2</sup> This food has an undeniable specific effect which has now been clearly demonstrated on both animals and human patients. The new enthusiasm for the antirachitic virtues of cod liver oil and other dietary agents should not be allowed to overshadow entirely the even more

recent demonstrations of what heliotherapy can accomplish in the cure of rickets. Undeniable evidences of the potency of sunlight were put forward years ago.<sup>3</sup> Attention was focused more directly on the subject by Huldshinsky and others,<sup>4</sup> who reported the curative effects of treatment with the ultraviolet ray in many children exhibiting all clinical manifestations of rickets. The assertions thus made have recently been verified by the more elaborate evidence from experiments on animals rendered demonstrably rachitic through dietary errors.

The first demonstration by means of the roentgenograph, which prevents the mistakes of subjective impressions, that sunlight alone exerts a curative action in rickets was presented in *THE JOURNAL* by Hess and Unger<sup>5</sup> only a few months ago. They pointed out the possible rôle of actinic rays in an interpretation of the seasonal variation of the disease, and expressed the opinion that it is the dominant factor in this incidence. Hess and Unger do not imply that diet is not of importance in the etiology of rickets, but rather that a hygiene factor—sunlight—also needs to be taken into account. Hess, Unger and Pappenheimer<sup>6</sup> have now furnished the corroboratory demonstration that sunlight has a marked effect on the bony development of rats. When the animals have an abundance of exposure to sunlight they keep in health under regimens which are sufficiently deficient in phosphorus, for example, to induce rickets when they are kept in subdued light. Similar experiences have been reported by Shipley, Park, Powers, McCollum and Simmonds,<sup>7</sup> who find that the changes produced by sunlight in the skeleton do not differ in any important respect from the changes produced when the animals are kept in room light but on a diet supplemented by cod liver oil. Cod liver oil contains something that is essential for optimal cellular function. Light also contains something that is essential for optimal cellular function. Cod liver oil or light, when made available to an organism previously deprived of either, permits the organism, as Park and his associates remark, to put into successful operation adaptations or defense mechanisms which otherwise would have been ineffectual. According to them, further, either cod liver oil or light meets the defects in the composition of the diet, not directly by

3. Palm, T. A.: *Practitioner* 45:270, 321, 1890.

4. Huldshinsky, K.: *Deutsch. med. Wchnschr.* 45:712, 1919; *Ztschr. f. orthop. Chir.* 89:426, 1920. Putzig, H.: *Therap. Halbmonatsh.* 34:234, 1920. Riedel, G.: *München. med. Wchnschr.* 67:838, 1920. Hess, A. F., and Unger, L. J.: *Am. J. Dis. Child.* 22:186, 1921.

5. Hess, A. F., and Unger, L. J.: *The Cure of Infantile Rickets by Sunlight*, *J. A. M. A.* 77:39 (July 3) 1921.

6. Hess, A. F.; Unger, L. J., and Pappenheimer, A. W.: *Experimental Rickets, III, The Prevention of Rickets in Rats by Exposure to Sunlight*, *Proc. Soc. Exper. Biol. & Med.* 19:8 (Oct.) 1921.

7. Shipley, P. G.; Park, E. A.; Powers, G. F.; McCollum, E. V., and Simmonds, Nina: *The Prevention of the Development of Rickets in Rats by Sunlight*, *Proc. Soc. Exper. Biol. & Med.* 19:43 (Oct.) 1921. Powers, G. F.; Parke, E. A.; Shipley, P. G.; McCollum, E. V., and Simmonds, Nina: *The Prevention of the Development of Rickets in Rats by Sunlight: Studies on Experimental Rickets, XIV*, *THE JOURNAL*, this issue, p. 159.

1. *Experimental Rickets*, editorial, *J. A. M. A.* 76:933 (April 2) 1921; *Further Facts About Rickets*, *ibid.* 76:1844 (June 25) 1921. Mellanby, E.: *Experimental Rickets*, Special Report Series No. 61, Medical Research Council, London, 1921.

2. *More About Cod Liver Oil in Therapy*, editorial, *J. A. M. A.* 77:2122 (Dec. 31) 1921.



supplying to the body either calcium or phosphorus, but indirectly by so raising the potential of cellular activity as to secure the most efficient utilization possible of those substances available in the body which are directly or indirectly concerned with ossification and calcification.

That metabolic changes in the animal body can be brought about by the solar rays is further indicated by studies of the composition of the blood. Howland and Kramer<sup>8</sup> showed that the inorganic phosphorus of the serum of infants suffering from active rickets is reduced, and that during the process of healing, especially on the administration of cod liver oil, the phosphorus content gradually rises to normal. According to Hess and Gutman,<sup>9</sup> sun treatment of infants suffering from rickets not only brings about a cure of the rachitic lesions, but in so doing occasions chemical changes in the blood similar to those noted when the cure is effected by cod liver oil. As the investigators remark, this affords testimony that the curative process occasioned by these divergent therapeutic agents is fundamentally the same. Heliotherapy has thus in one case at least been put upon the scientific basis of demonstrable chemical changes in the organism affected.

#### THE BRITISH TRENCH FEVER COMMITTEE REPORT

Among the novel chapters of modern medicine dealing with insects as a menace to mankind, the story of the relation of body lice to the genesis of trench fever affords many facts of unusual interest. The disease was recognized in the German army early during the World War by His, who termed it Wolhynian fever. During the winter of 1916, the occurrence of a comparable disorder became apparent in the British army, not only on the western front but also in Saloniki and far-away Mesopotamia. It was also prevalent in the French armies. After our entrance into the war, the Medical Research Committee of the American Red Cross realized that the mode of transmission of trench fever was one of the most important problems for investigation in connection with the loss of man power in the fighting forces. The consequent organization of a trench fever committee involving cooperation between British and American scientists under the leadership of Dr. Richard P. Strong led to a brilliant series of investigations demonstrating conclusively that trench fever is a specific infectious disease transmitted by the louse. This experimental research was rendered memorable not only by the significant character of the findings but also by the self-sacrificing spirit of the numerous volunteers who freely submitted to inocula-

tion tests because as yet no laboratory animal is known to be susceptible to the disease.

The report of the American commission was formulated in 1918.<sup>1</sup> It came to the practical conclusion that the organism causing trench fever is a resistant filtrable virus, and furthermore, that the usual manner of infection is by the bite of the louse. Recently the final report of the British War Office Trench Fever Investigation Committee has been published.<sup>2</sup> In many respects it corroborates and supplements the earlier conclusions. The British report differs in regarding the etiologic agent as neither filtrable nor ultramicroscopic, which the word filtrable is usually supposed to imply. The infective factor is rather regarded as a species of *Rickettsia* related to the micro-organism found in typhus fever.<sup>3</sup> It must be admitted, however, that the element of hypothesis has by no means yet been eliminated from the problem. The organisms have never been cultivated outside the body.

The infective organism is present in the whole blood, and consequently may be found in all of the tissues of the body. The British evidence seems to be in favor of the organism's being an extracorporeal rather than an intracorporeal parasite. The smallest quantity of whole blood that has given rise to the disease was 0.5 c.c. (8 minims). The blood is infective from the first day of the disease, and in one case was found to be still infective after 443 days. The microscopic examination of the blood has not as yet revealed the organism, or at least has not differentiated it from other granules present in blood. According to Bruce's report, there is some evidence that the organism may leave the body in the sputum and urine; but the chief and only way that has any practical significance is by means of a blood-sucking insect, the louse. There is no evidence that infection takes place through food, drink or air, but only by inoculation of the organism by means of this insect.

In contradistinction to the American report, the British Commission is of the opinion that infection by the bites of lice is quite exceptional, by far the commonest method involving contact of abraded surfaces of the skin, in scratches or other small wounds with the excreta of the louse. After the latter has fed on a patient, from five to nine days elapse before the excreta become infective. The infective material retains its virulence in louse excreta for at least four months. There is no transmission of the organism of trench fever from infected lice through the egg to their offspring. Bruce asserts that with the data at our disposal it is not possible to give a categorical answer to the question whether or not one attack of trench fever confers immunity. Taking everything into considera-

8. Howland, John, and Kramer, Benjamin: Calcium and Phosphorus in the Serum in Relation to Rickets, *Am. J. Dis. Child.* **22**: 105 (Aug.) 1921.

9. Hess, A. F., and Gutman, P.: The Cure of Infantile Rickets by Sunlight as Demonstrated by a Chemical Alteration of the Blood, *Proc. Soc. Exper. Biol. & Med.* **19**: 31 (Oct.) 1921.

1. Trench Fever Report of Commission, Medical Research Committee, American Red Cross, Oxford University Press, 1918.

2. Bruce, D.: Trench Fever, Final Report of the British War Office Trench Fever Investigation Committee, *J. Hyg.* **20**: 258 (Nov.) 1921.

3. Arkwright, J. J.; Bacot, A., and Duncan, M.: The Association of *Rickettsia* with Trench Fever, *J. Hyg.* **18**: 76, 1920.



tion, it is probable that one attack does not confer immunity as this is understood, for example, in measles, scarlet fever or smallpox; rather, it confers a partial and limited immunity, as in influenza or pneumonia.

Trench fever has disappeared with the end of the war. Nevertheless, the harm that it wrought should not so soon be forgotten. The discovery of this unexpected disease has shed new light on the problems of insect-borne maladies. Science should not forget the silent heroism of the men who voluntarily helped to make the studies a success. Many of them contracted trench fever. "Without the volunteers," the British report certifies, "nothing could have been achieved. These men, unable through age or other infirmities to go to the front, bravely did their bit for the sake of their comrades in the trenches, by allowing themselves to be inoculated with an often tedious and painful disease. The army owes them the deepest gratitude."

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### Current Comment

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#### THE EXPERIMENTAL PRODUCTION OF CANCER BY CHEMICAL IRRITANTS

We have already called attention to the great importance of the recent successful attempts to produce cancer experimentally in animals;<sup>1</sup> these promise to open up new methods for the study of cancer that will greatly advance our knowledge, at least of the etiology, of malignant growth. It is now possible to produce at will in animals true malignant tumors of their own tissues, which is a great advance over the study of transplanted tumors from other animals, since the latter is not truly a tumor of the animal bearing it, as it is not formed from the tissues of this animal. Credit is due to Yamagiwa and Ichikawa of the University of Tokyo for the first successful production of cancer by applying tar to the skin of rabbits. In addition, they produced some nonmalignant epithelial growths in the mammary glands of rabbits by injecting tar dissolved in lanolin, and in one case a sarcoma was produced which caused secondary growths to appear in the lungs.<sup>2</sup> Rabbits are among the domesticated animals that are least likely to develop cancer spontaneously, and hence it is not surprising that the incidence of tumors following these experimental procedures has been low, only sixteen cancers being obtained with 178 animals. Using the more susceptible white mouse, Fibiger obtained carcinoma in no less than twenty-four of thirty mice painted with tar for 100 days or more, thus rendering this method available as a ready source of true cancers for experimental study. A further corroboration and extension of this line of work has now been presented by Bloch and Dreifuss<sup>3</sup> of Zurich, whose work marks a distinct

advance in that they have begun to study the chemical nature of the substance present in coal tar which leads to cancer formation. They find that the ingredients of lower boiling point, including many phenols and bases, do not stimulate the epithelium to malignant proliferation. This effect depends on a substance which boils at more than 300 C. and which retains its activity after distillation, and with this fraction they were able to produce in 100 per cent. of their mice large, rapidly growing, malignant epithelial tumors of the skin. Many of these animals have shown metastases in the lymph glands and the lungs, which is especially significant since, in the large number of spontaneous skin cancers of mice studied by Slye, Holmes and Wells,<sup>4</sup> metastases were rarely observed. Evidently the cancers produced by the extremely stimulating components of tar are distinctly more rapidly growing and malignant than those arising in ordinary traumatism. The experiments of the Swiss investigators bring us near the point at which we can make accurate studies of the quality and quantity of a chemically pure agent which can cause epithelium to proliferate in the form of true carcinoma.

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#### THE VALUE OF NEGATIVE EVIDENCE

A mass of entirely accurate data which have failed to prove or support the hypothesis under investigation accumulates in every place where research work is done. A problem, like an unexplored mountain peak, offers many routes for attack, and at the outset it is not always possible for even the keenest guide to determine which is the one that will lead to the goal. Often several starts are made, following previous trails for a way, and then turning off along promising leads, only to find that each ends blindly at a point where no further progress is possible. Sometimes the objective is attained, and then if the route is sufficiently described, any competent follower can reach the same heights. Often, however, the end sought is never reached despite many explorations, perhaps because means or methods are not then adequate, although they may become so later. What should be done with the information that has been so painfully acquired during the fruitless efforts? Commonly, if success has not been achieved, no one learns of the failure, and yet the experience obtained in unsuccessful efforts would be of the greatest value to the next explorer who would try to reach the unattained summit. Without knowledge of previous failures it is probable that he, too, will waste time and resources following the same blind leads that tempted his predecessors. The reports of failures should briefly indicate the routes followed, the methods used, and the reason why progress was blocked. The next explorer will then know whether he may succeed by following the previous trails and overcoming the obstacles that checked his predecessors, or whether he must seek an entirely new route. Knowledge advances largely by the method of trial and error, and if the errors found are not known they are certain to be repeated.

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1. The Experimental Production of Cancer, editorial, J. A. M. A. 76: 1404 (May 21) 1921; Experimental Production of Tar Cancer, *ibid.* 77: 127 (July 9) 1921.

2. Yamagiwa has recently summarized his observations: Ueber die künstliche Erzeugung von Teercarcinom und -sarkom, *Virchows Arch. f. path. Anat.* 233: 235, 1921.

3. Bloch and Dreifuss: *Schweiz. med. Wchnschr.* 51: 1033, 1921.

4. Slye, Maud; Holmes, H. F., and Wells, H. G.: *J. Cancer Res.* 6: 57 (Jan.) 1921.



## Association News

### A "MEDICAL ADVISORY COMMITTEE"

#### A Circular Letter and a Proposed Resolution

The following is a copy of a circular and of preambles and resolutions which have been sent by a so-called "Medical Advisory Committee" to constituent state and component county societies for adoption and to editors of medical journals for publication:

#### MEDICAL ADVISORY COMMITTEE

F. H. McMECHAN, M.D., SECRETARY

LAKE SHORE ROAD, AVON LAKE, OHIO

*My dear Secretary:—*

As the fate of the Practice of Medicine is at stake, this plea is being sent to every County Medical Society in the United States. Kindly submit it at once to your County Society for consideration and action.

*To Members of the Medical Profession:—*

The Public and Profession are being sold out to—

- (1) Foundation control of "full time" medical education.
- (2) Lay board domination and the "closed shop" hospital.
- (3) Socialized state medicine, subsidized community health centers and hospitals under political or university control.
- (4) Legislative dictation of therapy and fees.
- (5) Demoralization of medical standards by the expansion of cults.
- (6) Exploitation of the specialties by lay technicians.

These menacing movements will succeed unless they are combated by a powerful and united opposition. Your so-called leaders are either openly fostering these destructive forces, or more subtly giving them full fling by camouflaged neutrality.

The American Medical Association belongs to you and you are entitled to have it effectively protect your vital interests. Let your action on this nation-wide referendum carry your mandate.

In the present crisis it is up to every County Society to instruct all Delegates to the A. M. A. meeting at St. Louis, Mo., May 22-26, 1922, to vote for—

- (A) A change of policy and leadership in the A. M. A. pledged to the immediate abolition of the evils mentioned, and constructive protection of medical interests.
- (B) The repeal of multiple representation and plural voting privilege by Section Delegates.
- (C) The election of Trustees for a period of two years; five Trustees to be elected one year, and four the next, to prevent the Trustees from perpetuating oligarchical rule.

Unless there is a drastic change in the policy and leadership of the A. M. A. the public and profession at large will continue to be misled and misrepresented in the solution of the most pressing problems affecting public welfare and the practice of medicine.

The members of the Scientific Sections are already represented by the Delegates of their respective State Societies, and the voting of Section Delegates is multiple representation, and as such undemocratic and unfair. Unless this plural voting privilege is repealed, the 15 Section Delegates will continue to negative and outvote the Delegates of 15 State Societies having only one Delegate each.

At present three of the nine A. M. A. Trustees are elected each year for a period of three years. There is a proposal before the House of Delegates, introduced at the Boston meeting (1921), to reduce the number of Trustees to seven and have the term of office seven years. Unless the proposed election of Trustees for seven years is nipped in the bud, the A. M. A. will be relegated to "gang rule" for all time to come.

At the Boston meeting of the A. M. A. (1921) those representing the rank and file of the profession lacked only 7 votes of being in control of the House of Delegates, and

would have been able to initiate a policy of public and medical protection, if they had not been outvoted by the Section Delegates. In this connection the following editorial note of warning is of pertinent interest:—

... "For the benefit of the large number of State Journals that exchange with us, we desire to call attention to the necessity of determining where the Delegates to the A. M. A. stand on many questions of vital interest to the welfare of the medical profession at large. We have had examples of what some of the leaders in the profession would do to us if they have their way. It is time to know something about the attitude of those whom we send to represent us at the great parent organization, which supposedly represents the voice of a very large majority of the medical men in this country. The trouble of it is we sometimes are betrayed, and if necessary, in order to have our wishes respected, our Delegates ought to go instructed."

(*Jour. Indiana State Medical Society*, November, 1921).

This warning is all the more necessary since the Board of Trustees, at the Boston meeting (1921), reported that they had under consideration the advisability of the A. M. A. paying the expenses of the A. M. A. Delegates. This simply means further subsidizing of the Delegates to control their votes and to thwart the interests of the rank and file. Each State Society, that values representation by its own Delegates, must take action against this political maneuver.

This is your opportunity of putting your power of attorney into the keeping of only such Delegates to the St. Louis meeting, who will openly avow their stand on all vital matters, who will fight your battles and to whom your interests will be a sacred trust.

Self-protection is the first law of life. Act now!

Fraternally yours,

MEDICAL ADVISORY COMMITTEE.

(Signed) F. H. McMECHAN, M.D., Secretary.

### RESOLUTION

Whereas the Public and Profession are being sold out to

- (1) Foundation control of "full time" medical education.
- (2) Lay board domination and the "closed shop" hospital.
- (3) Socialized state medicine, subsidized community health centers and hospitals under political or university control.
- (4) Legislative dictation of therapy and fees.
- (5) Demoralization of medical standards by the expansion of cults.
- (6) Exploitation of the specialties by lay technicians.

Therefore Be It Resolved that all the Delegates of the..... State Medical Society to the A. M. A. meeting in St. Louis, Mo., May 22-26, 1922, are hereby instructed to vote for—

- (A) A change of policy and leadership in the A. M. A. pledged to the immediate abolition of the evils mentioned, and constructive protection of medical interests.
- (B) The repeal of multiple representation and plural voting privilege by Section Delegates.
- (C) The election of Trustees for a period of two years; five Trustees to be elected one year, and four the next, to prevent the Trustees from perpetuating oligarchical rule.

Be It Further Resolved that copies of these Resolutions be sent at once to the Official Organ of the..... State Medical Society, the Journal of the A. M. A. and the Medical Advisory Committee.

(Signed)

Passed.....

(Date)

..... Sec'y.

A number of copies have been forwarded to this office. In the circular as sent to medical editors, the first paragraph is modified to read:

"As the fate of the practice of medicine is at stake, this plea is being sent to every medical editor and county medical society of the United States. Kindly submit it at once to the readers of your journal for consideration and action."



# WHAT IS THE MEDICAL ADVISORY COMMITTEE?

The following correspondence needs no comment:

LETTER FROM THE EDITOR OF THE JOURNAL TO  
THE SECRETARY OF THE "MEDICAL  
ADVISORY COMMITTEE"

Chicago, January 9, 1922.

Dear Doctor McMechan:

We are considering the publication of the circular and resolutions which are being circulated over your signature. Will you let us know who constitute the advisory committee, so that their names can be published at the same time?

Yours very truly,

(Signed)

GEORGE H. SIMMONS.

REPLY FROM THE SECRETARY TO THE EDITOR

January 12, 1922.

My dear Dr. Simmons,

In reply to your recent letter will you kindly let me know just what the object of The Journal A. M. A. is in desiring the personnel of the Medical Advisory Committee for publication?

Awaiting your further pleasure, I am,

Very truly yours,

(Signed)

F. H. McMECHAN.

LETTER FROM THE EDITOR TO THE SECRETARY

Chicago, January 13, 1922.

Dear Doctor McMechan:

In reply to my request for information as to who constitute the "Advisory Committee" you ask us to let you know "just what the object of The Journal A. M. A. is in desiring the personnel of the Medical Advisory Committee for publication."

The object is to be able to answer the scores of queries that are coming to us with the circular which you sent out. The questions asked are: "What is this Advisory Committee?" "Who constitute this Advisory Committee?" "By whom was the Advisory Committee appointed?" and "To whom, or to what, is this Committee advisory?" All we ask, however, is simply the names of those composing the committee.

Yours very truly,

(Signed)

GEORGE H. SIMMONS.

REPLY FROM THE SECRETARY TO THE EDITOR

January 16, 1922.

My dear Dr. Simmons:

I have been requested by the Medical Advisory Committee to inform you that in printing its circular and resolution that the names of Dr. Edward H. Ochsner, of Chicago, and Dr. James F. Rooney, of Albany, N. Y., may be appended respectively as Chairman and Vice Chairman, besides my own name as Secretary.

Requests for any further information if sent to me will be answered direct in behalf of the Medical Advisory Committee.

Very cordially yours,

(Signed)

F. H. McMECHAN.

## THE OHIO STATE MEDICAL ASSOCIATION

LETTER FROM PRESIDENT OF THE OHIO STATE  
MEDICAL ASSOCIATION

THE OHIO STATE MEDICAL ASSOCIATION

OFFICE OF THE PRESIDENT

187 East State St., Columbus, Ohio

December 30, 1921.

To Presidents and Secretaries of County Medical Societies:

You have undoubtedly received a circular communication accompanied by a form resolution, from the "Medical Advisory Committee" signed by "F. H. McMechan, M.D., Secretary."

Due to the fact that Dr. McMechan is employed as medical editor of the Ohio State Medical Journal there may be some misunderstanding regarding the status of the "Medical Advisory Committee," there being no committee of that name within the State Association. Inasmuch as the origin, personnel, activities, functions and objects of the "Medical Advisory Committee" have not been made known, and in

view of the fact that the statements set forth in the communication and resolution are in the nature of general conclusions rather than information or positive facts, I, as president of the Ohio State Medical Association, respectfully suggest that action on the resolution be deferred until inquiry and investigation have been made.

I am quite sure that the members of Council of the State Association, which meets in Columbus in the near future, will give careful thought and study to the propositions set forth in the communication of the "Medical Advisory Committee," after which you will be advised of findings and action of the Council.

You may be assured that the officers, Council and committee of the Ohio State Medical Association are keenly alert to existing conditions and definite problems with which the medical profession is confronted, and that those who have been chosen by you to formulate policies, promulgate activities and to investigate such conditions are conscientiously and constantly striving for the advancement of the profession and for a proper recognition for it by the public and the state.

You may be assured that the importance of any and all questions affecting medical practice is not being neglected or overlooked by the officers, members of Council and the committees of the State Association.

Yours sincerely and fraternally,

(Signed)

WELLS TEACHNOR, M.D., President.

## ACTION OF THE COUNCIL OF THE OHIO STATE MEDICAL ASSOCIATION

THE OHIO STATE MEDICAL ASSOCIATION

OFFICE OF COUNCILOR

January 12, 1922.

To Presidents and Secretaries of County Medical Societies and Academies of Medicine:

The Council of the Ohio State Medical Association at its meeting in Columbus, on January 8, endorsed and approved the contents and policy of the communication which you received from Dr. Wells Teachnor, President of the Ohio State Medical Association under date of December 30, regarding the activities and propaganda emanating from the so-called "Medical Advisory Committee."

After careful consideration and thorough discussion, the Council wishes to emphasize to you and through you, to the entire membership of the Ohio State Medical Association, that individually and collectively, we know that the officials and committees of the Ohio State Medical Association are working for and serving the best interests of the profession in Ohio; that whatever problems exist, with relation to the policies and personnel of the leadership in the A. M. A. with relation to medical education, foundation subsidies, the interrelation of the state medical societies, questions of state medicine, legislation, medicopolitical situations, cults, and other propositions which were set forth in the circular recently issued by the "Medical Advisory Committee" are being and have been given conscientious, consistent attention by your Council, the officers and committees of your State Association.

We know that solution of any and all such problems can best be arrived at THROUGH THE PROPER ORGANIZATION CHANNELS, and that you may be assured of all possible interest and attention to these problems by your Council, officers and committees, and by your delegates to the Ohio State Medical Association and to the A. M. A. to the end that your ideas and wishes, and those of the great majority of our membership are faithfully carried out.

Communications from the "Medical Advisory Committee" represent the opinions and expressions of INDIVIDUALS. Statements on behalf of that group signed by F. H. McMechan, M.D., should be construed only as INDIVIDUAL EXPRESSIONS and with no authority or official sanction from the Ohio State Medical Association, under which Dr. McMechan is employed as Medical Editor of The Journal of the Association.

This letter is a disavowal of any official responsibilities for the utterances of Dr. McMechan.

Very sincerely,

COUNCIL OF THE OHIO STATE

MEDICAL ASSOCIATION,

(Signed) WELLS TEACHNOR,

President.

(Signed) S. J. GOODMAN,

Secretary of Council.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### CALIFORNIA

**Hospital News.**—It has been decided to spend \$100,000 on improvements and new buildings at the Napa State Hospital. The cottage of the medical superintendent will be improved at an estimated cost of \$1,700.

**Popular Lectures at Leland Stanford Junior University School of Medicine.**—On January 13, a course of popular medical lectures was begun at Leland Stanford Junior University School of Medicine. The topics and speakers for the proposed series of lectures include: January 13, "The Basis of Modern Medicine," by Dr. William Ophuls; January 27, "The Attitude of the Public Toward the Blind," by Miss Katherine Foley, state teacher of the blind; February 10, "The Treatment of Deformities Following Infantile Paralysis," by Dr. Arthur L. Fisher; February 24, "The Control of Botulism," by Dr. Ernest C. Dickson; March 10, "The Truth About Vivisection," by Mr. Ernest H. Baynes, general manager of the Meriden Bird Club, under the auspices of the California Society for the Promotion of Medical Research; March 24, "Present Day Methods of Roentgen-Ray Diagnosis," by Dr. William Edward Chamberlain.

### CANAL ZONE

**Medical Association of the Isthmian Canal Zone.**—At the annual meeting of the association held at Ancon in December, 1921, under the presidency of Dr. W. Troy Earhart, the following officers were elected for the ensuing year: president, Dr. Cornelius D. Briscoe; vice president, Dr. Nathan B. Kupfer, and secretary-treasurer, Dr. Leland S. Chapman, all of Ancon.

### CONNECTICUT

**Connecticut Society for Mental Hygiene.**—The fourteenth annual meeting of the society was held in Bridgeport, Dec. 2, 1921. Dr. Arnold L. Gesell, Yale University, New Haven, Dr. Frank E. William, National Committee for Mental Hygiene, and Miss Mary Jarrett, Smith College School of Psychiatric Social Work, were the speakers. Three honorary members were elected to the society, namely: Mr. Clifford W. Beers, the originator of the mental hygiene movement; Dr. Thomas W. Salmon, medical director of the National Committee for Mental Hygiene, New York City, and Dr. C. Floyd Haviland, superintendent of the Connecticut State Hospital, and chairman of the Committee for Mental Hygiene for the State of New York.

### GEORGIA

**Personal.**—Dr. Marcus F. Carson, Griffin, has been appointed a member of the state board of medical examiners to succeed the late Dr. Henry W. Terrell.

**Hospital News.**—The Grady Hospital Annex for negroes of Atlanta and Fulton counties was formally opened, recently. A modern well equipped laboratory, 200 beds, a nurses' home and a clinic were included in the purchase, which cost the city more than \$100,000.

**Presentation of Pictures of Dr. Long.**—Dr. Joseph Jacobs has presented the Carnegie Library of Atlanta with two pictures of the late Dr. Crawford W. Long; one is a plaster cast of the bronze medallion erected on the campus of the University of Georgia, recently, by Dr. Jacobs, and the other an oil painting by Miss Emma Long, youngest daughter of Dr. Long.

**Fulton County Medical Society.**—At the annual dinner of the society given at Atlanta, January 5, honor certificates were presented to all members who have been affiliated with the society continuously for twenty-five years or more. The speaker of the evening was Dr. James S. McLester, Birmingham. The recently elected president of the society, Dr. Rufus T. Dorsey, acted as toastmaster and also delivered the inaugural address.

### ILLINOIS

**Personal.**—Dr. Harry W. Dale, Chicago Heights, is recovering from injuries received when he was recently attacked by robbers when, in response to a telephone call, he attempted to make a visit at a house which proved to be vacant.

**Hancock County Society Takes Action.**—The Hancock County Medical Society by unanimous vote agreed to use its influence to prevent the reelection to the United States Congress of its present representative of that district, because of his activities on the Sheppard-Towner bill. The county society also took action disapproving laws that would result in meddlesome interference by federal and state authorities in the private practice of medicine.

**Survey of Milk Pasteurization Plants.**—The state department of public health is conducting a survey for the purpose of making a complete and up-to-date directory of milk pasteurization plants in Illinois. A circular letter and questionnaire, asking for the names and addresses of plant owners, have been mailed to local health officers in each of the nearly 1,300 incorporated communities in the state. When the returns from this preliminary step have been tabulated an effort will be made to determine the capacity of each pasteurization plant now in operation. Efforts will also be made to make pasteurization a more universal practice in Illinois than it is at present.

**Isolation Hospital for School.**—Announcement has been made of the completion of isolation quarters for patients suffering with communicable diseases at St. Alban's School, Sycamore. The directors of the school recently proposed to advance a considerable sum toward the erection of a contagious disease hospital for De Kalb County provided the county advisers would appropriate sufficient funds to pay the additional costs. While this proposition is under consideration it seemed advisable to provide the local isolation quarters referred to above although the school is at present free from contagious diseases. The school authorities have kept in close communication with the state department of public health in regard to these matters.

### Chicago

**Jail Sentence for Violation of Harrison Narcotic Law.**—It is reported that Dr. Edward S. McCann was sentenced to six months in jail by the federal judge for having violated the Harrison Narcotic Law, by selling drugs to an alleged addict.

### INDIANA

**Health Board of Physicians.**—The mayor of Columbus has appointed a city health board made up entirely of physicians. The new board includes Dr. Lawson E. Bracken, secretary, Dr. Raymond M. Tilton and Dr. William H. Butler.

**Leper Declared Cured.**—The leper, who was discovered in Indianapolis with anesthetic leprosy about two years ago, placed under quarantine by the state board of health and treated with ethyl ester of chaulmoogra oil, has been pronounced cured and discharged from quarantine. It is said that the most careful search does not find in the nose or elsewhere the lepra bacillus, which at the beginning of the treatment was easily discovered, every slide showing the organism.

### IOWA

**New State Board Secretary in Iowa.**—Dr. Rodney P. Fagen, Des Moines, has been appointed secretary of the Iowa State Board of Health and Medical Examiners, succeeding Dr. Guilford H. Sumner who resigned. Dr. Fagen assumed the office, January 1.

### MAINE

**Epidemic of Diphtheria.**—The town of Prentiss has had an epidemic of diphtheria which is attributed to carelessness of the parents of the first child taken with the disease, who neglected to call a physician. The family followed the advice of the leader of a roving sect known as the "Holy Rollers," who said that medicine was unnecessary and that the child could be cured by faith alone. The child died and within a few days there were ten cases of diphtheria in the immediate vicinity. The county health authorities intervened and now have the epidemic under control.



## MARYLAND

**Clinic at the Johns Hopkins Hospital.**—Members of the American Gynecology Club of the United States and Canada attended clinics at the Johns Hopkins Hospital, January 13.

**Personal.**—Dr. William B. Dalton has been appointed superintendent of the South Baltimore General Hospital, succeeding Dr. Robert W. Johnson, recently resigned.—Dr. Pasteur Vallery-Radot of Paris, France, a grandson of Dr. Louis Pasteur, recently spent a day in Baltimore visiting the Johns Hopkins Hospital, during the meeting of the American Gynecological Club.—Edward M. East, Ph.D., professor of experimental plant morphology at Harvard University, gave a lecture on "The Population Problem in Its Relation to Public Health," January 16, at the School of Hygiene and Public Health, Johns Hopkins University.

## MASSACHUSETTS

**Public Lectures at Harvard University.**—The faculty of medicine of Harvard University, Boston, has announced a course of eighteen public lectures to be given at the Medical School of Harvard University, during the winter and spring.

**Hospital News.**—The contract has been awarded for alterations and additions to the outpatient department of the City Hospital, Boston, at a cost of \$493,000. When enlarged the building will accommodate 1,000 patients; its present capacity is 500.

**Cutter Lectures on Preventive Medicine.**—Dr. Charles Wardell Stiles, Washington, D. C., chief, division of zoology, Hygienic Laboratory, U. S. Public Health Service, delivered the Cutter Lectures on Preventive Medicine, January 17 and 18, at the Medical School of Harvard University, Boston.

**Personal.**—Dr. Robert N. Nye, Brookline, former research assistant to Dr. Frank B. Mallory, has been made assistant director of Division of Biologic Laboratories of the Massachusetts State Department of Public Health.—Mayor Peters has approved the appointment of Dr. Hugo Mella, Cambridge, as pathologist at the Long Island Hospital, Boston.

**Conference of Organizations Caring for Disabled Veterans.**—The first general conference aiming at greater cooperation between organizations caring for disabled veterans in government hospitals and vocational training in Massachusetts was held last month. It was attended by officials of the Veterans' Bureau, American Legion and the Red Cross. These meetings will be held semimonthly.

**Dr. Bowers Resigns.**—Dr. Walter P. Bowers, who, since 1913, has acted as secretary of the Massachusetts Board of Registration in Medicine, has resigned from that position to accept the editorship of *The Boston Medical and Surgical Journal*. His resignation was regretfully accepted. The board elected Dr. Charles E. Prior, Malden, chairman; Dr. Samuel H. Calderwood, Boston, secretary, and Dr. Nathaniel R. Perkins, Boston, assistant secretary.

## MICHIGAN

**Organization of Clinics.**—The clinics of Detroit have been organized and a weekly program is being published in the *Wayne County Bulletin*, the official publication of the county society.

**State Board Appointments.**—Governor Groesbeck has reappointed the following physicians as members of the Michigan State Board of Registration in Medicine for the next four years: Dr. George L. LeFevre, Muskegon; Dr. Guy L. Conner, Detroit; Dr. Nelson McLaughlin, Detroit; Dr. William S. Shipp, Battle Creek; Dr. Albertus Nyland, Grand Rapids.

**Beaumont Lecture Course.**—At a recent meeting of the Wayne County Medical Society at Detroit, the Beaumont Lecture Course was inaugurated in honor of the pioneer physiologist, William Beaumont. The first year's lectures are to be given by Prof. William G. MacCallum, director of the department of pathology, Johns Hopkins University, Baltimore, on the subject of "Inflammation," January 30 and 31, in the Wayne County Medical Building. The lectures will be assembled and published in book form soon after delivery.

## NEW HAMPSHIRE

**Personal.**—Dr. William Moody Parsons, Manchester, said to be the oldest practicing physician in the state—having practiced in Manchester since 1873, and before that time at Milford—celebrated his ninety-sixth birthday anniversary, December 30.

## NEW YORK

**Physician Becomes Mayor of City.**—Dr. Frederick J. Douglas became mayor of Utica, January 1.

## New York City

**Alcoholism at Bellevue Hospital.**—According to figures issued by Dr. Menas S. Gregory, director of the psychopathic and alcoholic service of Bellevue Hospital, 2,381 cases of alcoholism have been admitted to his wards in 1921, as compared with 2,091 in 1920. In 1914, the number of cases admitted was 7,642, and in 1916, 9,293. A large majority of the cases treated in the last two years were men and women who previously were not considered inebriates.

**Conference on Drug Control.**—"To marshal representative forces against the world menace of drug addiction" was the declared object of the inaugural conference held under the auspices of the Narcotic Drug Control League in the Assembly Room of the Colony Club, January 20. Sara Graham-Mulhall, formerly deputy commissioner, New York State Narcotic Drug Control, is president of the league, and Joseph P. Chamberlain, Columbia University, New York City, secretary.

**Professor Pirquet Addresses Joint Meeting.**—At a meeting of the pediatric section of the New York Academy of Medicine, held in conjunction with the New York Nutrition Council, the American Relief Administration and the health service of the New York Chapter of the American Red Cross, January 12, Prof. Clemens Pirquet made an address on "Standards of Child Nutrition as Developed by the American Relief Administration in Austria." He made a plea for further assistance until Austria should be in a position to assume the entire responsibility for continuing the relief work among children.

**Special Appropriation to Fight Scarlet Fever.**—The board of estimate has made an appropriation of \$75,000 to the department of health with which to employ additional physicians, nurses and inspectors in connection with an unusual number of scarlet fever cases in the city and to take precautions against the possible recurrence of an epidemic of infantile paralysis, as this disease runs in cycles and an increase in the number of cases is to be expected during the coming year. A part of this appropriation will be spent for the laboratory study of scarlet fever and infantile paralysis. In 1920, there were 6,885 cases of scarlet fever here and in 1921, 13,880.

**Personal.**—Dr. George H. Reichers has been elected president of the governing board and president of the staff of the Bushwick Hospital, Brooklyn.—Col. Julius O. Cobb, surgeon in command of Fox Hills Hospital, Staten Island, and of the Polyclinic Hospital, Manhattan, has gone to Boston to take charge of the U. S. Marine Hospital there.—Dr. Maurice J. Lewi was the guest of honor at a dinner at the Hotel Astor given in recognition of his work in the health department. Dr. Royal S. Copeland, health commissioner, was toastmaster.—Com. William Seaman Bainbridge, M. C., U. S. Naval Reserve Force, has been decorated by the French government with the officer's cross of the Legion of Honor, in recognition of his work with the allied armies and in preparation of a "Report on the Medical and Surgical Developments of the War."—Dr. Otto Glogau has been elected an honorary member of the Vienna Otologic Society.

## NORTH CAROLINA

**Southern Surgical Meeting.**—At the recent meeting of the Southern Surgical Association, held at Pinchurst, Dr. C. Jeff Miller, professor of obstetrics and gynecology, Tulane University, New Orleans, was elected president to succeed Dr. Randolph Winslow, Baltimore. The new vice presidents are: Drs. Vilray P. Blair, St. Louis, and Robert L. Gibbon, Charlotte. Dr. Hubert A. Royster, Raleigh, and Dr. Guy L. Hunner, Baltimore, were reelected secretary and treasurer, respectively. Memphis, Tenn., was chosen as the next convention city.

## OHIO

**Physician as Mayor.**—Dr. Robert Henderson became mayor of the city of Urbana, January 1.

**Special Meeting of Academy of Medicine.**—A special meeting of the Academy of Medicine of Cleveland was held, January 18, at the medical library. Dr. William H. Park, Bellevue Hospital, New York City, spoke on "Diphtheria Immunity by Toxin Antitoxin" and Dr. John H. Davis, Cleveland, discussed one year's experience with diphtheria, 1,600 cases, and gave a demonstration of the Schick test.



## PENNSYLVANIA

**Personal.**—Dr. William J. Wilkerson has resigned as superintendent and head surgeon of the Grandview Hospital, Sellersville, because of ill health.

**Plans for County Tuberculosis Hospitals.**—The first step toward establishing county tuberculosis hospitals, authorized by the voters in several counties at the November, 1921, election, was taken December 7, when a conference called by Dr. Edward Martin, health commissioner, was held at Harrisburg for the purpose of considering problems to be met in building the new institutions. It was suggested that the hospitals be kept away from charitable or penal institutions but should be accessible to railroads and highways. From 50 to 60 acres was considered enough ground, and it was estimated that the buildings would cost from \$2,000 to \$3,000 a bed. Assurance was given that steps would be taken without delay in both counties represented—Cambria and Luzerne—to choose the sites, and that the erection of the buildings would be started as soon as possible.

## Philadelphia

**Personal.**—Dr. Charles J. Hatfield, managing director of the National Tuberculosis Association, has been appointed a trustee of the University of Pennsylvania.

**Lecture on the Truth About Vivisection.**—Mr. Ernest Harold Baynes, the well-known, life-long friend of animals, gave an illustrated free lecture on "The Truth About Vivisection," January 12, under the auspices of the Philadelphia County Medical Society, the College of Physicians, the Academy of Natural Sciences, the American Philosophical Society, the Medical Society of the State of Pennsylvania, and the Pennsylvania Society for the Protection of Scientific Research.

## PHILIPPINE ISLANDS

**Vaccination for Cholera.**—Nineteen cases of cholera are reported at the Isolation Hospital and the health authorities have started an intensive campaign of vaccination to avert a possible epidemic.

## CANADA

**University of Toronto.**—Discussing the serious charges now being made by a large section of the medical profession against the system of control and teaching in the faculty of medicine at the University of Toronto, Dr. Herbert A. Bruce, professor of clinical surgery, states that the present system is too autocratic, and that for a democratic country, the president of the university has too much power. He believes the amended university act to be responsible for this criticism. This act destroyed the power of the senate, and handed the control over to a board of governors appointed by the province, and at the same time gave greatly increased powers to the president. Previous to the passing of the act each faculty appointed its own dean, annually, but now the president appoints the deans and keeps them in office indefinitely. As a remedy, Dr. Bruce suggests that the university should be put on a more democratic basis, and this would only be possible after a public inquiry conducted by a committee appointed by the board of governors, the result of their findings to be incorporated in an amended university act.

**Prescriptions for Liquor.**—December, 1921, was a busy month for Ontario physicians. No less than 71,028 prescriptions for liquor were issued, and 311 practitioners were suspended by the Board of License Commissioners for Ontario for exceeding their monthly quota of fifty prescriptions. Of the 311 doctors suspended, 207 are suspended for one month; twenty-four, who exceeded seventy-five prescriptions, are suspended until the middle of February, and the remainder for still longer terms. Mr. W. S. Dingman, vice chairman of the Ontario License Board, states that stricter methods will have to be employed and heavier penalties enforced to prevent a recurrence of this condition. Commenting on these suspensions, Dr. Henry W. Aikins, registrar of the College of Physicians and Surgeons, states that as the Medical Council meets only once a year, the executive committee has no power to deal with these cases, therefore cannot suspend physicians from practicing during the periods of suspension. The Ontario legislature has been requested several times to grant this power to the executive committee, but so far nothing has been accomplished.

**Public Health News.**—At the initial meeting for 1922 of the board of health, Toronto, Ont., Alderman C. A. Risk was elected chairman.—Dr. Charles J. O. Hastings, medical

officer of health, Toronto, in his annual report presented to the board said that Toronto had completed the healthiest year in its existence, the general mortality rate of 11.2 for 1921 being the lowest on record. In regard to infant mortality an improvement was shown, the death rate was only 86.8 per thousand as against 144.4 for 1911; the births totaled 13,985 as against 9,914 in 1911.—Dr. Hastings has provided the finance commissioner with a nest egg in the shape of a balance of \$25,388.57, of the total appropriation voted to the health department for last year. The amount voted was \$855,306.47. Thirty cases of smallpox have been reported in Toronto since December 15. Dr. Hastings considers the epidemic mild. With one exception, none of the patients had ever been vaccinated.—According to the recently published vital statistics report for 1921 twins are entering Canada at the rate of 225 per month, by the birth route. In 1921, there entered the province of Quebec 2,843 twins out of a total number of births of 246,820. Quebec has the highest birth rate in Canada.

## GENERAL

**Personal.**—Dr. Hideyo Noguchi, a member of the Rockefeller Institute for Medical Research, was elected to honorary membership in the Society of Dermatology and Venereology of Moscow at its thirtieth annual meeting, October 16, 1921.

**Meeting of National Health Council.**—The annual meeting of the National Health Council was held, January 5, at the American Red Cross building, Washington, D. C.; Dr. Livingston Farrand, president of Cornell University and former chairman of the central committee of the American Red Cross, was elected chairman of the council for the year 1922. Other officers elected were: Lee K. Frankel, Ph.D., vice chairman; Dr. Samuel J. Crumbine, Topeka, Kan., recording secretary and Dr. William F. Snow, New York City, treasurer. Dr. Donald B. Armstrong, Framingham, Mass., was appointed executive officer for 1922.

**Census of Health and Safety Workers.**—All industrial physicians and surgeons, industrial nurses and other persons engaged in industrial health work are to be included in the census of safety and health workers now being taken by the National Safety Council in all parts of the country. Although health work in industry, along with safety, has made great strides in the last few years, it is not at present known how many persons are engaged in either of these activities, who they are, or where they are located. This is the first time an attempt has been made to list all the industrial safety and health workers. A registration form has been prepared, which may be obtained from the National Safety Council, 168 North Michigan Avenue, Chicago.

**Committee for the Protection of Animal Experimentation.**—Some weeks ago it suddenly became apparent that the activities of the various antivivisection societies had finally reached a strength where they were able to menace effectively the health of the community. On a referendum vote in California they threatened all animal experimentation last year, and it was only with some difficulty that the measure was defeated. The Interstate Convention of Antivivisection Societies was held in Boston last month and at that time a committee was organized to undertake a campaign of sane, humane education to combat the propaganda of those who seek to prevent the making of vaccines and antitoxins, the testing of all such drugs as ergot, and a general interference with medical methods of proved efficacy for the diagnosis, the prevention and cure of disease.

A committee of the Boston Society of Natural History was first appointed, of which T. Barbour was chairman, to arrange for Mr. Ernest Harold Baynes to deliver two lectures, one upon a "Nature Study" subject, the other entitled "The Truth About Antivivisection." Mr. Baynes delivered the last lecture, December 17, to a large and enthusiastic audience in Huntington Hall, Boston. It was an amplification of the article which he prepared for the *Woman's Home Companion*, July, 1921, and which at first aroused a howl of consternation from all of the antivivisection groups in the country. So much interest was aroused in the general question that the lecture committee of the Boston Society of Natural History reorganized itself into the Committee for the Protection of Animal Experimentation. An appeal for funds, signed by President Charles W. Eliot, Prof. Richard P. Strong, M.D., Ernest Harold Baynes, Dr. John C. Phillips, Dr. Edward Wigglesworth, Dr. Townsend W. Thorndike and Dr. Thomas Barbour, brought a most encouraging response. The committee has published several statements, designed to instruct the community as to just what the results may be if the antivivisectionists succeed.



Cardinal O'Connell was one of the first to endorse the movement in a most inspiring letter which was followed by letters of endorsement from persons in all stations of life and representing many different interests, particularly life insurance companies, agricultural interests and charitable organizations of many sorts.

The newspapers gave the work of the committee generous publicity and its efforts as a whole have become so successful that there is now a widely expressed desire that the work of the committee be carried forward by some permanent organization. The committee has studied carefully the organization and work of the Research Defense Society of England and it is probable that some organization of this sort will be founded.

To be really effective the society should be national in its scope and have an able, active field secretary and should aim to protect the public from the mischievous activities, not only of the antivivisectionists, but the antivaccinationists, the medical freedomists, so-called, and all others who aim to lower the standards of medical education or jeopardize the public health in other ways.

A correspondence is invited with those interested and our literature is available for free distribution.

EDWARD WIGGLESWORTH, Ph.D.,  
J. C. PHILLIPS, M.D.,  
T. BARBOUR, Ph.D.,  
For the Committee.

**Annual Congress on Medical Education, Licensure, Public Health and Hospitals.**—A joint conference on medical education, licensure, public health and hospitals will be held at the Congress Hotel, Chicago, March 6-10, 1922. The conference will be participated in by the Council on Medical Education and Hospitals and the Council on Health and Public Instruction of the American Medical Association, the Association of American Medical Colleges, the Federation of State Medical Boards of the United States, and the American Conference on Hospital Service.

On Monday, March 6, besides the introductory remarks by the chairman and the annual report by the secretary of the Council on Medical Education and Hospitals, the program will be as follows:

Report on Undergraduate Medical Curriculum: What Subjects, if Any, Should Be Transferred to the Graduate Medical School? Ray Lyman Wilbur, M.D., president, Leland Stanford Junior University, Stanford University, Calif.

The Subject Matter on Public Health Which Should Be Taught to Medical Students in the Undergraduate Curriculum, Hans Zinsser, M.D., professor of bacteriology, Columbia University College of Physicians and Surgeons, New York.

Symposium on the Hospital Internship as an Essential for Graduation, L. S. Schmitt, M.D., acting dean, University of California Medical School, San Francisco; James B. Herrick, M.D., professor of medicine, Rush Medical College, Chicago; J. C. Litzenberg, professor of obstetrics, University of Minnesota Medical School, Minneapolis.

On Tuesday, March 7, there will be an address by Dr. Theodore Hough, president of the Association of American Medical Colleges, and the following reports and papers:

A New Curriculum: Report of Committee on Education and Pedagogics, Hugh Cabot, M.D., dean, University of Michigan Medical School, Ann Arbor.

Liberalization in Medical Education, A. C. Eycleshymer, M.D., dean, University of Illinois College of Medicine, Chicago.

The Student Internship: An Experiment in Medical Education, E. P. Lyon, M.D., dean, University of Minnesota Medical School, Minneapolis.

Professors and Clinical Professors of Clinical Subjects, C. P. Emerson, M.D., dean, Indiana University School of Medicine, Indianapolis.

Teaching Facilities: Report of Committee on Equipment, John T. McClintock, M.D., professor of physiology, State University of Iowa College of Medicine, Iowa City.

On Wednesday, March 8, the session will be devoted to the subject of medical examinations and licensure. The program will be as follows:

Introductory Remarks, David A. Strickler, M.D., president, Federation of State Medical Boards, Denver.

Graduate Work as a Licensure Substitute for Deficiency in Pre-medical Requirements, Thomas S. McDavitt, secretary, board of Medical Examiners of the State of Minnesota, St. Paul.

Reciprocity Problems in the South, with Particular Reference to Special State Licensure Requirements, K. P. B. Bonner, M.D., secretary, Board of Medical Examiners of the State of North Carolina, Morehead City, N. C.

State Licensure Under the Combination Plan, Mr. Paul Davis, director, Bureau of License, Department of Law Enforcement of the State of Idaho, Boise.

Reciprocity in Hospital Intern Service, I. D. Metzger, M.D., president, Bureau of Medical Education and Licensure of the Department of Public Instruction of Pennsylvania, Pittsburgh.

The program for Thursday, March 9, will deal with the general topic, "Organization of the Public for Cooperation with the Medical Profession," with the following papers:

Address, Victor C. Vaughan, D.C., chairman, Council on Health and Public Instruction, Washington.

Organizing the Public as Allies of the Medical Profession, Frederick R. Green, M.D., secretary, Council on Health and Public Instruction, Chicago.

Organizing Physicians for the Conservation of Public Health.

Discussion.

Public Health from a Layman's Standpoint, Mr. Glenn Frank, editor, *Century Magazine*, New York.

Organizing the Public with Physicians as Leaders, F. E. Sampson, M.D., vice president, Iowa State Conference of Social Work, Creston, Iowa.

Organizing Our State Societies for the Protection of Public Health, J. H. J. Upham, M.D., chairman, Committee on Public Policy and Legislation of the Ohio State Medical Association.

On Friday, March 10, the session will deal with hospital service with a program consisting of

Introductory Remarks, Frank Billings, M.D., chairman, American Conference on Hospital Service, Chicago.

Fundamental Principles and Policies Which Are Necessary in a National Program of Hospital Standardization, Mr. John G. Bowman, chancellor, University of Pittsburgh, Pittsburgh.

Qualifications and Training of Hospital Administrators.

Establishment and Organization of the County Hospital.

Hospital Library and Service Bureau: Its Value and Utility to Hospital Standardization and Administration.

The Dispensary: A Diagnostic Center: Its Relationship to the Hospital and to the Medical Practitioners of the Community It Serves, Mr. John E. Ransom, superintendent, Michael Reese Hospital, Chicago.

## LATIN AMERICA

**Aballí, President Elect of Cuban Medical Congress.**—*Médica* of Matanzas, Cuba, states that Dr. A. A. Aballí of that city was elected at the recent Fifth Cuban Medical Congress to preside at the next congress.

**New Polyclinic in Chile.**—The Liga de Higiene Social of Santiago, Chile, has begun the construction of a large modern polyclinic. The placing of the cornerstone became a public celebration, being attended by the president of the republic and the diplomatic corps.

**"Patent Medicines" in Uruguay.**—The executive committee of the Medical Syndicate of Uruguay, after considering the present scarcity of "patent medicines," has approved resolutions stating that the great majority of "patent medicines" can be replaced advantageously by medical prescriptions.

**Hospital News.**—The Hospital Cartagena, a new fifty-bed hospital is to be opened soon at Cartagena, Colombia, S. A. Drs. Raoul Bennett and Kempton P. A. Taylor, Philadelphia, and W. E. Sickner, Ph.D., roentgenologist, Minnesota, sailed Dec. 29, 1921, to take charge of the institution. Dr. Rafael Calvo, dean of the Medical School of Cartagena, will be in charge of the ear, nose, throat and eye clinic.

**Hospital Situation in Argentine.**—The lack of necessary equipment in Argentine hospitals has become critical and the head of the public assistance has asked the secretary of the interior to request a deficiency appropriation of 5 million of pesos to purchase the necessary equipment, especially drugs, which are urgently needed. In order to determine the actual needs, an inspection was made by the secretary of public assistance, Dr. Novaro, of the various municipal hospitals of Buenos Aires.

**Personal.**—Dr. V. Peñuela Rodríguez, a prominent physician of Bogotá, Colombia, has returned from New York to his country.—Dr. Pedro del Pino of Buenos Aires, Argentina, has been visiting in Chicago.—Dr. Reginaldo Arango has been appointed public health officer of Bogota, Colombia.

—Prof. Fernando Magalhães of the Rio de Janeiro medical school was recently injured in an automobile accident, but is recovering.—Prof. Pedro Chutro of Buenos Aires has been delivering some lectures on surgical subjects at the medical school at Santiago, Chile.—A banquet was tendered to Dr. L. Rivas Miguez on his recent retirement from the charge of the Children's Hospital at Buenos Aires after thirty-five years of service.—The Argentine government has awarded part of the national scientific prize endowment to Dr. J. Iribarne for his work on radiotherapy of uterine cancer, and to Dr. S. Parodi for his work, "Parasitologia Humana."—Carelli of Buenos Aires has been demonstrating at Paris and London his method of perirenal inflation for roentgenoscopy (mentioned editorially in *THE JOURNAL*, Oct. 1, 1921, p. 1108), and according to the *Lancet* it seems to be highly appreciated.

## FOREIGN

**Reduction of Rates to Foreign Students in Italy.**—The *Riforma Medica* states that five steamship lines offer reduction of 75 per cent. of the passage fare to students coming to Italy for study. A certificate is required from the students' consul.



**Orthopedic Surgery in Belgium.**—The foundation of the Société Belge de Chirurgie Orthopédique is announced at Brussels. The annual dues entitle the members to the *Archives Franco-Belges de Chirurgie* without further charge. Dr. A. Lambotte is the president of the new society.

**Public Health Congress in Barcelona.**—Arrangements are being made to hold the first National Congress of Public Health in Barcelona, Spain. At the same time there will be held an exhibition of public health and sanitary devices which will aid to popularize modern sanitary methods in Spain.

**Health Department Created in Russia.**—In the recent reorganization of the Soviet cabinet, three new portfolios were created, one of them for public health. Dr. Semashko has been placed in charge. One of the by-effects of the war has been the creation of public health departments in practically all European nations.

**Tribute to Leading Spanish Dermatologist.**—A booklet of forty-three pages has been received which is a tribute to the work of Dr. E. A. y Sáinz de Aja, professor at the Policlinica of Madrid, a leading dermatologist and syphilologist. The list of his principal publications fills nine pages, and the dedication of the booklet is signed by 159 physicians who pay tribute to him as the founder of the Spanish school of dermosyphilography.

**International Congress on Mental Hygiene.**—The French Ligue d'Hygiène Mentale has organized an international congress on mental hygiene to convene at Paris, May 24-27, 1922. The *Informateur* for December, 1921, gives the details of the movement to realize this conference. Correspondence should be addressed to Dr. Antheaume, 6 rue Scheffer, Paris. The fee has been placed at 10 francs, and 25 francs for regular members of the congress.

**Compulsory Vaccination Against Typhoid.**—The *Castilla Médica* relates that a state regulation in Spain now imposes vaccination against typhoid, when typhoid or paratyphoid are prevailing in epidemic form, for all tending the cases or in relations with the sick, directly or indirectly, except as the vaccinating physician recognizes contraindications for the procedure. The decree adds that consent is not given to use vaccines made with living germs.

**Personal.**—The fiftieth professional anniversary of Dr. Espina y Capo of Madrid is soon to be celebrated with presentation of a portrait bust and a memorial tablet to be placed on the wall of his clinic. A petition is also being circulated to ask that his senatorship be made for life. In addition to his manual on heart disease and works on tuberculosis and social hygiene, etc., he has published a number of translations of medical works.—Dr. E. Suñer was the guest of honor at a banquet on the occasion of his appointment to the chair of pediatrics at the University of Madrid.—Professor Hammarsten of Upsala and Professor Madsen of Copenhagen were recently elected honorary members of the Berlin Medical Society.

**Roentgen Academy Planned at Berlin.**—A meeting of officials, university authorities and representatives of manufacturers of roentgen-ray apparatus was held recently at Berlin to plan for the foundation of a roentgen academy. The roentgen manufacturers offer to finance the institution, which is intended to contain laboratories and lecture rooms for training in roentgen-ray work, but not for research. The university authorities protested against the plan of a separate, private institution of the kind, and pleaded to have it organized as a university institute or have the manufacturers sustain the already organized institutes in this line. The latter plan has been followed in the Kaiser Wilhelm-Forschungs Institut which owes its progress to endowments made by the organized manufacturers.

#### Deaths in Other Countries

Col. H. Littlewood, General Hospital, Leeds, England, December 19, aged 60.—Dr. W. R. C. Middleton, health officer of Singapore, Straits Settlements, died at Bexhill, England, December 8, aged 58.—Dr. G. J. K. McIver, Australian and New Zealand Army Medical Corps, during the World War, died in Victoria, Australia, October 5.—Dr. R. Gambier of St. Leonards, England.—Dr. W. C. Sanders, Cannes, France, former president of the Royal Medical Society, from pneumonia, aged 56.—Dr. H. E. Hick, Rhodesia, South Africa, chairman of the Mashonaland division of the British Medical Society, October 27.—Dr. G. P. Jordan, health officer of Hong Kong, China, one of the founders of the Hong Kong Medical College, vice chancellor and professor of tropical diseases of the Hong Kong University, died in London, December 4, aged 64.—Dr. A. Burckhardt,

professor of hygiene at the University of Basel.—Dr. L. Hahn, librarian of the Paris medical school.—Dr. J. Schäffer, privatdozent for dermatology and syphilis at the University of Breslau.—Dr. L. Emery of Lyon succumbed to the effects of a scratch at a necropsy, aged 30.

#### CORRECTION

**Physicians Fees Not Reduced.**—We are informed by Dr. Morris A. Slocum, secretary of the Physicians Mutual Aid Association of Sharpsburg, Pa., that statements relative to a general reduction of fees by Sharpsburg physicians are incorrect.

### Government Services

#### Public Health by Radio

The U. S. Public Health Service, December 23, inaugurated a semiweekly wireless health bulletin service through the Naval Radio Station, N. S. F., Naval Air Station, Anacostia, Va. Messages are sent on Tuesdays at 4:15 p. m., and Fridays at 9 p. m., Washington time. It is said that any radio station, amateur or professional, which has a telephonic attachment may be able to read these messages. All radio operators are advised that if they have particular questions pertaining to health which they wish to ask, they may write to the Surgeon General, U. S. Public Health Service, Washington, D. C., for the attention of Radio Service, giving name of operator and call signal of their station, and their questions will be answered by radio telephone at the conclusion of each public health radio message.

#### Civilian Status for Public Health Service Officers Stopped

Authoritative information comes from the White House that the proposed order to place public health officers on a civilian basis will not be issued. This announcement has been made in answer to protests which, in large numbers, went to Washington from many parts of the country against this contemplated order, which was first suggested by the Bureau of Efficiency and later informally approved by the Assistant Secretary of the Treasury. The effect of the proposed order would have been to reduce the pay of health officers about 50 per cent. and would have caused many resignations in the Public Health Service.

#### Hearings on Langley Bill

Hearings have been started before the House Committee on Public Buildings and Grounds on the Langley bill providing a fund of \$16,350,000 to complete the permanent government building program of modern hospitals to care for disabled war veterans.

#### Army Dental School

On urgent recommendations of Surgeon General Ireland an Army dental school has been established at the Walter Reed General Hospital in Washington, D. C. A class of twenty students started the course extending until June 30, 1922. These officers recently completed a course of tactical instruction at the medical school at Carlisle Barracks, Pa., and now will receive final technical and scientific instruction. The school, which is attached to the Army Medical School clinics and laboratories also will be utilized for the training of a select corps of enlisted men of the medical department in the technic, hygiene and mechanics of dentistry.

#### Conference on Care of Disabled

Gen. Charles E. Sawyer, President Harding's private physician and acting chairman of the Board of Hospitalization, has called a conference this week of the commanding officers of government hospitals to discuss plans for the improvement of the care and treatment of disabled war veterans. The conference is being attended by representatives of all the institutions under control of the U. S. Veterans' Bureau, the U. S. Public Health Service, the Interior Department, the Army and the Navy and the Old Soldiers' Homes. These hospital officials will also attend a meeting this month of the chiefs of the various departments of the government called by President Harding and Charles G. Dawes, director of the



budget, for the purposes of discussing the reduction in expenses and the practice of economy in handling federal finances.

#### Proposed Neuropsychiatric School

Recommendations to the Federal Board of Hospitalization, headed by Brigadier General Sawyer, for the establishment of a neuropsychiatric school have been made by Dir. Charles R. Forbes of the U. S. Veterans' Bureau. The proposal is to locate the school at the St. Elizabeth's Hospital in Washington, D. C., for the instruction of medical officers of the U. S. Veterans' Bureau and the U. S. Public Health Service in the treatment of neuropsychiatric diseases. The director of the Veterans' Bureau has also recommended the purchase by the government of a hospital at Memphis, Tenn., for the treatment of disabled veterans of the southern district. He also announced that the reduction of the number of contract hospitals was being made as rapidly as government facilities became available and that in the future all hospitals operated by the United States would be known as U. S. Veterans' Bureau hospitals. Approval by President Harding of the plans of Colonel Forbes for the establishment of three government rehabilitation schools was announced this week. These schools will be located on the Pacific coast, on the Atlantic coast and in the South.

#### Examination of Hospitalized Ex-Service Men

A campaign to examine all ex-service men who have been hospitalized by the government has been inaugurated by Col. Charles R. Forbes, director of the U. S. Veterans' Bureau and every disabled patient in all the government institutions is expected to be visited by a representative of the bureau. At the present time there are 11,730 veterans hospitalized for tuberculosis, 8,346 for neuropsychiatric causes, and 8,819 general and surgical cases. The largest number of tuberculous cases are in the states of Georgia, North Carolina, South Carolina, Florida and Tennessee, where there are 2,303 cases. In the states of New Mexico, Colorado, Wyoming and Utah, where the climate is conducive to the recovery of tuberculous patients, there are 2,045. The number of tuberculous and neuropsychiatric cases will continue to increase and is expected by the U. S. Veterans' Bureau Medical Department to reach its peak in 1925, when it is estimated that there will be 24,000 veterans hospitalized. A total of 1,632 hospitals where ex-service men are now confined, including contract hospitals, Army and Navy hospitals, Public Health Service hospitals and soldiers' homes, will be visited during this campaign. The number of patients now in these hospitals reaches a total of 28,895. This number represents the most seriously disabled veterans of the World War. A large number of them have been in the hospital ever since they were wounded overseas. There are at present four hospitals in the Philippine Islands taking care of beneficiaries, six in Porto Rico and five in Hawaii. Among these hospitals are fifteen Navy hospitals, six Army hospitals and nine soldiers' home hospitals.

#### Allocation of Funds Approved by the Langley Bill

Funds to be expended by the secretary of the treasury on the advice of the consultant on hospitals of which Dr. William C. White is chairman have been allocated. At this time the Veterans' Bureau has no further funds for the lease or purchase of further hospital sites. Additional facilities for Veterans' Bureau patients, on which actual construction work has not been started, include a 500-bed hospital at Tuskegee, Ala., for negroes with tuberculosis and with neuropsychiatric disorders; a neuropsychiatric hospital for 500 patients at Palo Alto, Calif.; a 250-bed tuberculosis hospital in Western Pennsylvania; a 250-bed general hospital at St. Louis; a 250-bed tuberculosis hospital in New York state for patients from the metropolitan district of New York. During the new year the Veterans' Bureau will have at its disposal in government institutions 3,150 additional tuberculosis beds and 2,750 additional neuropsychiatric beds.

#### CORRECTION

**Proposed Law Governing Medical Corps Promotions.**—Promotions in the Medical Corps of the U. S. Army (THE JOURNAL, Jan. 7, 1922) are covered by Section 10 of the National Defense Act as amended by the act approved June 4, 1920. It is already law and has been in effect since the passage of the act.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec. 19, 1921.

#### Compensation for the Disuse of a School Following Its Use During the War as a Hospital for Venereal Disease

A curious case has come before the war compensation court. The trustees of a girls' school at Gravesend claimed compensation for the use by the Admiralty of the college premises as a hospital for venereal diseases during and after the war. They claimed the large sum of \$365,000, on the grounds that they could not again use the premises as a school after the use to which it had been put. Medical evidence was given to the effect that the premises could be disinfected and infection from their subsequent use rendered impossible. But several medical witnesses stated that such a moral stigma would attach to the place as to render it no longer suitable for a girls' school; that it would be morally prejudicial to young girls to send them to premises which had been subjected to such use, and that their parents would reasonably decline to send them. The court was of opinion that the risks to the physical condition of imaginative young girls arising from knowledge of the use to which the school had been put would be a proper subject for serious consideration by the trustees; that the history and traditions of a school have a serious material influence on its usefulness and success. Judgment was given in favor of the trustees. The amount of compensation remains to be determined.

#### Sudden Increase of Influenza

The returns of deaths from influenza for the last week show a sharp rise. The type of influenza is peculiar. It seems to be largely of the gastric type. That is to say, the attack is characterized by sickness, vomiting and giddiness, and a sense of great weakness. In some instances, there seems to be no rise of temperature and people go about until suddenly warned by a feeling of faintness. A few show a rash in the form of heat spots, a condition which was observed in cases of the disease occurring last April. In the great epidemic, the type of infection was pulmonary, and pneumonia was the danger. So far the present epidemic does not seem to be characterized by pulmonary symptoms.

#### Recovery of Fees for Osteopathy

An appeal came before the High Court of Justice against a judgment given by a county court for \$290 for osteopathic treatment. The plaintiff had a diploma from an American college of osteopathy, but was not a registered practitioner in this country. In her evidence at the county court, the plaintiff said that she did not profess to have medical or surgical skill or to diagnose disease; that osteopathy was a "manipulative treatment" of the tissues of the body, and that she gave treatment only by request and did not advise. The defendant contended that the plaintiff was debarred from recovering fees by the medical act which provides that "no person shall be entitled to recover any charge in any court of law for any medical or surgical advice or attendance or for the performance of any operation or for any medicine which he shall both have prescribed and supplied, unless registered." The defendant had paid an account of the plaintiff's in the preceding year; but, in the case of the disputed account, a physician whom the defendant had consulted was of opinion that osteopathic treatment was useless and possibly harmful to the defendant. The county court judge held that osteopathic treatment was not within the medical act



and gave judgment for the plaintiff. The appellant's lawyer referred to the definitions of the words medical, osteopathy, and operation in the New English Dictionary. "Operation" included treatment by hand alone. For the osteopath, it was contended that she did not call for the purpose of giving advice and was not entitled to make any charge unless she gave actual treatment; and that the medical act covered only attendance or advice. The presiding judge said that in his view the plaintiff did not give any advice. She gave certain treatment to the body. He declined to be led into definitions. He was satisfied that this case did not fall within the act. The appeal was therefore dismissed.

#### Trade Union Boycott of Hospitals

The National Federation of General Workers has issued a notice counseling all members of its affiliated unions not to subscribe to or help any demonstration on behalf of hospitals until they have agreed to pay trade union rates to their staffs. This threat has arisen in consequence of five of the London hospitals terminating an award given by an industrial court on the question of wage rates and conditions. The award dealt only with minimum wages for unskilled labor, fixed at \$15 per week; working hours to be forty-eight per week; overtime to be paid as time-and-a-quarter. The hospitals concerned repudiated any intention to reduce wages below the minimum stated. The difference, therefore, lies in the conditions. The Dock, Wharf, Riverside and General Workers Union, which seems to desire to incorporate hospital workers, has put forward an ambitious program, which amounts to a claim that the direction of hospitals shall be handed over to it. It divides hospitals into those which engage in research and those which do not. For some unexplained reason, it has fixed a rate of wages to be paid by the former which is higher than that to be paid by the latter. It divides porters into five grades, from the head porter, who is to be paid \$26 per week, to the lowest, who is to be paid \$16. It also fixes rates of pay for pathologic, bacteriologic and clinical attendants, for laboratory assistants in three grades, for radiographic operators, male dressers and nurses, for the hospital clerical staff, and for its assistant dispensers. None of these workers, as a rule, belong to the Dockers' Union. Perhaps the idea is to force them in. Possibly the union will then turn its attention to the female nurses and even to physicians, who will be asked "to show their card." Mr. E. W. Morris, house governor of the London Hospital, while disclaiming any quarrel with trade unions, points out that a hospital is not a producing factory and cannot be run on the same lines. People who wish to work with their eye on the clock should choose to earn their livelihood elsewhere. The night porters go on duty at 6 p. m., and are allowed to go to bed at 1 a. m., but remain on call for emergencies. If they are called after 3 a. m., the union demands that they be paid overtime. This would mean that while surgeons are summoned from the other side of London, and dressers, who are called up, are paid nothing, these men would have increased pay.

#### Hospital Professors Not to Engage in Private Practice

The University of London has decided that the holders of the new medical chairs at those London hospitals which do a considerable amount of research work and teaching shall not engage in private practice. It is considered that the established practice of combining hospital work and private practice militates against original work.

#### The Conveyance of Plague by Rat Fleas

A most interesting discovery with regard to the conveyance of plague to man by the agency of rat fleas has been communicated to the *Indian Journal of Medical Research* by Major F. W. Craig of the Indian Medical Service. The

investigations published in India in 1907 showed that plague was conveyed by rat fleas. It was then generally assumed that all rat fleas—only one species, *Pulex cheopis*, was then known—were capable of communicating plague. Later it was discovered that there are at least three species of rat fleas, one of which, *Pulex astia*, is just as widely distributed as *Pulex cheopis*. Major Craig now states that *Pulex astia* never conveys plague, but it is invariably conveyed by *Pulex cheopis*. This explains why large portions of India, such as the southern portion of the Madras presidency, and large tracts of the eastern coastal area, of the central India plateau and of eastern Bengal and Assam have remained free from the disease, although they are near to and in communication with regions which have suffered severely. The importance of this discovery is obvious. If *Pulex cheopis* and not *Pulex astia* is the plague flea, it will be possible, by examination of the fleas of a locality, to estimate precisely its liability to plague; in fact to map out the cheopis belt, just as the fly belts of Africa have been mapped out. It would clearly be unnecessary to take elaborate and expensive precautions against plague in a district in which rat fleas were of a species which is not a vector of plague.

#### "Dependent Husbands"

A sequel to the dismissal of a woman physician by the St. Pancras Borough Council because she married, reported in a previous letter (*THE JOURNAL*, Nov. 12, 1921, p. 1585), is contained in a report by the General Purposes Committee to the council. The committee has considered minutes of the Public Health Committee recommending that, in filling the vacancy, the principle recently adopted by the council with regard to the termination of the appointment of women on marriage be included in the conditions of appointments. The General Purposes Committee agree with this, but at the same time desire to make it clear that they are prepared to consider applications from married women with dependent husbands. The condition of termination of the appointment of women on marriage should be subject to the qualification that married women with dependent husbands are not debarred. The reason for barring married women is thus obvious. It is not that the Council considers marriage per se a disqualification, but only when it takes place with a man able to support the woman. The idea evidently is that a woman physician with a husband who can support her should not be allowed to compete against women who have not. The council, which contains a majority of labor members, is evidently imbued with the prevalent economic error that there is a fixed amount of work in the world to be done and that any one obtaining work is causing the unemployment of some one else.

#### PARIS

(From Our Regular Correspondent)

Dec. 16, 1921.

#### Secondary Education of Girls in Relation to Depopulation

At the last congress for the promotion of the birth rate, held in Bordeaux, Mlle. A. Amieux, principal of the école normale supérieure of Sèvres, presented an interesting communication on the problem of depopulation and the remedies that the secondary instruction of young women offers. France is becoming depopulated because it loses too many children in infancy and early childhood. In order to remedy this evil, the lycées for girls have mapped out a definite program. Pupils are given instruction in hygiene pertaining to early infancy. Contagious diseases, such as typhoid, diphtheria, measles, chickenpox and tuberculosis, are explained to them, in a general way. The effects of alcoholism are taught. At the same time, the pupils are encouraged to take part in the various forms of infant welfare work: day nursery,



*gouttes de lait* (milk stations), etc. In Paris, as well as in the provinces, courses in child welfare are becoming more common, presented either independently or in connection with secondary schools, thus preparing the girls of today to be the mothers of the future. The work of the *pouponnières universitaires*, established during the war by the ladies' aid societies for the promotion of infant welfare, can scarcely be overestimated. The pupils of the secondary schools contribute to their support. After completion of their secondary school work, at the age of 17 or 18, the young women, on approval of their parents, take a three or six months' course at the *pouponnière*, where they pursue courses in child welfare given by the regularly appointed physicians of the controlling society.

Mlle. Amieux is constantly considering to what extent and by what means secondary instruction for young women can, directly, or indirectly through moral influence, contribute toward an improvement in the birth rate. She has suggested a plan for sex education, by which this subject, instead of being isolated as heretofore, will be closely interwoven with all other subjects. For example, beginning with the kindergarten and on through the elementary grades, by means of natural history, the attention of the young girls may be directed to all living organisms. Later, the subject of reproduction in plants may be taken up; then, in a general way, the same phenomena in animals. A few years later, more detailed lessons in human anatomy and physiology may be begun, since up to this time the instruction will have been confined to the functions of nutrition and general relationship. A somewhat superficial study of the feminine organs of generation and of the development of the human embryo may be undertaken. A succinct discussion of certain bacterial diseases and the circumstances governing their transmissibility from mother to child could be interposed at this juncture, thus affording an opportunity for discreet advice on the subject of sexual hygiene. Mlle. Amieux also suggests, in connection with sex education, that collaboration between the secondary school and the home be established. She proposes, furthermore, that mothers' meetings, presided over by the woman principal or the woman physician attached to the institution, be held regularly, at which questions pertaining to sex education shall be discussed, with a view to preparing the mothers better for their task.

#### Death of Madame Dr. Brès

A few months ago, I mentioned the sad situation of Madame Madeleine Brès, the first French woman to secure (about fifty years ago) the title of doctor of medicine. Blind and more than 80 years of age, she had become absolutely destitute; so a subscription was opened in medical circles to secure for her the needed relief (*THE JOURNAL*, April 9, 1921, p. 1023). Madame Brès died November 30.

#### Supervision of Clinical Laboratories

Practicing physicians are getting more and more into the habit of depending on the clinical laboratories for information they need to complete their clinical examinations (Wassermann test, serodiagnosis in typhoid, etc.). For example, in 1920, the Pasteur Institute of Paris performed 26,500 tests. It is also quite evident that the number of biologic laboratories is increasing. Besides the official laboratories connected with the schools of medicine, the hospitals or the Pasteur institutes, new private laboratories are constantly being established. The latter present, unfortunately, the grave defect of being left to their own initiative, and they are often accused of furnishing erroneous analyses. In this connection, an experience of Dr. Ravaut is particularly instructive. A specimen of blood that he sent to three different laboratories for a Wassermann test yielded three dif-

ferent responses: reaction positive, reaction negative and reaction partially positive. Only one laboratory had, in reality, made a correct analysis.

In order to remedy this state of affairs, Dr. Paul Salmon, writing in the *Revue d'hygiène*, suggests that a commission for the supervision of medical biologic laboratories be created. Such a commission might be given the power to grant, on demand, an official sanction (as, for example, is now the case in connection with the manufacture of serums and vaccines). Likewise, if it became established that a given laboratory was poorly conducted, such official sanction could be withdrawn. This commission might also be entrusted with the creation of laboratories in sections where needed. Some of the departments of France, and some French cities of more than 100,000 inhabitants, do not possess a single laboratory capable of meeting the needs of physicians. In such cities, in case of epidemics of diphtheria or dysentery, the foci of contagion cannot be ascertained. It is, therefore, in the interest of public policy to establish, and, if necessary, to subsidize, regional biologic laboratories.

#### The Psychiatrists in Relation to the Academy of Medicine

The premature passing of Professor Dupré leaves a vacant chair, at the Academy of Medicine, in the section of hygiene and legal medicine. Formerly, psychiatry had two representatives, at one time, in this section; namely, Magnan and Motet, two famous names in the domain of clinical and medicolegal psychiatry. After the death of Motet, his place in the academy was not filled by an alienist. Only Magnan was succeeded by a psychiatrist—Professor Dupré. At the present time, besides two well known alienists, there are other physicians who have had no connection with medicolegal psychiatry or mental diseases, who are aspirants for the vacancy caused by the death of Dupré. The psychiatrists have become aroused over the matter and have filed a protest from the pen of Dr. A. Antheaume, who is the director of the *Informateur des aliénistes et des neurologistes*. They state that they cannot think that an institution possessing official authority, such as the Academy of Medicine is, can be allowed to be without a representative of medicolegal psychiatry, when it is considered that at any moment it may be consulted by the government on technical questions such as arise in connection with the partial or total revision of legislation pertaining to those mentally defective. Then again, from another angle, the Academy of Medicine is entrusted with the awarding of numerous prizes, established by foundations, for work done in the domain of mental diseases. It would not seem appropriate that such prizes be bestowed by committees (appointed by the academy) on which no alienists serve.

#### The Le Conte Prize

The Academy of Sciences has awarded to Monsieur Georges Claude the Le Conte prize, amounting to 50,000 francs, for his discoveries in the field of industrial chemistry. Monsieur Claude, in a letter expressing his gratitude, announces that he has decided to divide the amount of the prize between the Société de secours des amis de la science and the research laboratories of the Collège de France. As I have often had occasion to remark, our laboratories are lacking in resources, and their lack of funds often hampers scientific research (*THE JOURNAL*, Nov. 13, 1920, p. 1353).

#### A Monument to Prof. S. Arloing

The fellow citizens of the late Prof. S. Arloing of Lyons have erected at Cusset, department of Allier, a monument to his memory. The medical faculty of the University of Lyons sent as delegates, at the unveiling, Prof. J. Nicholas and Prof. P. Courmont. The monument was executed by Dr. Paul Richer, professor in the Ecole des Beaux-Arts, Paris.



## BUENOS AIRES

(From Our Regular Correspondent)

Dec. 1, 1921.

## First Local Congress of Argentine Association

The first local congress of the Argentine Medical Association was held, November 7-17, in its own offices. Reports were submitted from the component societies. The subjects discussed included, in the medical ethics section, suppression of internships, and actual pay for hospital care which many well-to-do persons now receive at a reduced price, no payment being made to physicians or surgeons. The need of correcting this last condition was shown by Dr. Julio A. Passeron. Prof. M. V. Carbonell read a very thorough paper on venereal prophylaxis. In the internal medicine section, reports were presented on encysted pleurisy by Drs. Araoz Alfaro, Castex and Raimondi; and ulcerative colitis by Drs. Bonorino Udaondo and Martini. In the biology section, several reports were presented on the investigation of spirochetes, by P. I. Elizalde; sperm of syphilitic patients, by V. Widakowich; basis and value of the Wassermann test, by E. Lorentz; precipitation reactions in the diagnosis of syphilis, by C. Pico and A. Sordelli. Several subjects were discussed in the surgery section: tumors of the pancreas, by R. Rivarola; pancreatic and pancreatic-splenic mobilization, by A. Gutiérrez; hereditary syphilis of the large bones, by L. Tamini; drainage in gynecology, by A. J. Bengolea, and present tendencies in the treatment of puerperal infection, by E. A. Boero.

The Society of Biology designated a commission formed by Drs. A. Bachman, E. Lorentz, A. Sordelli, F. Rosenbusch, S. Mazza and C. Pico, to work out a standardization scheme for the Wassermann test in Argentina, and requested that afterward it be made official.

## Dysentery

The dysentery epidemic that prevailed in previous years in Catamarca has appeared again. The people there attribute it to the eating of green fruit. Polyvalent antidysentery serum has been sent for the treatment of patients.

## Universidad del Litoral

The Medical School of Rosario is at last in working order, and the first three years' courses are being given regularly. The following professors have been appointed: H. L. Caretti, semeiology; A. Zeno, surgical pathology; C. Alvarez, medical pathology; M. Llanos, urology; E. Ferreyra, otorhinolaryngology; A. Baraldi, operative medicine; E. Weiler, therapeutics; E. T. Fidanza, dermatology, and F. B. Valdez, anatomy. These appointments have made a good impression, as the appointees are prominent physicians and some of them were already teaching in other schools. The medical profession and the students at Rosario have expressed their displeasure at other professors who have not moved there, but come only two or three times a week. This interferes with the advancement of scientific institutions and therefore is criticized.

## Catarrhal Infections

The present summer has been characterized by frequent rains and unexpected and intermittent cold waves. These climatic changes have caused an unusual epidemic of catarrhal affections of the respiratory channels.

## Medical Prizes

The Instituto Miñe, the chief function of which is to further and reward works aiming at the scientific and material progress of the country, has decided to include among its annual prizes two prizes of \$2,500 each, for biology and natural history subjects, and another for the best paper on healthful and cheap lodgings. The Academy of Medicine has

also decided to grant some prizes on the occasion of its centennial in 1922. At the same time there will be inaugurated the Cancer Institute, built under its direction.

## Personal

Professor Chutro has given in Chile a series of lectures which have been much praised.—Dr. R. de Gainza, professor of embryology and histology in the medical school, died suddenly.

## Plague Considered an Accident

The civil branch of the supreme court has finally decided the lawsuit brought by a woman whose husband died of bubonic plague contracted at his working place. The court sentenced the defendant to pay damages to the widow in an amount to be decided by the judge.

## VIENNA

(From Our Regular Correspondent)

Dec. 18, 1921.

## Proposed New Legislation Concerning Abortion

The laws of this country have hitherto declared abortion attempted or done by any person, whether medical or nonmedical, a crime, unless due proof was produced that the prospective mother was suffering from a condition which, according to the recognized rules of medical science, would be seriously aggravated by a complication of pregnancy. The socialistic parties having now obtained high influence here, one of their doctrines, that a control of births is very necessary, has been embodied in a bill introduced at the National Assembly by female and male members of the House. The main feature of this bill is the proposition that abortion before the completion of the third month should be free from law restriction if performed by a duly qualified medical person, and if the mother consents to the operation. The paragraphs dealing with these conditions have been formulated as follows: "Whoever induces or tries to induce abortion, without the consent of the mother, at any period of the pregnancy, from whatever motive, shall be considered a criminal offender" (the punishment would be hard labor for from one to ten years, especially if the mother suffered detriment to her health). "A pregnant woman, who purposely, by whatever action, either tries to induce abortion after the third month or causes her labor to produce a dead child, shall be regarded as a trespasser of the law." (Punishment for from one month to twelve months.) "Whoever attempts, without being a medical person to induce abortion with the consent of the mother, before the completion of the third month or who ever induces a woman to cause abortion before the completion of the third month without the aid of a medical person, commits a punishable action." Special punishments are suggested for persons performing abortions as a business. The whole bill is formed in a way to enable any prospective mother to get rid of the fetus before the operation involves serious risk to her, and it encourages or rather necessitates the employment of a competent doctor for this purpose; while abortion after the third month, which is generally regarded as a risk, is severely punished, unless medical reasons make it necessary. It must be admitted that the adoption of this bill would mean a real relief for numerous hardworking, ill-fed women, who at present, under the most unsocial conditions of housing or rather overcrowding and semi-starvation existing here, must regard their eventual pregnancy as a serious danger and severe accident, for which the above law would be the only remedy. Of course the old moral principles do not yet find their way to consent to this novel departure of the law; still it emanates from a real feeling of responsibility on the part of the politicians who



have drawn up the report recommending the adoption of this bill as an advance in social development.

#### Celebration of Professor Hajek's Birthday

A few days ago the sixtieth birthday of Professor Hajek of world-wide fame as a rhinolaryngologist, was celebrated with quite unusual solemnity by his numerous pupils, friends and comrades. When two years ago he succeeded Chiari to the chair of rhinolaryngology at Vienna University, many well-qualified men predicted that he, being an outsider, would have a very difficult position at the clinic. However, he not only mastered all the adverse conditions, but also has made his clinic the Mekka of students from all parts of the world. His clear insight into pathology, his wonderful teaching ability, his cool and sharp judgment and appreciation of every advancement of knowledge, have won him sincere friends everywhere. Therefore, from Scandinavia and South America, he received, in honor of his birthday, substantial checks to be used for the benefit of his clinic, as well as other tokens of admiration from his present and former pupils and assistants. The American Medical Association of Vienna had also delegated one of its members to represent them on the occasion.

#### Alarming Increase of Rats in Austria

The board of health has issued to all concerned instructions concerning the spread of rats in this country, warning them of the danger involved thereby. As in other countries, here, too, the numbers of these rodents have multiplied to such a degree that their presence alone is a danger to public welfare, owing to the damage done to articles of food. But as they also act as carriers of plague, and the outbreak of such an epidemic is easily possible because of the dangerous conditions in the near East—Poland, Russia, Roumania and Turkey—great stress is laid on the possibility of destroying them. In several places, Paris, Naples, Cattaro, Fiume, with whom we are doing a good deal of trading, outbreaks have occurred recently. The leaflet of instruction gives details concerning the rats chiefly responsible for the transmission (*Mus rattus-domesticus* and *Mus rattus-migratorius*) and tells how to destroy the germs by the use of typhoid bacteria, which is virulent for them.

#### Statistical Figures of the Sickness Insurance Clubs in Austria

In a report of the ministry of social welfare, some interesting data are given, relating to the work done in the sickness insurance clubs (*krankenkassen*) in 1919. By law, every person employed in industrial or commercial concerns, as well as artisans, laborers and temporary factory hands, must be insured as long as they are working there, in one of these clubs. The premium is defrayed by both parties, employer and employee, the former paying 33 per cent., the latter the remainder. There were 740 such clubs in this country, of which only 541 could be considered in that report. The clubs reported on had 785,095 members, of whom 342,994 were female (43 per cent.). Out of each 100 members, 46 on an average became ill and remained under treatment for 30.4 days each (average); 2.15 per cent. of the women were under treatment for childbirth. Per member, the number of days of illness was 13.18 in the males, and 11.39 in the females (average). Per hundred members, 1.97 died in that year. The whole mass of members were divided into wage classes, as their sick pay was paid accordingly. It is interesting to note that only 4 per cent. were in the lowest class, while more than 50 per cent. were in the highest class of income (over 3,000 kronen per month). The yearly income of all these clubs was 74,731,000 kronen. The expenditure was 67,467,000 kronen. This consisted of sick pay (over 36 millions), medicine ( $3\frac{1}{2}$  millions), hospital expenses ( $4\frac{1}{2}$

millions), funeral cost ( $3\frac{1}{2}$  millions), and fees of medical officers and control staff (8 millions). Comparisons with previous years show that not only the number of the insured members has increased considerably, but also the morbidity and mortality incidence has gone up. The sick pay has gone up by 300 per cent., funeral grants more than 300 per cent., and all other items approximately in the same ratio. Only the expenditure for the medical officers went up by a mere 30 per cent. This explains why such an unrest prevails among the physicians of these clubs, and why a prolonged strike is now in force. For about five weeks, none of the clubs in Vienna have been able to provide medical aid for their members. All their physicians have refused to work under the old conditions, and have demanded payment at a rate corresponding to the present evaluation and depreciation of the currency. This being refused, they "struck," and now receive and see the members of clubs only on the same terms as their other private patients. It must be understood that the working classes have obtained wages corresponding nearly to the drop of the currency rates. The outcome of the conflict between the two parties is of such serious import to the profession—it will decide whether the physician will be "proletarized" or not—that the 4,800 physicians are backed by the entire profession and the hospitals in their attitude.

#### Vital Statistics for 1920

There lived in Vienna, Jan. 31, 1920, 1,842,105 persons, of whom during that year there died 44,412, including the new-born and still-born. Out of this number, 1,250 deaths were due to trauma (suicide, accidents, manslaughter). That year 26,984 children were born alive, 1,020 dead. More than 30,000 marriages were registered. While 5,260 children died before the age of 1 year, 9,088 persons were more than 70 years of age at death. The population of the entire Austrian republic on that date was 6,067,073, so that Vienna alone had a trifle more than 30 per cent. Among the entire population, there were registered 87,600 marriages. The number of births was 145,240, of which 4,810 were stillbirths. Nearly 24,000 children died before completing their first year. These figures show that Vienna alone is responsible for the saving of a great many persons less than 1 year of age or more than 70; but it has less than its percentage of births.

#### Report of American Relief Administration in Austria

The medical Report of the American Relief Administration, which has just been published, shows what a tremendous amount of charity work has been done by private enterprises of American benefactors in this country. The physicians state that 307,000 of the 390,000 schoolchildren living in Vienna were underfed, and that of a total of 1,182,000 children in Austria less than 15 years of age, 930,000 had to be classified as underfed. Of these, 400,000 were synchronously fed by the American Relief Administration. Gradually, it was possible to reduce the number to 200,000 and this number will remain stationary until June, 1922, when the relief measures will terminate. No less than 35,665 tons of food articles of high nutritive value, worth \$10,000,000, were used from May, 1919, until September, 1921. The feeding was placed on a scientific basis by using Pirquet's new system, thus producing an increase of weight and general physical development up to 24 per cent. of the original condition. The relief will in future be given exclusively to children in towns and industrial districts, since the rural population is not only well off in all respects now, but even better than at any time before the war. Still the conditions in towns are far from satisfactory, and necessitate not only free feeding but the distribution of warm clothing. It is hoped that in about half a year Austria will be in a position to find its own food for these children.



THE REFERENDUM ON THE USE OF ALCOHOL IN THE PRACTICE OF MEDICINE

FINAL REPORT

Questionnaires were sent to 53,900 physicians, representing 37 per cent. of the physicians of the United States, and 31,115, or 58 per cent., were returned.

Of physicians indicating form of practice, 25,889, or 83 per cent., were general practitioners; 2,401 were engaged in the surgical specialties, and 2,825 in the nonsurgical specialties.

*Do you regard whisky as a necessary therapeutic agent in the practice of medicine?*

The total vote in all states on whether or not whisky was necessary in the treatment of disease was 30,843; 15,625, or 51 per cent., answered yes, and 15,218, or 49 per cent., answered no.

*Do you regard beer as a necessary therapeutic agent in the practice of medicine?*

The total number of votes cast for beer was 30,597, and of these 22,663, or 74 per cent., were negative, and 7,934, or 26 per cent., were affirmative.

*Do you regard wine as a necessary therapeutic agent in the practice of medicine?*

The vote on wine was: no, 20,648, or 68 per cent., and yes, 9,803, or 32 per cent.

COMMENT ON QUESTIONS AS TO NECESSITY OF WHISKY, BEER AND WINE

The vote in twenty states was affirmative for whisky, while in twenty-nine the majority vote was negative. In all the states, however, the majority vote in regard to beer and wine was negative. The vote in the larger cities and rural communities is interesting. In regard to the necessity of whisky as a therapeutic agent, 58 per cent. of the vote in cities is in the affirmative, while of the vote in the rural districts, 54 per cent. is in the negative. For wine and beer, however, the majority in both cities and rural districts is decidedly in the negative, the percentage of negative votes being higher in the rural districts.

A table shows the vote on whisky, beer and wine by districts. The two districts comprising, respectively, the North Atlantic and the South Atlantic states give a majority vote affirming that whisky is essential as a therapeutic agent, while in the three districts comprising, respectively, the North Central, South Central and Western states, the majority vote is in the negative. In all districts alike the majority vote in regard to beer and wine is decidedly in the negative.

In the fifty largest cities there was a total of 8,855 votes on the question as to the necessity of whisky as a therapeutic agent. Of these, 5,320, or 60 per cent., were that whisky was necessary, while 3,535 were in the negative. In regard to beer, however, the vote was to the contrary, a total of 5,903 voting that it was not necessary, while only 2,854, or 33 per cent., voted that it was necessary. Of wine also the majority vote was negative, there being 4,939, or 57 per cent., negative, while 3,782, or 43 per cent., were affirmative.

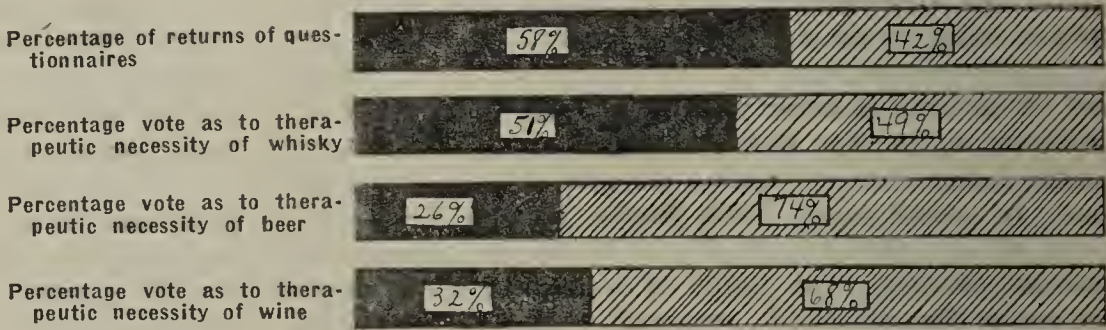
Thirty-two of the fifty largest cities expressed a majority vote affirming that whisky was necessary as a therapeutic agent, while seven gave a majority vote favoring wine, and

only two gave a majority vote favoring beer, these two cities being Jersey City, N. J., and Scranton, Pa.

*If "yes," in what diseases or conditions do you regard whisky, beer or wine as necessary?*

No tabulation of the replies to these three questions is presented. When the replies began to come in, an attempt was made to tabulate the answers. Diseases were classified in main groups, a number given to each group, and the numbers indicated on the questionnaires by the physicians in charge of the tabulation. After several thousand replies had been passed on, it became clear that nothing further would be gained by tabulating all of the replies on this point, since the relative numbers of those using alcoholic beverages in certain diseases remained the same, whether 100, 500 or 1,000 questionnaires were concerned.

Of those who considered whisky necessary in the practice of medicine, a large majority (about 75 per cent.) used it in pneumonia, influenza and other acute infectious diseases.



GRAPH SHOWING PERCENTAGE OF RETURNS AND PERCENTAGE VOTE ON THERAPEUTIC NECESSITY OF WHISKY, BEER AND WINE. BLACK: YES. SHADED: NO.

About 35 per cent. believed it necessary in the treatment of diseases incident to old age and in general debility. About 10 per cent. considered whisky of value in convalescence, diabetes, heart failure and shock. Scattering replies included anemia, asthma, catarrh, cancer, phenol (carbolic acid) poisoning, colds, dyspepsia, dysmenorrhea, neuritis, rheumatism, snake bite, heart disease, blood pressure disturbances, toxemia of pregnancy, uremia, alcoholism and insomnia. Particularly impressive was the sincerity of the belief of a large number of physicians in the therapeutic efficacy of whisky in a limited number of diseases, but equally impressive was the expressed belief of a limited number of physicians of its necessity in a large number of diseases. Some physicians in our largest cities included large and varied lists of conditions. One hardly expected physicians in metropolitan cities to lay emphasis on the value of whisky in snake bites, since the only snakes available are carefully guarded in zoological gardens. It was clear, however, that the therapeutic teaching in our colleges and in our textbooks as to the value of whisky had had a definite influence; authorities for the use of whisky in the diseases mentioned were cited by many physicians in their comments on the questionnaire. On the whole, these replies yield a vast amount of information as to the general practice of physicians using whisky therapeutically.

The conditions chiefly cited by those recommending beer were lactation, convalescence, debility, dyspepsia, anemia and old age.



On this question, 8,622 physicians, or 39 per cent., stated that they held federal permits, and 13,591, or 61 per cent., replied that they did not hold federal permits. It is especially interesting to note that in many states where a physician cannot use a federal permit on account of restrictions of the state law, a certain number of physicians hold such permits. As will be noted, many of those who do not hold permits did not so indicate, so that while there are 31,115



# RESULTS OF REFERENDUM ON THE THERAPEUTIC USE OF ALCOHOL

## RESULTS BY STATES

Marginal No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Alabama	2,405	380	2,450	6,766	1,817	1,729	262	1,689	1,281	3,406	553	10,651	4,446	3,536	2,550	3,323	2,001	1,105	2,364	5,959	4,593	2,628	1,761	5,921	620	1,965	147
Arizona	768	173	640	2,561	615	714	113	444	464	1,040	227	4,245	1,539	1,488	1,036	1,034	754	471	920	2,405	1,751	1,254	549	1,947	263	870	75
Arkansas	431	110	348	1,514	370	394	74	232	272	502	161	2,141	966	1,004	741	544	351	271	500	1,343	1,036	820	315	1,098	192	565	51
California	56	64	54	59	60	55	65	52	59	48	71	50	63	67	73	53	51	58	54	56	59	65	58	56	73	65	68
Colorado	382	94	319	1,193	296	297	62	187	249	431	146	1,752	811	894	673	492	324	235	407	1,019	869	648	291	903	172	479	41
Connecticut	30	7	12	157	31	43	7	17	18	35	4	199	66	63	30	18	21	17	48	155	77	94	13	95	10	48	7
Delaware	19	9	17	164	43	54	5	23	5	36	11	190	89	47	38	34	36	19	45	169	90	78	11	100	10	38	8
Dist. Columbia																											
Florida																											
Georgia																											
Idaho																											
Illinois																											
Indiana																											
Iowa																											
Kansas																											
Kentucky																											
Louisiana																											
Maine																											
Maryland																											
Massachusetts																											
Michigan																											
Minnesota																											
Mississippi																											
Missouri																											
Montana																											
Nebraska																											
Nevada																											
Number of physicians.....	2,405	380	2,450	6,766	1,817	1,729	262	1,689	1,281	3,406	553	10,651	4,446	3,536	2,550	3,323	2,001	1,105	2,364	5,959	4,593	2,628	1,761	5,921	620	1,965	147
Questionnaires sent.....	768	173	640	2,561	615	714	113	444	464	1,040	227	4,245	1,539	1,488	1,036	1,034	754	471	920	2,405	1,751	1,254	549	1,947	263	870	75
Questionnaires returned.....	431	110	348	1,514	370	394	74	232	272	502	161	2,141	966	1,004	741	544	351	271	500	1,343	1,036	820	315	1,098	192	565	51
Percentage of returns.....	56	64	54	59	60	55	65	52	59	48	71	50	63	67	73	53	51	58	54	56	59	65	58	56	73	65	68
General practitioners.....	382	94	319	1,193	296	297	62	187	249	431	146	1,752	811	894	673	492	324	235	407	1,019	869	648	291	903	172	479	41
Surgeons.....	30	7	12	157	31	43	7	17	18	35	4	199	66	63	30	18	21	17	48	155	77	94	13	95	10	48	7
Specialists.....	19	9	17	164	43	54	5	23	5	36	11	190	89	47	38	34	36	19	45	169	90	78	11	100	10	38	8
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?																											
Yes.....	161	55	150	749	154	238	47	149	132	219	70	1,149	362	476	289	252	199	153	310	726	470	532	133	581	109	272	30
No.....	266	53	196	756	214	156	26	83	138	281	90	954	598	522	448	288	178	115	190	602	554	474	182	509	81	291	19
Do you regard beer as a necessary therapeutic agent in the practice of medicine?																											
Yes.....	102	29	73	365	73	119	19	83	72	114	38	608	187	220	150	131	109	71	154	359	247	176	70	289	55	165	14
No.....	321	81	268	1,125	292	271	55	145	192	381	120	1,428	765	775	589	405	266	196	334	958	769	626	242	793	133	394	35
Do you regard wine as a necessary therapeutic agent in the practice of medicine?																											
Yes.....	98	37	91	569	83	153	19	106	84	112	46	804	211	242	165	145	146	73	216	496	273	174	66	404	82	162	21
No.....	317	73	252	920	274	235	55	119	180	380	113	1,283	740	751	563	375	231	194	276	822	739	618	240	676	105	391	29
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?																											
Yes.....	95	34	87	291	63	96	27	49	57	94	49	405	183	213	157	109	69	62	119	218	245	115	52	244	48	133	17
No.....	317	74	247	1,158	287	283	42	170	197	377	105	1,589	737	760	544	415	298	180	360	1,072	756	679	250	808	135	396	31
How many times have you found it advisable to prescribe these liquors in a month?																											
Whisky: No. of physicians stating times advisable.....	98	25	89	638	112	169	16	101	84	137	42	799	163	330	158	172	157	83	227	549	310	283	75	406	91	157	11
No. of physicians stating no times advisable.....	245	42	124	637	187	130	52	51	120	251	90	704	548	494	449	270	159	128	139	374	576	425	177	473	45	271	22
Beer: No. of physicians stating times advisable.....	46	10	30	160	27	34	4	20	33	50	22	204	65	95	69	37	33	31	47	74	104	59	28	101	28	85	5
No. of physicians stating no times advisable.....	267	53	147	992	235	201	39	86	143	295	106	1,091	664	647	487	391	267	168	283	792	690	571	208	670	78	303	25
Wine: No. of physicians stating times advisable.....	40	15	43	415	41	82	5	66	34	49	24	308	64	95	74	54	78	37	101	286	121	80	26	203	61	83	8
No. of physicians stating no times advisable.....	272	54	138	812	224	173	38	66	138	295	101	1,030	655	651	489	374	226	163	205	582	676	552	214	611	61	301	25
Do you hold a federal permit?																											
Yes.....	23	4	33	662	66	133	...	103	27	8	4	1,036	27	198	26	141	167	11	193	660	161	273	30	343	98	20	1
No.....	152	27	159	636	213	216	21	93	112	204	41	773	280	513	197	325	193	84	242	504	577	418	127	610	71	155	10
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?																											
Yes (limit not specified).....	77	19	70	240	66	80	4	49	61	86	33	235	121	168	162	52	56	34	71	231	184	96	73	166	48	89	4
Restricted absolutely.....	97	12	70	146	51	13	11	6	33	105	24	243	249	150	170	97	28	37	26	53	119	115	58	121	6	106	7
1 to 50 prescriptions.....	29	11	38	153	26	18	7	5	20	25	14	242	89	116	74	70	33	15	18	93	126	120	25	97	19	48	3
51 to 100 prescriptions.....	58	11	34	320	62	53	8	33	28	67	24	417	114	114	91	86	68	41	75	299	183	175	33	178	25	79	8
More than 100 prescriptions.....	4	...	5	26	2	1	1	4	6	1	1	61	10	13	5	4	8	3	5	41	16	11	5	23	...	...	...
Total.....	265	58	212	885	207	165	31	97	148	284	96	1,198	583	621	502	309	193	130	195	717	628	517	194	555	98	323	22
No restriction.....	143	51	118	559	130	216	40	120	109	189	61	827	291	355	204	214	180	122	285	583	374	271	109	478	86	202	25
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?																											
Yes.....	271	56	241	875	217	180	35	106	165	309	99	1,163	650	629	521	328	175	142	188	665	633	529	202	612	115	340	28
No.....	135	52	101	560	188	196	38	113	94	1																	



RESULTS BY STATES--Continued

Marginal No.	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Cities	Percentage	Rural	Percentage	Grand Total	Percentage	Marginal No.
1	641	3,260	529	16,284	2,236	556	8,092	2,622	1,145	11,348	778	1,452	658	3,328	6,205	496	594	2,545	1,797	1,717	2,750	267	61,413	145,608	1	84,195	..	145,608	1
2	300	1,504	217	5,375	885	310	2,732	920	478	4,430	296	508	314	1,025	2,042	229	253	932	715	746	1,194	145	21,204	53,900	..	32,696	..	53,900	2
3	186	837	137	3,083	445	193	1,666	553	282	2,575	161	259	203	526	1,196	133	154	473	434	444	707	92	11,311	31,115	..	19,804	..	31,115	3
4	62	56	63	57	50	62	61	60	59	58	54	51	65	51	59	58	61	51	61	60	59	63	53	58	..	61	..	58	4
5	163	720	133	2,324	370	170	1,361	477	237	2,143	129	229	188	444	1,041	112	138	407	362	401	593	86	7,934	25,889	..	17,955	91	25,889	5
6	10	50	1	348	25	10	104	42	19	157	17	13	7	37	69	8	8	32	41	26	51	4	1,642	2,401	4	759	4	2,401	6
7	13	67	3	411	50	13	201	34	26	275	15	17	8	45	86	13	8	39	31	17	63	2	1,735	2,855	5	1,090	5	2,855	7
8	117	520	58	2,015	182	92	721	196	121	1,414	96	117	80	224	491	64	79	270	201	206	342	52	6,504	15,625	46	9,121	46	15,625	8
9	68	308	76	1,041	262	98	931	351	161	1,138	65	140	120	296	697	68	74	202	225	234	359	40	4,705	15,218	54	10,513	54	15,218	9
10	55	273	24	1,067	72	49	328	117	65	611	55	59	44	90	266	31	27	112	112	106	188	31	3,481	7,934	23	4,453	23	7,934	10
11	128	550	110	1,939	370	141	1,316	431	215	1,930	104	196	157	422	905	97	124	357	315	328	509	60	7,610	22,663	77	15,053	77	22,663	11
12	69	354	37	1,416	68	56	418	117	78	817	65	53	49	101	315	37	46	124	126	123	221	35	4,549	9,803	27	5,254	27	9,803	12
13	112	460	95	1,579	367	134	1,222	423	203	1,706	95	202	150	409	867	89	103	340	297	308	476	55	6,484	20,648	73	14,164	73	20,648	13
14	37	181	34	665	83	54	324	116	74	416	34	54	50	117	276	35	31	102	123	114	116	31	2,268	6,423	22	4,155	22	6,423	14
15	121	621	98	2,366	345	131	1,288	419	199	2,076	122	198	144	389	882	95	114	358	287	306	567	59	8,457	23,352	78	14,895	78	23,352	15
16	70	361	27	1,443	108	49	535	102	63	1,132	82	55	43	136	301	28	62	201	136	116	294	28	4,703	10,884	39	6,181	39	10,884	16
17	62	303	72	879	223	102	954	315	145	1,024	46	138	103	268	636	69	59	188	214	225	319	43	3,994	13,610	61	9,616	61	13,610	17
18	12	76	8	346	31	25	139	54	26	206	14	15	22	37	104	10	4	32	62	33	84	13	1,145	2,854	12	1,709	12	2,854	18
19	93	470	81	1,400	286	119	1,278	337	164	1,656	79	154	115	284	741	77	83	341	246	306	479	48	6,095	18,686	88	12,591	88	18,686	19
20	25	145	14	675	20	31	201	50	33	394	35	12	19	42	117	11	22	46	71	49	155	14	2,254	4,674	17	2,420	17	4,674	20
21	85	425	78	1,229	298	114	1,210	334	162	1,523	69	156	112	286	721	77	73	324	239	291	427	44	5,381	17,397	83	12,016	83	17,397	21
22	61	357	8	1,367	13	11	349	17	9	1,123	100	9	9	36	121	2	67	164	10	15	308	18	4,439	8,622	31	4,193	31	8,622	22
23	100	365	61	1,223	175	61	982	182	56	1,114	55	148	85	225	827	32	72	257	112	180	310	51	4,340	13,591	69	9,251	69	13,591	23
24	34	105	26	382	66	50	271	99	54	338	20	52	31	97	208	27	42	50	90	77	85	10	1,575	4,789	17	3,214	17	4,789	24
25	4	41	12	117	79	2	213	136	52	185	8	52	25	85	197	23	7	37	63	65	84	15	785	3,656	15	2,871	15	3,656	25
26	7	41	11	171	36	18	177	53	39	228	11	12	30	57	96	13	10	39	43	37	103	6	873	2,766	8	3,070	8	2,766	9
27	21	144	21	544	49	35	312	55	34	451	27	27	27	63	191	19	23	118	61	56	155	7	2,114	5,184	16	3,070	16	5,184	27
28	..	4	2	55	7	1	6	6	3	24	1	3	1	5	21	1	..	7	8	2	21	1	179	436	2	257	2	436	28
29	66	335	72	1,269	237	106	979	349	182	1,226	67	146	114	307	713	83	83	251	265	237	447	39	5,526	16,831	60	11,305	60	16,831	29
30	111	475	57	1,687	185	72	616	176	87	1,246	95	98	85	187	447	38	66	214	134	181	245	52	3,205	12,896	40	7,691	40	12,896	30
31	76	319	76	1,241	277	103	1,014	360	193	1,221	67	167	117	340	750	90	87	256	293	279	423	43	5,527	17,266	62	11,739	62	17,266	31
32	98	490	55	1,713	151	76	583	167	84	1,257	30	85	77	162	402	34	63	208	122	149	255	47	5,217	12,561	38	7,344	38	12,561	32



# RESULTS OF REFERENDUM ON THE THERAPEUTIC USE OF ALCOHOL

## RESULTS IN FIFTY LARGE CITIES

Marginal No.	Greater N. Y. 5,621,151	Chicago 2,701,703	Philadelphia 1,823,158	Detroit 993,739	Cleveland 796,836	St. Louis 772,897	Boston 748,060	Baltimore 733,826	Pittsburgh 588,193	Los Angeles 576,673	San Francisco 508,410	Buttalo 506,775	Milwaukee 457,147	Washington 437,571	Newark 414,216	Cincinnati 401,247	New Orleans 387,219	Minneapolis 380,582	Kansas City, Mo. 324,410	Seattle 315,652	Indianapolis 314,194	Jersey City 297,864	Rochester 295,750	Portland, Ore. 258,288	Denver 256,369	Toledo 243,109	Marginal No.
1	9,447	5,365	3,467	1,551	1,246	1,754	2,095	1,421	1,231	1,585	1,312	857	654	1,689	538	863	646	608	919	586	709	250	466	530	783	433	1
2	2,759	1,983	1,224	509	412	531	1,103	350	491	557	469	313	222	444	195	276	238	298	328	187	304	95	151	152	231	160	2
3	1,561	866	631	288	226	280	452	266	298	320	240	163	115	232	112	128	98	184	180	111	156	44	90	99	123	85	3
4	57	43	56	55	55	53	41	76	61	57	51	52	52	52	57	46	41	62	55	59	51	46	60	65	53	53	4
5	1,063	641	500	214	164	192	294	192	226	216	152	124	83	187	86	80	59	113	119	82	105	39	59	71	81	58	5
6	230	135	65	34	21	46	82	42	32	52	47	17	18	17	9	14	15	41	34	19	24	5	14	11	20	12	6
7	268	90	116	40	41	42	76	32	40	52	41	22	14	28	17	34	24	39	27	10	27	..	17	17	22	15	7
8	1,120	535	455	145	116	180	250	163	177	188	149	115	72	149	79	62	58	71	109	56	75	35	44	41	53	43	8
9	429	323	221	140	107	99	195	98	118	131	90	46	37	83	32	65	38	108	70	51	81	9	44	58	69	42	9
10	640	330	215	95	38	96	124	85	60	101	82	71	46	83	39	36	30	35	60	35	43	24	22	21	26	21	10
11	879	510	453	186	184	183	319	176	235	219	133	88	64	145	71	91	66	146	116	74	111	20	66	76	97	62	11
12	856	413	290	109	71	142	185	123	96	148	120	89	58	106	51	40	43	36	87	37	45	28	33	25	32	22	12
13	634	423	369	172	151	132	258	142	198	169	116	71	52	119	59	87	55	143	92	70	108	16	52	74	88	61	13
14	334	158	135	73	37	66	71	65	39	75	57	51	31	49	19	21	14	17	39	34	39	17	13	22	17	22	14
15	1,129	622	510	199	183	201	363	193	248	231	164	107	79	170	86	103	78	161	132	66	113	25	71	72	100	61	15
16	767	365	363	89	105	124	178	128	145	151	147	86	67	101	53	39	50	69	88	34	25	21	42	20	40	32	16
17	334	226	194	148	90	89	131	70	110	112	55	48	30	51	30	70	32	85	59	48	78	13	28	52	59	48	17
18	224	91	70	44	9	34	19	33	23	38	34	24	22	20	14	9	5	5	22	13	10	7	4	10	4	11	18
19	540	371	365	161	177	142	268	121	193	171	132	79	58	86	54	99	69	128	89	57	92	22	45	56	83	64	19
20	434	151	140	54	25	70	98	66	52	108	85	38	48	66	23	12	27	13	61	17	16	12	11	8	11	12	20
21	457	337	315	157	157	120	190	104	171	134	95	73	42	66	49	93	50	122	74	54	87	18	41	57	76	63	21
22	750	520	356	30	97	120	224	113	157	148	157	98	69	103	61	30	42	76	76	3	8	14	37	4	26	18	22
23	533	232	233	162	104	124	171	114	97	124	46	42	28	93	38	73	39	78	50	21	46	22	36	20	72	52	23
24	188	75	92	42	38	42	70	47	36	39	36	20	11	49	13	11	13	28	31	14	28	8	11	22	28	15	24
25	31	56	18	25	11	7	25	3	9	21	9	4	6	6	7	8	4	21	14	18	20	2	3	23	13	8	25
26	57	91	34	35	27	24	49	3	21	33	18	6	8	5	2	12	6	34	14	8	15	2	10	10	7	5	26
27	236	188	115	45	57	42	92	39	68	84	64	33	24	33	19	29	21	56	35	23	22	2	24	9	21	21	27
28	25	29	9	10	..	8	15	3	3	5	4	3	4	4	..	..	1	3	6	2	..	..	..	1	1	..	28
29	527	439	268	157	133	123	242	95	137	182	131	66	53	97	41	60	45	142	100	65	85	14	48	65	70	49	28
30	959	367	384	121	86	144	205	159	144	127	102	90	61	120	68	58	50	37	74	33	54	29	37	27	34	31	30
31	508	415	239	150	133	122	209	90	141	180	119	67	44	106	45	62	33	137	108	74	104	13	44	69	74	52	31
32	976	415	406	127	84	140	215	158	141	127	108	90	64	113	65	53	57	38	62	29	45	28	40	27	46	31	32

Do you hold a federal permit?  
 Yes .....  
 No .....  
 The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?  
 Yes (limit not specified).....  
 Restricted absolutely .....  
 1 to 50 prescriptions.....  
 51 to 100 prescriptions.....  
 More than 100 prescriptions.....  
 Total .....  
 No restriction .....  
 In your opinion, should physicians be restricted in prescribing whisky, beer and wine?  
 Yes .....  
 No .....



# RESULTS IN FIFTY LARGE CITIES—Continued

Marginal No.	Providence 237,595	Columbus 237,031	Louisville 234,891	St. Paul 234,595	Oakland 216,361	Akron 208,435	Atlanta 200,616	Omaha 191,601	Worcester 179,754	Birmingham 178,270	Syracuse 171,717	Richmond 171,667	New Haven 162,519	Memphis 162,351	San Antonio 161,379	Dallas 158,976	Dayton 152,539	Bridgeport 143,538	Houston 138,076	Hartford 138,036	Seranton 137,783	Grand Rapids 137,634	Paterson 135,866	Youngstown 132,338	Grand Total 25,478,649	Percentage	Marginal No.
1	441	546	618	370	353	274	583	445	276	316	357	334	318	428	289	385	284	174	291	256	208	273	148	173	49,178	..	1
2	164	201	152	187	127	95	167	212	98	114	130	112	131	116	85	121	98	62	105	99	68	91	52	68	16,823	34	2
3	97	107	76	84	68	56	80	121	61	52	84	59	71	66	53	60	50	32	60	60	32	39	28	40	8,934	53	3
4	59	53	50	45	54	59	48	58	62	45	65	53	54	57	62	50	51	52	57	61	47	43	54	59	.....	..	4
5	74	66	52	51	50	39	49	76	42	32	68	45	45	36	40	84	37	21	44	35	23	23	19	29	6,220	70	5
6	15	10	8	16	10	6	18	24	6	14	14	9	13	14	6	12	6	5	8	11	5	8	7	4	1,305	14	6
7	8	31	16	17	8	11	13	21	13	6	12	5	13	16	7	14	7	6	8	14	4	8	2	7	1,409	16	7
8	59	49	48	42	26	25	36	79	33	13	40	36	39	27	32	26	19	19	25	32	23	13	15	19	5,320	60	8
9	38	58	28	41	42	31	44	41	28	38	43	23	32	37	20	33	30	13	35	28	9	25	13	21	3,535	40	9
10	38	22	25	25	13	8	21	46	14	10	20	10	22	10	18	12	10	11	10	14	17	4	7	9	2,854	33	10
11	58	34	50	54	54	47	59	72	45	40	63	48	47	55	34	46	39	21	50	45	15	35	21	31	5,903	67	11
12	41	31	33	24	24	13	23	51	19	6	27	14	24	13	24	17	12	13	18	19	22	9	10	10	3,782	43	12
13	55	75	40	54	42	42	56	63	41	44	56	44	45	51	29	42	37	19	41	40	9	27	17	29	4,989	57	13
14	23	13	19	16	4	7	5	25	8	6	15	7	16	9	19	13	4	8	21	5	7	5	5	11	1,786	21	14
15	69	88	53	63	59	47	63	81	52	44	68	49	51	52	33	44	45	24	39	54	24	33	21	29	6,652	79	15
16	52	38	36	36	29	12	15	38	23	13	26	30	26	15	25	19	15	14	14	23	20	8	11	18	3,885	57	16
17	29	57	20	36	30	37	37	46	20	34	45	19	30	34	15	24	31	15	33	21	6	27	12	20	2,968	43	17
18	12	5	6	7	5	5	7	26	3	6	4	..	8	5	10	6	3	4	4	2	9	1	4	5	946	17	18
19	50	76	48	50	44	44	45	54	38	37	67	43	39	39	20	29	41	22	38	36	12	29	17	31	4,671	83	19
20	24	14	16	12	16	8	6	25	8	3	13	6	13	5	13	7	7	3	5	12	12	1	4	6	1,887	32	20
21	44	68	38	46	38	41	45	54	34	38	59	38	36	38	18	28	38	23	36	31	12	29	17	30	4,081	68	21
22	66	30	41	41	31	4	2	8	22	1	27	35	22	2	15	15	5	12	4	19	13	7	15	9	3,783	53	22
23	30	54	23	34	30	40	23	32	25	14	42	18	42	22	27	36	33	17	39	36	15	24	12	22	3,390	47	23
24	9	10	4	14	8	7	21	23	9	9	7	3	15	9	10	7	4	3	12	9	..	8	5	6	1,219	14	24
25	2	11	6	8	10	6	12	14	2	15	4	3	3	10	1	4	6	3	5	3	..	5	..	6	511	6	25
26	6	14	11	11	9	8	7	9	4	5	10	6	4	10	3	10	3	..	6	3	3	6	2	3	630	8	26
27	19	22	12	23	18	9	8	19	18	6	26	21	6	10	10	10	14	8	11	17	6	7	4	9	1,705	20	27
28	..	..	1	..	3	..	..	..	..	..	2	..	..	..	..	1	..	..	..	1	..	..	..	..	144	2	28
29	36	57	34	56	48	30	48	65	33	35	49	33	28	39	24	32	27	14	34	33	9	26	11	24	4,259	50	29
30	59	40	38	26	17	26	26	46	25	10	31	25	38	20	27	26	28	18	26	26	22	13	16	15	4,240	50	30
31	38	66	38	53	42	34	49	62	33	35	51	35	33	41	31	36	29	13	35	32	8	30	12	26	4,200	50	31
32	56	33	33	22	19	20	27	52	25	8	30	23	34	22	21	21	21	20	23	27	24	9	15	13	4,230	50	32



questionnaires tallied, only some 22,000 replies cover the question of federal permit. Estimated on the proportions of 8,622 federal permits among 31,115 physicians, it might be said that there are in the United States approximately 35,000 physicians who hold federal permits, or, relatively speaking, between 25 and 30 per cent. of the practicing physicians of the country.

VOTE BY SECTIONS OF THE UNITED STATES

	Whisky				Beer				Wine			
	Yes		No		Yes		No		Yes		No	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
North Atlantic States:												
Pennsylvania.....	1,414	55	1,138	45	611	24	1,930	76	817	32	1,706	68
New Jersey.....	520	63	308	37	273	33	550	67	354	43	460	57
New York.....	2,015	66	1,041	34	1,067	35	1,939	65	1,416	47	1,579	53
Connecticut.....	238	60	156	40	119	31	271	69	153	39	235	61
Rhode Island.....	96	60	65	40	55	35	104	65	65	41	95	59
Massachusetts.....	726	55	602	45	359	27	958	73	496	38	822	62
Vermont.....	79	52	74	48	27	18	124	82	46	31	103	69
New Hampshire.....	117	63	68	37	55	30	128	70	69	38	112	62
Maine.....	153	57	115	43	71	27	196	73	73	27	194	73
Total.....	5,358	60	3,567	40	2,637	30	6,200	70	3,489	40	5,306	60
South Atlantic States:												
Florida.....	132	49	138	51	72	27	192	73	84	32	180	68
Georgia.....	219	44	281	56	114	23	381	77	112	23	380	77
South Carolina.....	117	46	140	54	59	23	196	77	53	21	202	79
North Carolina.....	182	41	262	59	72	16	370	84	68	16	367	84
West Virginia.....	206	47	234	53	106	24	328	76	123	29	308	71
Virginia.....	270	57	202	43	112	24	357	76	124	27	340	73
District of Columbia	149	64	83	36	83	36	145	64	106	47	119	53
Maryland.....	310	62	190	38	154	32	334	68	216	44	276	56
Delaware.....	47	64	26	36	19	26	55	74	19	26	55	74
Total.....	1,631	51	1,556	49	791	25	2,358	75	905	29	2,227	71
North Central States:												
Kansas.....	289	39	448	61	150	20	589	80	165	23	563	77
Nebraska.....	272	48	291	52	165	30	394	70	162	29	391	71
South Dakota.....	80	40	120	60	44	22	157	78	49	25	150	75
North Dakota.....	92	48	98	52	49	26	141	74	56	29	134	71
Missouri.....	581	53	509	47	289	27	793	73	404	37	676	63
Iowa.....	476	48	522	52	220	22	775	78	242	24	751	76
Minnesota.....	332	41	474	59	176	22	626	78	174	22	618	78
Wisconsin.....	342	49	359	51	188	27	509	73	221	32	476	68
Michigan.....	470	46	554	54	247	24	769	76	273	27	739	73
Illinois.....	1,149	55	954	45	668	31	1,428	69	804	38	1,288	62
Indiana.....	362	38	598	62	187	20	765	80	211	22	740	78
Ohio.....	721	44	931	56	328	20	1,316	80	418	25	1,222	75
Total.....	5,166	47	5,858	53	2,711	25	8,262	75	3,179	29	7,748	71
South Central States:												
Oklahoma.....	196	36	351	64	117	21	431	79	117	22	423	78
Arkansas.....	150	43	196	57	73	21	268	79	91	27	252	73
Texas.....	491	41	697	59	266	23	905	77	315	27	867	73
Louisiana.....	199	53	178	47	109	29	266	71	146	39	231	61
Mississippi.....	133	42	182	58	70	22	242	78	66	22	240	78
Alabama.....	161	38	266	62	102	24	321	76	98	24	317	76
Tennessee.....	224	43	296	57	90	18	422	82	101	19	409	81
Kentucky.....	252	47	288	53	131	24	405	76	145	28	375	72
Total.....	1,806	42	2,454	58	958	23	3,200	77	1,079	26	3,114	74
Western States:												
California.....	749	50	756	50	365	24	1,125	76	569	38	920	62
Oregon.....	121	43	161	57	65	23	215	77	78	28	203	72
Washington.....	201	47	225	53	112	26	315	74	126	30	297	70
Idaho.....	70	44	90	56	38	24	120	76	46	29	113	71
Nevada.....	30	61	19	39	14	29	35	71	21	42	29	58
Utah.....	64	48	68	52	31	24	97	76	37	29	89	71
Arizona.....	55	51	53	49	29	26	81	74	37	34	73	66
New Mexico.....	58	43	76	57	24	18	110	82	37	28	95	72
Colorado.....	154	42	214	58	73	20	292	80	83	23	274	77
Wyoming.....	52	57	40	43	31	34	60	66	35	39	55	61
Montana.....	109	57	81	43	55	29	133	71	82	44	105	56
Total.....	1,663	48	1,783	52	837	24	2,583	76	1,151	34	2,253	66
Grand total.....	15,625	51	15,218	49	7,934	26	22,663	74	9,803	32	20,648	68

restrictions. Those who favored restrictions but did not specify any particular limit numbered 4,789, or 16 per cent. The physicians who stated that they would restrict prescriptions absolutely, in other words, who were opposed to permitting medical men to prescribe alcoholic liquors in any form, numbered 3,656, or 12 per cent. Then there were 2,766 physicians, or 9 per cent., who would limit the number of prescriptions to from 1 to 50 in three months; 5,184, or 18 per cent., suggested limiting the prescriptions to from 51 to 100 in three months, and 436, or 2 per cent., expressed the opinion that physicians should be permitted to write more than 100 prescriptions in three months.

The figures just given are for the entire country. Separating the replies on the question into two groups, one composed of cities of 50,000 population or over, and the other, the balance of the country, we get the following facts: In the cities, 51 per cent. of the physicians were for restrictions of some sort, as compared with 60 per cent. in the rest of the country, while 49 per cent. of the city physicians were opposed to restrictions, as compared with 40 per cent. in the rest of the country. Of the physicians who were in favor of restrictions but would not specify any limit, 15 per cent. were in the cities and 17 per cent. in the remainder of the country. Those who would restrict prescribing absolutely comprised 7 per cent. in the cities, as compared with 15 per cent. in the rest of the country. There were 8 per cent. of the city physicians who would limit the number of prescriptions to from 1 to 50 in three months, while 10 per cent. of physicians in the remainder of the country took the same stand. Among the urban physicians, 19 per cent. would limit the number of prescriptions in three months to from 51 to 100, while 16 per cent. of the physicians in the remainder of the country gave the same limit. The percentage of physicians who expressed the opinion that more than 100 prescriptions should be permitted in three months was the same in the cities as in the rest of the country, that is, 2 per cent.

With the facts just stated in mind, it is interesting to note that while in the *total* cities (together with the rest of the country) there were 2 per cent. of physicians who favored more than 100 prescriptions in three months, *individual* cities varied in this respect. In the largest city in the country (New York), the physicians who favored more than 100 prescriptions in three months constituted 1.7 per cent., while the physicians of the third city (Philadelphia) constituted 1.4 per cent. on the same point. In both the second city (Chicago) and the fourth city (Detroit), 3.6 per cent. of the physicians favored more than 100 prescriptions in three months, while 3.5 per cent. of the physicians of both the seventh city (Boston) and the nineteenth city (Kansas City, Mo.) also voted for more than 100 prescriptions. It is also worth noting that not one of the physicians in the fifth city (Cleveland) favored more than 100 prescriptions, and the same is true of Newark, Cincinnati, Indianapolis, Jersey City, Rochester and Toledo, all cities of more than 240,000.

*In your opinion should physicians be restricted in prescribing whisky, beer and wine?*

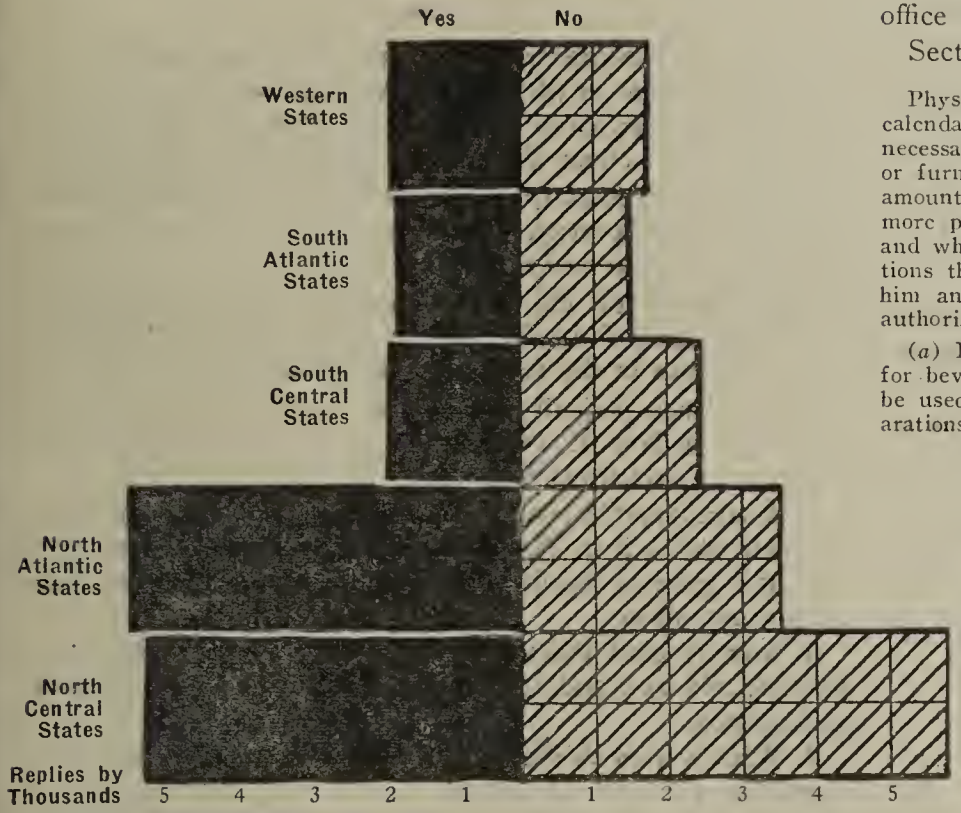
On this question 17,266 physicians, or 58 per cent., stated that physicians should be restricted in prescribing alcoholic

*The present regulations limit the number of prescriptions to 100 in three months. In your opinion should there be any limit to the number of prescriptions for alcoholic liquors a physician may write? If yes, what should the limit be?*

Of the 31,115 physicians who answered the questionnaire, 29,727, or 95.5 per cent., expressed an opinion on this question. Of these, 16,831, or 57 per cent., favored restrictions of some kind, while 12,896, or 43 per cent., were against any



liquors, and 12,561, or 42 per cent., stated that there should be no restrictions. Physicians of the rural districts were more inclined to favor restrictions than were those of the cities.



VOTE ON THERAPEUTIC NECESSITY OF WHISKY BY SECTIONS OF THE UNITED STATES.

If "yes," what restrictions should be made?

The forms of restriction suggested varied, but fell into several large groups. A large majority favor such restriction as is concerned under the Harrison Narcotic Law. Many favored further restriction in the number of prescriptions, and in the quantities prescribed. The great number believed that the present methods of regulation tended to violations which could be avoided by having the government take over the control of liquor traffic, selling alcoholic preparations only in sealed packages at a fixed price through government venders. From physicians living in border states came numerous favorable comments as to the Canadian laws of the provinces of Quebec and British Columbia. These laws are, however, temperance and not prohibition laws.

Comments

About one third of all of the physicians replying wrote comments on their questionnaires. These comments have been of great interest, and many have been published in the reports on the individual states, those selected typifying the large majority. The comments reveal a number of facts of great interest and importance. In practically every state, some physicians commented on the difficulty of obtaining alcohol for laboratory and office use, and it is clear that the regulations on this point are not thoroughly understood.

ALCOHOL FOR LABORATORY USE

A physician is entitled to two kinds of permits in reference to liquor and alcohol:

- (a) Permits to prescribe (prefaced by the letter J).
- (b) Permits to use (prefaced by the letter H).

It is evident, however, that the majority of the physicians who hold a "permit to prescribe" do not also hold a "permit to use." This most probably explains why so many commented on their inability to obtain grain alcohol for use in office and laboratory, either for compounding medicaments,

or for sterilization and technical purposes. As far as the National Prohibition Law is concerned, little difficulty should be experienced in obtaining an adequate supply of pure alcohol, provided it is used for the foregoing purposes at the office or laboratory.

Section 71, Regulation 60, reads, in part as follows:

Physicians may obtain not more than 6 quarts of liquor during any calendar year to be administered to their patients only in the quantities necessary to afford relief at the time of administering and may not sell or furnish the same to such persons or to any other persons. The total amount of spirituous liquor administered to any one patient, by one or more physicians, during any period of 10 days may not exceed 1 pint, and where such patient is also procuring spirituous liquor upon prescriptions through a retail pharmacist, the aggregate amount so procured by him and administered to him by a physician or physicians as herein authorized may not exceed such quantity.

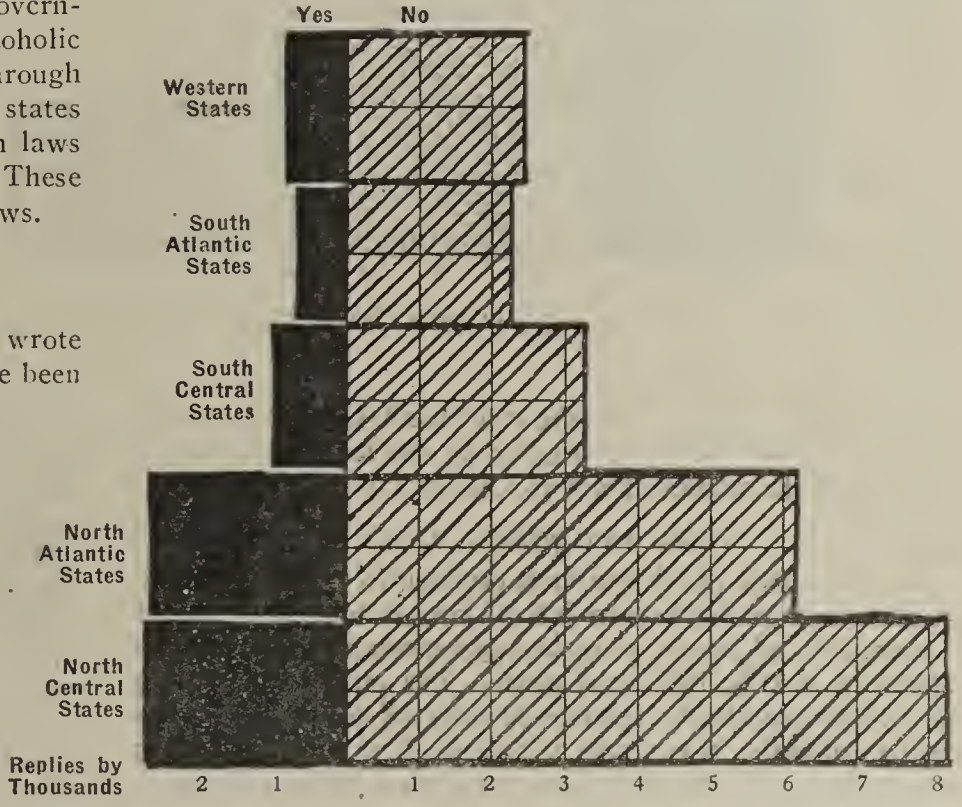
(a) Distilled spirits, wines, or the alcoholic preparations fit for use for beverage purposes authorized to be manufactured by section 60 may be used by physicians in the compounding of alcoholic medicinal preparations under the requirements of Article XI: Provided, however, That where such preparations are fit for use for beverage purposes according to the standards contained in section 60 the same may only be administered to patients in the same manner and subject to the same restrictions as other intoxicating liquor. *Alcohol may also be used by physicians in the course of their practice for other than internal use.*

(b) On filing application for permit to use intoxicating liquor physicians should indicate the kind of liquor which they desire to use, the quantity, the exact manner in which and the purpose for which they desire to use the same. *[Italics ours.]*

Therefore, a physician desiring to use pure alcohol should proceed somewhat as follows: He should obtain from the Federal Prohibition Director of his state a *permit to use* alcohol, detailing specifically for what purposes the alcohol is desired; it may

take some time to obtain this basic permit, but having once obtained it, it may be renewed easily each year. In general no bond will be required to accompany this type of application. To purchase alcohol, preferably a year's supply, the applicant files "Form 1410" (original and three copies); for instance, on the same form he may ask for:

- (a) Six quarts of whisky for the period of one calendar



VOTE ON THERAPEUTIC NECESSITY OF BEER BY SECTIONS OF THE UNITED STATES.

year. (This liquor may be administered to patients for internal use.)

(b) Ten gallons of alcohol for laboratory and surgery. (If the physician declares need of alcohol for surgical purposes, as the sterilization of instruments, or gives evidence of necessity of considerable amount for laboratory use, he can obtain any commensurate quantity.)



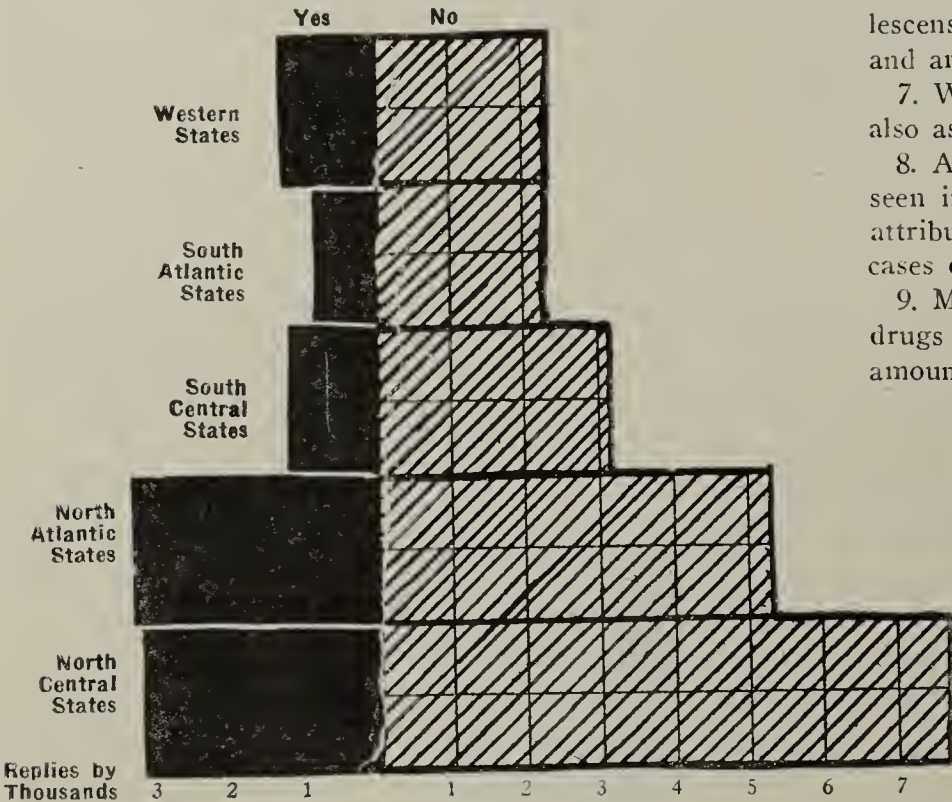
(c) Two gallons of alcohol for compounding. (The physician must declare he needs this, or some other quantity, for compounding medicines, rendered unfit for beverage purposes.)

The forms should also contain the name of the vender; if the consignment is to be shipped out of the city, the name of the express company empowered to transport it. These forms, duly filled out and accompanied by the permit, are sent to the state director, who in turn authorizes the vender to ship the consignment; the vender, where relatively large quantities of alcohol are to be purchased, must be one who holds a permit as a "Wholesale Dealer in Intoxicating Liquors"—not a retail pharmacist.

In laboratory practice, pure alcohol is often used needlessly in certain procedures in which *denatured alcohol*, as distinguished from medicated alcohol, could be substituted. Not only is denatured alcohol more easily obtainable, but it is considerably cheaper.

ALCOHOL FOR EXTERNAL APPLICATION

Pure grain alcohol for "rubbing" or "bathing," which is to be used at the patient's home, can be obtained only by prescription, under the same regulations as apply to the internal



VOTE ON THERAPEUTIC NECESSITY OF WINE BY SECTIONS OF THE UNITED STATES.

administration of liquor. On the other hand, *medicated* alcohol may be obtained from the druggist by the layman without a prescription, in quantities not exceeding 1 pint.

STATE AND FEDERAL LAWS

In many states, physicians have commented on the fact that the state laws go far beyond federal laws in their severity. It is impossible, of course, to make suggestions as to the modifications of laws in individual states. The map accompanying this article reveals the relative severity of these laws. The problem of state, in contrast to federal, laws is one affecting every activity of life, as well as the matter of prohibition.

ILLICIT WHISKY AND DISTRIBUTION

In practically every community in the country, some physicians have stated that "moonshine" is freely available, and that it was unnecessary to write prescriptions in order for patients to secure beverages for medicinal or other purposes. Far more important from the medical point of view, however, was the fact that the great majority of physicians objected to being made the main factors in the distribution of alcohol. Thousands stated that they did not wish to be the "goats" for

the government in controlling this problem, nor did they wish to serve as saloonkeepers or bartenders.

Summary

1. Physicians of the United States are almost equally divided on the question as to whether whisky is a necessary therapeutic agent in the practice of medicine; about 26 per cent. consider beer necessary; about 22 per cent. consider wine necessary.
2. More physicians of cities over 50,000 in population consider alcoholic beverages necessary than do those in smaller cities and in rural communities.
3. Physicians of the North Atlantic and South Atlantic states are more favorable to the therapeutic use of whisky than are those in the remainder of the country.
4. The large majority of physicians who consider whisky necessary believe it valuable in pneumonia, influenza and other acute infectious diseases.
5. A considerable proportion of those who consider whisky of value utilize it in the treatment of diseases incident to old age and general debility, in convalescence, diabetes, heart failure and shock.
6. Beer is used therapeutically chiefly in lactation, convalescence, old age, and for the treatment of debility, dyspepsia and anemia.
7. Wine is used chiefly for the same conditions as is beer, but also as a substitute for whisky.
8. About one fourth of the physicians stated that they had seen instances of unnecessary suffering or death which they attributed to the enforcement of prohibition laws, including cases due to whisky of illicit manufacture or of poor quality.
9. Many physicians are against restriction in either the drugs prescribed, in the number of prescriptions or in the amount of drugs prescribed.
10. Only 2 per cent. of the physicians replying believed that physicians should be permitted to write more than 100 prescriptions in three months.
11. Many physicians say that limitation of the number of prescriptions does not provide for epidemics and encourages the use of the limit by many.
12. Many physicians say that limitation to a definite minimum quantity of alcoholic beverages over certain periods is a serious interference with treatment of conditions in which greater quantities are required.
13. A large majority of physicians believe that some regulation or restriction should be placed on the prescribing of alcoholic liquors.
14. A large number of physicians favor such regulations as are under the Harrison Narcotic Law.
15. The experience of physicians indicates that certain state laws are too stringent relative to the provision of pure alcohol for laboratory and surgical purposes.
16. Many physicians have not informed themselves as to their privileges under the present regulations relative to the securing of pure alcohol or of whisky for office use.
17. The lack of uniformity in state and federal laws complicates the formulation of methods for adequately solving the problem of the medicinal supply of alcoholic liquors.
18. Physicians through their practice have observed extensive violations of the present prohibition regulations in their communities.
19. The majority of physicians would welcome a change in prohibition regulations which would take from them the burden of distribution of alcoholic liquors.
20. Many physicians believe that the provision of whisky and alcohol for medicinal purposes by the government in sealed packages at a fixed price with control of prescriptions similar to that of the Harrison Narcotic Law will solve the problem of relation of physicians to the enforcement of prohibition.



## RESULTS BY STATES

## REPORT ON RESULTS IN FIFTEEN STATES NOT PREVIOUSLY PUBLISHED

(Continued from page 139)

On December 24, THE JOURNAL published the results of the referendum on the use of alcohol in the practice of medicine in Illinois and Indiana. On December 31 appeared the reports on Idaho, Kansas, Maine, Mississippi, Nebraska and Rhode Island. On January 7 results were given for eleven states, viz.: Arizona, Colorado, Connecticut, Delaware, Georgia, Iowa, Michigan, Montana, North Dakota, Ohio and Pennsylvania. Last week results were given for fourteen states, viz.: Alabama, Arkansas, California, Florida, Kentucky, Louisiana, Maryland, Minnesota, Missouri, Nevada, New Hampshire, New Mexico, New York and Wisconsin, and the District of Columbia. Following are the states not previously reported. Under "Comments," in each state, are printed selections from some of the replies; lack of space prevents giving more than a few of these comments.

## MASSACHUSETTS

Federal prohibition became effective in Massachusetts, July 1, 1919. There are no state restrictions regarding the prescribing of alcoholic liquors.

no, 28; Springfield, yes, 26; no, 20; Cambridge, yes, 27; no, 14; Fall River, yes, 12; no, 12; Lynn, yes, 16; no, 14; New Bedford, yes, 16; no, 7; Lowell, yes, 13; no, 11; Somerville, yes, 13; no, 6; Lawrence, yes, 10; no, 5; Brockton, yes, 11; no, 8; Holyoke, yes, 15; no, 6; Haverhill, yes, 9; no, 12. Total

## RESULTS IN MASSACHUSETTS

MASSACHUSETTS	Boston	Worcester	Springfield	Cambridge	Fall River	Lynn	New Bedford	Lowell	Somerville	Lawrence	Brockton	Holyoke	Haverhill	Total Cities	Rural	Grand Total
Number of physicians.....	2,095	276	223	169	140	133	128	129	101	100	85	77	74	3,730	2,229	5,959
Questionnaires sent .....	1,103	98	69	77	41	41	38	38	35	38	31	29	30	1,668	737	2,405
Questionnaires returned.....	452	61	46	41	24	30	23	24	19	15	19	21	21	796	547	1,343
Percentage of returns.....	41	62	67	53	59	73	61	63	54	39	61	72	70	48	74	56
General practitioners .....	294	42	35	33	16	27	15	18	14	11	15	15	18	553	466	1,019
Surgeons .....	82	6	6	4	5	2	3	3	3	1	3	5	1	124	31	155
Specialists .....	76	13	5	4	3	1	5	3	2	3	1	1	2	119	50	169
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?																
Yes.....	250	33	26	27	12	16	16	13	13	10	11	15	9	451	275	726
No.....	195	28	20	14	12	14	7	11	6	5	8	6	12	338	264	602
Do you regard beer as a necessary therapeutic agent in the practice of medicine?																
Yes.....	124	14	11	10	10	6	9	8	8	7	6	6	5	225	134	359
No.....	319	45	35	29	14	24	14	16	11	8	13	14	15	557	401	958
Do you regard wine as a necessary therapeutic agent in the practice of medicine?																
Yes.....	185	19	17	22	11	8	12	10	7	6	7	13	7	324	172	496
No.....	258	41	29	19	13	22	11	14	10	8	11	8	14	453	364	822
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?																
Yes.....	71	8	9	7	6	2	8	7	2	4	5	6	2	137	81	218
No.....	363	52	37	32	18	27	14	17	15	10	14	13	17	623	443	1,072
How many times have you found it advisable to prescribe these liquors in a month?																
Whisky: Number of physicians stating times advisable.....	178	23	21	21	10	10	11	13	10	9	9	10	6	331	218	549
Number of physicians stating no times advisable.....	131	20	9	6	6	10	5	3	4	3	3	2	7	209	165	374
Beer: Number of physicians stating times advisable .....	19	3	1	5	2	1	4	3	..	3	2	2	2	47	27	74
Number of physicians stating no times advisable.....	268	38	24	22	12	16	12	10	13	8	9	9	11	452	340	792
Wine: Number of physicians stating times advisable .....	98	8	16	16	6	3	7	8	4	7	3	6	2	184	102	286
Number of physicians stating no times advisable.....	190	34	12	11	9	14	8	5	9	3	7	5	11	318	264	582
Do you hold a federal permit?																
Yes.....	224	22	24	24	13	17	12	11	11	11	14	14	10	407	253	660
No.....	171	25	16	12	9	10	9	10	6	3	5	3	8	287	217	504
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?																
Yes (limit not specified).....	70	9	12	5	5	7	4	4	3	2	2	1	4	128	103	231
Restricted absolutely .....	25	2	..	3	..	1	..	..	1	1	1	1	1	36	17	53
1 to 50 prescriptions.....	40	4	3	1	1	2	2	..	..	1	1	2	2	59	34	93
51 to 100 prescriptions.....	92	18	8	14	6	5	4	7	4	6	6	1	3	174	125	299
More than 100 prescriptions.....	15	..	1	2	..	4	4	3	..	..	..	..	..	29	12	41
Total .....	242	33	24	25	12	19	14	14	8	10	10	5	10	426	291	717
No restriction .....	205	25	17	15	11	11	9	10	9	5	8	15	11	351	232	583
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?																
Yes.....	209	33	22	20	11	18	11	10	10	8	10	6	12	380	235	665
No.....	215	25	18	18	12	11	12	14	8	6	9	15	9	372	228	600

Questionnaires were sent to 2,405 physicians in Massachusetts, and 1,343, or 56 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Boston, yes, 250; no, 195; Worcester, yes, 33;

for the cities, yes, 451; no, 338; for the rural districts, yes, 275; no, 264; for the state, yes, 726; no, 602.

On the question "Is beer a necessary therapeutic agent?" the vote was: Boston, yes, 124; no, 319; Worcester, yes, 14;



no, 45; Springfield, yes, 11; no, 35; Cambridge, yes, 10; no, 29; Fall River, yes, 10; no, 14; Lynn, yes, 6; no, 24; New Bedford, yes, 9; no, 14; Lowell, yes, 8; no, 16; Somerville, yes, 8; no, 11; Lawrence, yes, 7; no, 8; Brockton, yes, 6; no, 13; Holyoke, yes, 6; no, 14; Haverhill, yes, 6; no, 15. Total for the cities, yes, 225; no, 557; for the rural districts, yes, 134; no, 401; for the state, yes, 359; no, 958.

On the question "Is wine a necessary therapeutic agent?" the vote was: Boston, yes, 185; no, 258; Worcester, yes, 19; no, 41; Springfield, yes, 17; no, 29; Cambridge, yes, 22; no, 19; Fall River, yes, 11; no, 13; Lynn, yes, 8; no, 22; New Bedford, yes, 12; no, 11; Lowell, yes, 10; no, 14; Somerville, yes, 7; no, 10; Lawrence, yes, 6; no, 8; Brockton, yes, 7; no, 11; Holyoke, yes, 13; no, 8; Haverhill, yes, 7; no, 14. Total for the cities, yes, 324; no, 458; for the rural districts, yes, 172; no, 364; for the state, yes, 496; no, 822.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 218; no, 1,072.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 549 had found it advisable to prescribe whisky, and 374 had not found it advisable; 74 had found it advisable to prescribe beer, and 792 had not found it advisable; 286 had found it advisable to prescribe wine, and 582 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 660; no, 504.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 717 stated that they should be restricted, and 583 did not believe such restrictions necessary; 231 physicians answered yes, but did not specify a limit; 53 stated that the number should be limited to absolutely none; 93 considered from 1 to 50 prescriptions in three months sufficient; 299 considered from 51 to 100 satisfactory, and 41 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was, yes, 665; no, 600.

#### COMMENTS

Would it not put the thing on a better basis if one physician, for instance the town physician in a place of this size, were the only one to have the permit and that he be forbidden to make a charge, but be paid a small salary by the community or by the federal government? Then any patient of mine who needed it could get it on an order from me and the others could be referred to him for decision. He, not being the family physician, would not be expected to favor the patient and would lose nothing by his refusal.—*Winchester.*

It seems to me that the prohibition law has no effect on my therapeutic treatment of patients. I formerly gave milk punches to patients suffering from exhaustion, but I find that in the great majority of instances the punch can be left out without harm. In only one case, and that in an elderly woman following a severe attack of influenza, have I used distilled liquor. On the contrary, I would not limit the number of prescriptions that a physician might issue. Just how the misuse of this right is to be prevented I am not prepared to say.—*Brookline.*

I find that my patients are able somehow to procure pure alcohol at nominal price, and liquors of all kinds at all times.—*Boston.*

Except in serious disease, alcohol is frequently prescribed at the request of the patient. This fact cannot be denied; it is contrary to principle, it places the man who acquiesces in the class with the rum seller, and it justifies the following conclusion: It is difficult if not impossible honestly to prescribe intoxicating liquors without personal harm resulting through refusal to issue prescriptions when not indicated, for the average layman will not accept an explanation if proffered, and will in many instances take affront. His sympathy is not with the law, and he does not appreciate any attempt to comply with it. Morphinism, in my opinion, is a far worse habit than alcoholism, yet the government regulations concerning the prescribing of morphin are far less rigid than those dealing with alcohol.—*Dorchester.*

The government should purchase all wine and liquor in the country. Druggists only should retail the goods on prescription. The price should be fixed, allowing a stated percentage to the druggist. A simple prescription from any regular registered physician should be all the order necessary. The doctor should be allowed to trade or direct his patients to but one druggist in his district, and that the nearest to his establishment. The druggist should record and file the prescriptions of each doctor separately and keep them in form so that an inspector employed by the government could easily and with the least amount of time and trouble make a semiannual examination and report. Any illegal or abusive prescribing should be punished by fine and removal of privilege.—*Cambridge.*

The law is a handicap to a conscientious physician. A large number of patients will go to the physician whose conscience is elastic.—*Worcester.*

#### NORTH CAROLINA

The state prohibition law was adopted by direct vote, May 26, 1908, and went into effect, Jan. 1, 1909. Physicians may secure permits from the clerk of the county court to purchase grain alcohol for surgical and scientific purposes. There are no provisions for prescribing either alcohol or alcoholic liquors.

Questionnaires were sent to 885 physicians in North Carolina, and 445, or 50 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 182; no, 262.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 72; no, 370.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 68; no, 367.

On the question whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 83; no, 345.

#### RESULTS IN NORTH CAROLINA

Number of physicians.....	2,236
Questionnaires sent .....	885
Questionnaires returned .....	445
Percentage of returns.....	50
General practitioners .....	370
Surgeons .....	25
Specialists .....	50
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	182
No .....	262
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	72
No .....	370
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	68
No .....	367
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	83
No .....	345
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable....	108
Number of physicians stating no times advisable..	223
Beer: Number of physicians stating times advisable.....	31
Number of physicians stating no times advisable....	286
Wine: Number of physicians stating times advisable.....	20
Number of physicians stating no times advisable....	293
Do you hold a federal permit?	
Yes .....	13
No .....	175
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	66
Restricted absolutely .....	79
1 to 50 prescriptions.....	36
51 to 100 prescriptions.....	49
More than 100 prescriptions.....	7
Total .....	237
No restriction .....	185
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	277
No .....	151

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 108 had found it advisable to prescribe whisky, and 223 had not found it advisable; 31 had found it advisable to prescribe beer, and 286 had not found it advisable; 20 had found it advisable to prescribe wine, and 293 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were, yes, 13; no, 175.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 237 stated that they should be restricted, and 185 did not believe such restrictions necessary; 66 physicians answered yes, but did not specify a limit; 79 stated that the number should be limited to absolutely none; 36 considered from 1 to 50 prescriptions in three months sufficient; 49 considered from 51 to 100 satisfactory, and 7 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 279; no, 151.



COMMENTS

I am a teetotaler, and did not prescribe whisky oftener than three to six times a year before the days of the prohibition amendment; but I do not believe that physicians should be restricted in the use of any remedy that is indicative in the relief of suffering or the preservation of life.—*Dare County*.

There should not be occasion for restriction. Alcohol has its proper place and use, chiefly in the aged. The medical profession should be able to exercise a decent conscient in this as it has always done in other things.—*Wilmington*.

I would like to be able to get some pure alcohol without so much red tape or poison ingredients.—*Watauga County*.

I do not regard whisky as absolutely necessary, but I would often give it as a food and quick stimulant in cases of pneumonia and influenza if I had it at hand. The family can give it when there is no physician or nurse to give strychnin, and you can often get these patients to take more nourishment by giving whisky.—*High Point*.

I feel as if the physician is being hampered in his work by being limited in the prescribing of alcoholic liquors when by his scientific knowledge he knows he is being led around by laws probably being made without regard to the medical profession.—*Alamance County*.

Trenton, yes, 14; no, 14; Camden, yes, 20; no, 6; East Orange, yes, 10; no, 9; Elizabeth, yes, 17; no, 6; Passaic, yes, 10; no, 5; Hoboken, yes, 10; no, 5; Bayonne, yes, 9; no, 1. Total for the cities, yes, 239; no, 111; for the rural districts, yes, 281; no, 197; for the state, yes, 520; no, 308.

On the question "Is beer a necessary therapeutic agent?" the vote was: Newark, yes, 39; no, 71; Jersey City, yes, 24; no, 20; Atlantic City, yes, 10; no, 22; Paterson, yes, 7; no, 21; Trenton, yes, 6; no, 22; Camden, yes, 8; no, 18; East Orange, yes, 5 no, 14; Elizabeth, yes, 14; no, 9; Passaic, yes, 7; no, 8; Hoboken, yes, 5; no, 10; Bayonne, yes, 2; no, 8. Total for the cities, yes, 127; no, 223; for the rural districts, yes, 146; no, 327; for the state, yes, 273; no, 550.

On the question "Is wine a necessary therapeutic agent?" the vote was: Newark, yes, 51; no, 59; Jersey City, yes, 28; no, 16; Atlantic City, yes, 15; no, 16; Paterson, yes, 10; no, 17; Trenton, yes, 11; no, 16; Camden, yes, 11; no, 15; East Orange, yes, 11; no, 8; Elizabeth, yes, 13; no, 9; Passaic,

RESULTS IN NEW JERSEY

NEW JERSEY	Newark	Jersey City	Atlantic City	Paterson	Trenton	Camden	East Orange	Elizabeth	Passaic	Hoboken	Bayonne	Total Cities	Rural	Grand Total
Number of physicians.....	538	250	151	148	139	125	86	74	71	62	52	1,696	1,564	3,260
Questionnaires sent .....	195	95	56	52	56	38	33	36	29	29	21	640	864	1,504
Questionnaires returned .....	112	44	33	28	28	26	19	23	15	15	10	353	484	837
Percentage of returns.....	57	46	59	54	50	68	58	64	52	52	48	55	56	56
General practitioners.....	86	39	25	19	22	19	19	20	12	13	10	284	436	720
Surgeons .....	9	5	3	7	4	4	..	2	..	2	..	36	14	50
Specialists .....	17	..	5	2	2	3	..	1	3	..	..	33	34	67
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?														
Yes.....	79	35	20	15	14	20	10	17	10	10	9	239	281	520
No.....	32	9	11	13	14	6	9	6	5	5	1	111	197	308
Do you regard beer as a necessary therapeutic agent in the practice of medicine?														
Yes.....	39	24	10	7	6	8	5	14	7	5	2	127	146	273
No.....	71	20	22	21	22	18	14	9	8	10	8	223	327	550
Do you regard wine as a necessary therapeutic agent in the practice of medicine?														
Yes.....	51	28	15	10	11	11	11	13	9	7	5	171	183	354
No.....	59	16	16	17	16	15	8	9	6	7	5	174	286	460
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?														
Yes.....	19	17	9	5	2	6	3	5	5	3	2	76	105	181
No.....	86	25	24	21	25	20	16	18	10	12	8	265	356	621
How many times have you found it advisable to prescribe these liquors in a month?														
Whisky: Number of physicians stating times advisable .....	53	21	17	11	14	12	9	9	8	8	8	170	191	361
Number of physicians stating no times advisable .....	30	13	11	12	11	8	8	9	6	5	2	115	188	303
Beer: Number of physicians stating times advisable .....	14	7	1	4	3	2	1	3	3	3	..	41	35	76
Number of physicians stating no times advisable .....	54	22	22	17	17	15	14	12	7	8	5	193	277	470
Wine: Number of physicians stating times advisable .....	23	12	5	4	6	2	3	6	4	5	4	74	71	145
Number of physicians stating no times advisable .....	49	18	19	17	14	15	11	10	6	6	2	167	258	425
Do you hold a federal permit?														
Yes.....	61	14	20	15	10	14	11	10	7	10	5	177	180	357
No.....	38	22	10	12	13	8	7	11	7	5	3	136	229	365
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?														
Yes (limit not specified).....	13	8	4	5	3	7	..	1	3	2	1	47	58	105
Restricted absolutely .....	7	2	2	..	4	..	..	..	1	..	..	16	25	41
1 to 50 prescriptions.....	2	2	..	2	1	..	8	..	1	1	..	17	24	41
51 to 100 prescriptions.....	19	2	9	4	5	3	1	2	1	2	3	51	93	144
More than 100 prescriptions.....	..	..	..	..	..	..	..	..	..	..	..	..	4	4
Total .....	41	14	15	11	13	10	9	3	6	5	4	131	204	335
No restriction .....	68	29	16	16	13	16	9	18	9	9	6	209	266	475
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?														
Yes.....	45	13	13	12	12	8	10	2	5	5	3	128	191	319
No.....	65	28	18	15	14	17	9	19	10	10	7	212	278	490

NEW JERSEY

Federal prohibition became effective, July 1, 1919. Prior to that time the state had been under a license system. The law of 1921 provides that physicians in active practice and holding permits from the federal government may, on having the permits countersigned by the county clerk, prescribe liquor for medicinal purposes in compliance with the federal law.

Questionnaires were sent to 1,504 physicians in New Jersey, and 837, or 56 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Newark, yes, 79; no, 32; Jersey City, yes, 35; no, 9; Atlantic City, yes, 20; no, 11; Paterson, yes, 15; no, 13;

yes, 9; no, 6; Hoboken, yes, 7; no, 7; Bayonne, yes, 5; no, 5. Total for the cities, yes, 171; no, 174; for the rural districts, yes, 183; no, 286; for the state, yes, 354; no, 460.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 181; no, 621.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors, 361 had found it advisable to prescribe whisky; and 303 had not found it advisable; 76 had found it advisable to prescribe beer, and 470 had not found it advisable; 145 had found it advisable to prescribe wine, and 425 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 357; no, 365.



On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 335 stated that they should be restricted, and 475 did not believe such restrictions necessary; 105 physicians answered yes, but did not specify a limit; 41 stated that the number should be limited to absolutely none; 41 considered from 1 to 50 prescriptions in three months sufficient; 144 considered from 51 to 100 satisfactory, and 4 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 319; no, 490.

COMMENTS

This is no exaggeration: Many beer drinkers who have not succeeded in making an acceptable home brew are suffering either from intestinal disturbances due to the effect of the poor home brew, or, when they have given up beer altogether, from the effect of the withdrawal of an article of diet to which they have been accustomed for years. On the other hand, many do not bother about home brewing and turn to distilled liquors, which are getting poorer and poorer in quality as pro-

OKLAHOMA

The state constitutional amendment went into effect, Nov. 16, 1907. The law of 1911, amended in 1913, permits the prescribing of grain alcohol for medicinal purposes. There are no provisions for the prescribing of alcoholic liquors.

Questionnaires were sent to 920 physicians in Oklahoma, and 553, or 60 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Oklahoma City, yes, 15; no, 33; Tulsa, yes, 11; no, 30. Total for the cities, yes, 26; no, 63; for the rural districts, yes, 170; no, 288; for the state, yes, 196; no, 351.

On the question "Is beer a necessary therapeutic agent?" the vote was: Oklahoma City, yes, 7; no, 39; Tulsa, yes, 6; no, 35. Total for the cities, yes, 13; no, 74; for the rural districts, yes, 104; no, 357; for the state, yes, 117; no, 431.

On the question "Is wine a necessary therapeutic agent?" the vote was: Oklahoma City, yes, 9; no, 36; Tulsa, yes, 6;

RESULTS IN OKLAHOMA

OKLAHOMA	Oklahoma City	Tulsa	Total Cities	Rural	Grand Total
Number of physicians.....	234	162	396	2,226	2,622
Questionnaires sent .....	82	65	147	773	920
Questionnaires returned .....	49	41	90	463	553
Percentage of returns .....	60	63	61	60	60
General practitioners .....	32	21	53	424	477
Surgeons .....	9	13	22	20	42
Specialists .....	8	7	15	19	34
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?					
Yes.....	15	11	26	170	196
No.....	33	30	63	288	351
Do you regard beer as a necessary therapeutic agent in the practice of medicine?					
Yes.....	7	6	13	104	117
No.....	39	35	74	357	431
Do you regard wine as a necessary therapeutic agent in the practice of medicine?					
Yes.....	9	6	15	102	117
No.....	36	34	70	353	423
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?					
Yes.....	8	9	17	99	116
No.....	39	32	71	348	419
How many times have you found it advisable to prescribe these liquors in a month?					
Whisky: Number of physicians stating times advisable.....	3	10	13	89	102
Number of physicians stating no times advisable.....	32	23	55	260	315
Beer: Number of physicians stating times advisable.....	1	2	3	51	54
Number of physicians stating no times advisable.....	32	29	61	276	337
Wine: Number of physicians stating times advisable.....	3	2	5	45	50
Number of physicians stating no times advisable.....	31	29	60	274	334
Do you hold a federal permit?					
Yes.....	..	2	2	15	17
No.....	10	11	21	161	182
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?					
Yes (limit not specified).....	11	13	24	75	99
Restricted absolutely .....	10	5	15	121	136
1 to 50 prescriptions.....	3	3	6	47	53
51 to 100 prescriptions.....	4	5	9	46	55
More than 100 prescriptions.....	..	1	1	5	6
Total.....	28	27	55	294	349
No restriction .....	15	11	26	150	176
In your opinion, should physicians be restricted in prescribing whisky beer and wine?					
Yes.....	34	25	59	301	360
No.....	8	13	21	146	167

hibition causes the disappearance of the old stock. Many of my friends who formerly would not touch whisky except in an emergency are now regular whisky drinkers. On the train from New York to Buffalo, conversation in the smoking room centered entirely around home brewing and distilling and the quality of drinks and where you could get them, until bedtime. In my specialty I have less occasion to prescribe alcoholics than I did while in general practice. Every New Year's day St. Mary's Hospital in Passaic received from me a gift of from 2 to 5 gallons of whisky because I used it so extensively, i. e., until I gave up general practice. There should be no restriction whatever on anything the physician wishes to prescribe to his patients. Prohibition is a serious disease of the body politic which should be treated as rationally as any other affliction.—Passaic.

I have been in practice forty-five years. During all that time I have seen the profession change in its attitude toward alcohol, and feel myself that there is no diseased condition but what can be as well treated without it as with it. The physician who likes his "toddy" likes to give it. The man who does not care for it can treat efficiently without it.—Jersey City.

I have written eighty-nine prescriptions for whisky from March 20, 1920, to date. The average whisky obtained on prescription seems inferior to what may be obtained without prescription, and the majority of my patients who have occasion to need liquor have it or obtain it without prescription.—Bergen County.

no, 34. Total for the cities, yes, 15; no, 70; for the rural districts, yes, 102; no, 353; for the state, yes, 117; no, 423.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 116; no, 419.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 102 had found it advisable to prescribe whisky, and 315 had not found it advisable; 54 had found it advisable to prescribe beer, and 337 had not found it advisable; 50 had found it advisable to prescribe wine, and 334 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 17; no, 182.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 349 stated that they should be restricted, and 176 did not believe such restrictions necessary; 99 answered yes, but did not specify a limit; 136 stated that the number should be limited to absolutely none; 53 considered from 1 to 50 prescriptions in three months sufficient; 55 considered from 51



to 100 prescriptions satisfactory, and 6 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 360; no, 167.

#### COMMENTS

I am against the present form of making physicians be the goat in the prescribing of liquor, and would not take out a license if the state law was such that I could. I will make the statement that if it is impossible to get any liquor in the future, we should get a substitute for alcohol. I believe that the present restriction of alcohol is causing more deaths directly than was the case before we had the present law; in the future, however, there will be fewer deaths when the government goes a little farther and restricts the making and selling of any kind of alcohol except under strict government supervision.—*Snyder*.

I have a general practice of from \$12,000 to \$18,000 a year. There is not a day but what I would use whisky or alcohol in my practice if I had it. Last week one of my patients drove 250 miles for one-half pint of alcohol; his little baby was dying from malnutrition. I gave 10 drops of alcohol in egg-nog every two or three hours. The baby at this time is improving with no other medication. I might say that this child had been unable to retain food of any description for ten days previous.—*Garfield County*.

I spent four years in a medical school that was chartered by the state, to teach men how and what to prescribe to the sick, and they granted me a certificate setting forth the fact that I was competent to so prescribe. I then went before a board of examiners appointed by the governor of the state and received authority from them to so prescribe in this state, and I have exercised that authority for some twenty years. And now come a few farmers, lawyers, politicians, and the like, who are not presumed to know anything about disease expression or drug action, and yet who have the audacity to say to the medical profession of this country that they can't prescribe this or that, or if they do they can write only a definite number of prescriptions. My opinion would not look good in print, so I will not attempt to express myself further.—*Hooker*.

### OREGON

The state prohibition law went into effect, Jan. 1, 1916. This law was amended in 1917. Under it physicians may prescribe grain alcohol only. Such prescriptions must be dated and must be numbered consecutively. They must show the ailment for which prescribed, the name and address of the physician and the patient, and must be written in duplicate. Carbon copies must be filed each month with the county clerk.

Questionnaires were sent to 478 physicians in Oregon, and 282, or 59 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Portland, yes, 41; no, 58; for the rural districts, yes, 80; no, 103; for the state, yes, 121; no, 161.

On the question "Is beer a necessary therapeutic agent?" the vote was: Portland, yes, 21; no, 76; for the rural districts, yes, 44; no, 139; for the state, yes, 65; no, 215.

On the question "Is wine a necessary therapeutic agent?" the vote was: Portland, yes, 25; no, 74; for the rural districts, yes, 53; no, 129; for the state, yes, 78; no, 203.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 74; no, 199.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 63 had found it advisable to prescribe whisky, and 145 had not found it advisable; 26 had found it advisable to prescribe beer, and 164 had not found it advisable; 33 had found it advisable to prescribe wine, and 162 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 9; no, 56.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 182 stated that they should be restricted, and 87 did not believe such restrictions necessary; 54 physicians answered yes, but did not specify a limit; 52 stated that the number should be restricted to absolutely none; 39 considered from 1 to 50 prescriptions in three months sufficient; 34 considered from 51 to 100 satisfactory, and 3 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 193; no, 84.

#### COMMENTS

I think it would be infinitely better that the federal government handle the liquor and allow each family their monthly quota and not intrust same to the physicians.—*Portland*.

I should rather get along without liquor in my practice than to be bothered with "well" patients who want liquor. However, I do not endorse prohibition and think a conscientious physician should be able to prescribe liquor to his patients *ad lib*, if they really need it.—*Portland*.

The same restriction should be applied in my opinion as is in the prescribing of morphin, etc.—*Portland*.

There should be no restrictions on the right of the physician to prescribe what, in his judgment, is for the best interest of his patient. Those few who will prostitute their profession for the sake of gain or even goodfellowship should be read out of the profession or punished sufficiently to hold them in line. I believe that alcoholic stimulation is called for in the legitimate practice of medicine at least as often as morphin is, and the matter should be handled much in the same manner as the opium question is handled by the Harrison act. I realize that there are some unprincipled men in the profession who must be restrained in some manner.—*Eugene*.

I live in a "dry" state, and so have had no opportunity to prescribe alcoholic liquors, even had I wished to do so; however, I am not conscious of any lack of efficient therapeutic agents, by reason of Oregon's dryness. In my opinion, the only need for alcohol is when a rapidly diffusible stimulant is called for, and even then I believe every indication can be met by a suitable hypodermic injection.—*Medford*.

### RESULTS IN OREGON

OREGON	Portland	Rural	Grand Total
Number of physicians.....	530	615	1,145
Questionnaires sent .....	152	326	478
Questionnaires returned .....	99	183	282
Percentage of returns.....	65	56	59
General practitioners .....	71	166	237
Surgeons .....	11	8	19
Specialists .....	17	9	26
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes.....	41	80	121
No.....	58	103	161
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes.....	21	44	65
No.....	76	139	215
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes.....	25	53	78
No.....	74	129	203
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes.....	22	52	74
No.....	72	127	199
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable .....	20	43	63
Number of physicians stating no times advisable .....	52	93	145
Beer: Number of physicians stating times advisable .....	10	16	26
Number of physicians stating no times advisable .....	56	108	164
Wine: Number of physicians stating times advisable .....	8	25	33
Number of physicians stating no times advisable .....	57	105	162
Do you hold a federal permit?			
Yes.....	4	5	9
No.....	20	36	56
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	22	32	54
Restricted absolutely .....	23	29	52
1 to 50 prescriptions.....	10	29	39
51 to 100 prescriptions.....	9	25	34
More than 100 prescriptions.....	1	2	3
Total .....	65	117	182
No restriction .....	27	60	87
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes.....	69	124	193
No.....	27	57	84

### SOUTH CAROLINA

The state prohibition law became effective, Jan. 1, 1916. Legally qualified physicians may prescribe pure alcohol in a quantity not to exceed one-half pint. Such prescriptions can be made only after an actual physical examination of the patient and in cases of absolute necessity.

Questionnaires were sent to 508 physicians in South Carolina, and 259, or 51 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Charleston, yes, 9; no, 5; for the rural districts, yes, 108; no, 135; for the state, yes, 117; no, 140.

On the question "Is beer a necessary therapeutic agent?" the vote was: Charleston, yes, 6; no, 8; for the rural districts, yes, 53; no, 188; for the state, yes, 59; no, 196.



On the question "Is wine a necessary therapeutic agent?" the vote was: Charleston, yes, 1; no, 13; for the rural districts, yes, 52; no, 189; for the state, yes, 53; no, 202.

On the question as to whether physicians had witnessed unnecessary suffering or death from the enforcement of the prohibition laws, the replies were: yes, 54; no, 198.

RESULTS IN SOUTH CAROLINA

SOUTH CAROLINA	Charleston	Rural	Grand Total
Number of physicians.....	125	1,327	1,452
Questionnaires sent .....	41	467	508
Questionnaires returned .....	14	245	259
Percentage of returns.....	34	52	51
General practitioners .....	10	219	229
Surgeons .....	2	11	13
Specialists .....	2	15	17
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes.....	9	108	117
No.....	5	135	140
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes.....	6	53	59
No.....	8	188	196
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes.....	1	52	53
No.....	13	189	202
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes.....	4	50	54
No.....	10	188	198
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable .....	6	49	55
Number of physicians stating no times advisable .....	3	135	138
Beer: Number of physicians stating times advisable .....	2	13	15
Number of physicians stating no times advisable .....	5	149	154
Wine: Number of physicians stating times advisable .....	1	11	12
Number of physicians stating no times advisable .....	7	149	156
Do you hold a federal permit?			
Yes.....	..	9	9
No.....	6	142	148
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	3	49	52
Restricted absolutely .....	2	50	52
1 to 50 prescriptions.....	..	12	12
51 to 100 prescriptions.....	..	27	27
More than 100 prescriptions.....	..	3	3
Total .....	5	141	146
No restriction .....	8	90	98
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes.....	4	163	167
No.....	9	76	85

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 55 had found it advisable to prescribe whisky, and 138 had not found it advisable; 15 had found it advisable to prescribe beer, and 154 had not found it advisable; 12 had found it advisable to prescribe wine, and 156 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 9; no, 148.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 146 stated that they should be restricted, and 98 did not believe such restrictions necessary; 52 physicians answered yes, but did not specify a limit; 52 stated that the number should be limited to absolutely none; 12 considered from 1 to 50 prescriptions in three months sufficient; 27 considered from 51 to 100 satisfactory, and 3 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 167; no, 85.

COMMENTS

I think most assuredly there should be a limit: a quart of whisky or brandy a month to any patient. I think it might be a wise expedient to have the law provide that in certain cases of illness a certain quantity of whisky or brandy per month be prescribed for each case, and let that prescription be filled by the state health officer's department

or by some one drug store in a certain area about the same as is done by the state of South Carolina for the free distribution of diphtheria antitoxin, with a full record of each case. Let the state furnish it at cost and neither the doctor nor anybody else make any money out of it, and the value of the remedy will at once go down.—Georgetown.

The careless use of this drug by physicians gives the laity the idea that it is a useful one, thereby perpetuating an ancient error.—Greenville.

I have been practicing medicine for nearly thirty years and I am fully satisfied and convinced that in treating pneumonia, typhoid fever, tuberculosis and wasting diseases of the aged that a stimulant in the form of a good pure whisky is beyond doubt beneficial. Of course, I mean that the whisky should be used in moderation as a medicine and a stimulant. I have seen cases of pneumonia and typhoid fever in which I believe a little whisky did the trick. Used intelligently, it is in a class by itself in my opinion.—Florence County.

SOUTH DAKOTA

The prohibitory amendment of the state constitution went into effect, July 1, 1917. Legally qualified physicians in actual practice may secure permits from the state sheriff to prescribe alcoholic liquors. Prescriptions must be written in ink, indelible pencil, or on the typewriter, must be signed by the physician, and must show the number of his permit, the date, the name of the patient, the disease for which prescribed, the kind and quantity of liquor prescribed, the dosage, the number of prescriptions written for the same patient, and the total amount prescribed during the present three months. The physician must also certify that the liquor is needed for actual sickness. A copy of the prescription must be retained as well as a record of all liquors prescribed. Monthly reports with duplicate copies of all prescriptions must be filed with the county auditor.

RESULTS IN SOUTH DAKOTA

Number of physicians.....	658
Questionnaires sent .....	314
Questionnaires returned .....	203
Percentage of returns.....	65
General practitioners .....	188
Surgeons .....	7
Specialists .....	8
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	80
No .....	120
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	44
No .....	157
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	49
No .....	150
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	50
No .....	144
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable.....	43
Number of physicians stating no times advisable.....	103
Beer: Number of physicians stating times advisable.....	22
Number of physicians stating no times advisable.....	115
Wine: Number of physicians stating times advisable.....	19
Number of physicians stating no times advisable.....	112
Do you hold a federal permit?	
Yes .....	9
No .....	85
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	31
Restricted absolutely .....	25
1 to 50 prescriptions .....	30
51 to 100 prescriptions.....	27
More than 100 prescriptions.....	1
Total .....	114
No restriction .....	85
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	117
No .....	77

Questionnaires were sent to 314 physicians in South Dakota, and 203, or 65 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 80; no, 120.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 44; no, 157.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 49; no, 150.



On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 50; no, 144.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors, 43 had found it advisable to prescribe whisky, and 103 had not found it advisable; 22 had found it advisable to prescribe beer, and 115 had not found it advisable; 19 had found it advisable to prescribe wine, and 112 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 9; no, 85.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 114 stated that they should be restricted, and 85 did not believe such restrictions necessary; 31 physicians answered yes, but did not specify a limit; 25 stated that the number should be restricted to absolutely none; 30 considered from

TENNESSEE

The state prohibition law went into effect, July 1, 1909. This law was amended in 1917. Legally qualified physicians may prescribe alcohol only for medicinal use in quantities not to exceed 1 pint. Such prescriptions must be in triplicate and must contain the name and address of the patient and the physician. A copy must be kept for two years and a monthly report made to the pure food and drug department of the state.

Questionnaires were sent to 1,025 physicians in Tennessee, and 526, or 51 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Memphis, yes, 27; no, 37; Nashville, yes, 18; no, 23; Knoxville, yes, 9; no, 17; Chattanooga, yes, 10; no, 12. Total for the cities, yes, 64; no, 89; for the rural districts, yes, 160; no, 207; for the state, yes, 224; no, 296.

RESULTS IN TENNESSEE

TENNESSEE	Memphis	Nash-ville	Knox-ville	Chatta-nooga	Total Cities	Rural	Grand Total
Number of physicians.....	428	352	173	155	1,108	2,226	3,328
Questionnaires sent .....	116	86	50	48	300	725	1,025
Questionnaires returned .....	66	42	26	22	156	370	526
Percentage of returns.....	57	49	52	46	52	51	51
General practitioners .....	36	27	18	13	94	350	444
Surgeons .....	14	9	3	7	33	4	37
Specialists .....	16	6	5	2	29	16	46
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?							
Yes.....	27	18	9	10	64	160	224
No.....	37	23	17	12	89	207	296
Do you regard beer as a necessary therapeutic agent in the practice of medicine?							
Yes.....	10	6	4	5	25	65	90
No.....	55	34	20	17	126	296	422
Do you regard wine as a necessary therapeutic agent in the practice of medicine?							
Yes.....	13	10	3	5	31	70	101
No.....	51	30	22	17	120	289	409
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?							
Yes.....	9	8	6	5	28	89	117
No.....	52	32	20	17	121	268	389
How many times have you found it advisable to prescribe these liquors in a month?							
Whisky: Number of physicians stating times advisable.....	15	11	5	6	37	99	136
Number of physicians stating no times advisable....	34	17	16	12	79	189	268
Beer: Number of physicians stating times advisable.....	5	4	2	3	14	23	37
Number of physicians stating no times advisable.....	39	19	18	12	88	196	284
Wine: Number of physicians stating times advisable.....	5	5	..	2	12	30	42
Number of physicians stating no times advisable.....	38	19	20	13	90	196	286
Do you hold a federal permit?							
Yes.....	2	5	2	2	11	25	36
No.....	22	15	13	10	60	165	225
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write							
Yes (limit not specified).....	9	10	4	1	24	73	97
Restricted absolutely .....	10	3	7	2	22	63	85
1 to 50 prescriptions.....	10	4	2	5	21	36	57
51 to 100 prescriptions.....	10	6	3	4	23	40	63
More than 100 prescriptions.....	..	..	..	..	..	5	5
Total.....	39	23	16	12	90	217	307
No restriction .....	20	18	7	9	54	133	187
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?							
Yes.....	41	24	19	12	96	244	340
No.....	22	16	6	10	54	108	162

1 to 50 prescriptions in three months sufficient; 27 considered from 51 to 100 satisfactory, and 1 physician considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 117; no, 77.

COMMENTS

In our county we have no registered druggist. State law is as unreasonable as one could imagine. I simply cannot get any alcohol preparation to use. In our county moonshine is plentiful and is causing more harm to users than good whisky.—*Ziebach County*.

I have done general practice for twenty-five years and have had above the average of business, having a very large territory. I have not used a quart of whisky in that time—absolutely none for several years. While I think alcohol has some therapeutic value, there are other things that will take its place, perhaps do better. Alcohol as an external application is of use, also as an antiseptic and disinfectant, and this is about the only use I make of it. A law is needed to regulate its use for unscrupulous physicians only. The eighteenth amendment is not a hardship to physicians, and I would like to see it enforced rigidly.—*Spink County*.

I can find no valid objection to the idea of having the control and distribution of the stuff placed under and parallel with narcotics in an amended Harrison bill, such as we have become accustomed to and which is working with excellent success, apparently, and causing no unnecessary distress.—*Brookings County*.

On the question "Is beer a necessary therapeutic agent?" the vote was: Memphis, yes, 10; no, 55; Nashville, yes, 6; no, 34; Knoxville, yes, 4; no, 20; Chattanooga, yes, 5; no, 17. Total for the cities, yes, 25; no, 126; for the rural districts, yes, 65; no, 296; for the state, yes, 90; no, 422.

On the question "Is wine a necessary therapeutic agent?" the vote was: Memphis, yes, 13; no, 51; Nashville, yes, 10; no, 30; Knoxville, yes, 3; no, 22; Chattanooga, yes, 5; no, 17. Total for the cities, yes, 31; no, 120; for the rural districts, yes, 70; no, 289; for the state, yes, 101; no, 409.

The question "Have instances occurred in your own practice in which unnecessary suffering or death has resulted from enforcement of prohibition laws?" was answered: yes, 117; no, 389.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 136 had found it advisable to prescribe whisky, and 268 had not found it advisable; 37 had found it advisable to prescribe beer, and 284 had not found it advisable; 42 had found it advisable to prescribe wine, and 286 had not found it advisable.



To the question "Do you hold a federal permit?" the replies were: yes, 36; no, 225.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 307 stated that they should be restricted, and 187 did not believe such restrictions necessary; 97 physicians answered yes, but did not specify a limit; 85 stated that the number should be restricted to absolutely none; 57 considered from 1 to 50 prescriptions in three months sufficient; 63 considered from 51 to 100 satisfactory, and 5 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the replies were: yes, 340; no, 162.

COMMENTS

My personal observation has been that physicians who prescribe whisky will give their friends a prescription when asked to. Another class will give to any one for the almighty dollar. I have been informed by a government official in charge of this branch that about 97 per cent.

TEXAS

The Texas prohibition law went into effect, June 26, 1918. Under it physicians may prescribe pure alcohol only, in amounts not to exceed 1 pint. Permits are issued by the comptroller of public accounts, who provides prescription books containing 100 serially numbered forms. The stubs must be returned to the comptroller after six months. Physicians are required to make a careful personal physical examination of the patient and to preserve a record of all prescriptions. A monthly report must be made to the comptroller of accounts.

Questionnaires were sent to 2,042 physicians in Texas, and 1,196, or 59 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Dallas, yes, 26; no, 33; Houston, yes, 25; no, 35; San Antonio, yes, 32; no, 20; Fort Worth, yes, 22; no, 19;

RESULTS IN TEXAS

TEXAS	Dallas	Houston	San Antonio	Fort Worth	El Paso	Total Cities	Rural	Grand Total
Number of physicians.....	385	291	289	244	155	1,364	4,841	6,205
Questionnaires sent .....	121	105	85	60	56	427	1,615	2,042
Questionnaires returned .....	60	60	53	41	31	245	951	1,196
Percentage of returns.....	50	57	62	68	55	57	59	59
General practitioners .....	34	44	40	28	20	166	875	1,041
Surgeons .....	12	8	6	3	7	36	33	69
Specialists .....	14	8	7	10	4	43	43	86
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?								
Yes.....	26	25	32	22	19	124	367	491
No.....	33	35	20	19	11	118	579	697
Do you regard beer as a necessary therapeutic agent in the practice of medicine?								
Yes.....	12	10	18	15	17	72	194	266
No.....	46	50	34	25	13	168	737	905
Do you regard wine as a necessary therapeutic agent in the practice of medicine?								
Yes.....	17	18	24	19	17	95	220	315
No.....	42	41	29	21	12	145	722	867
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?								
Yes.....	13	21	19	8	10	71	205	276
No.....	44	39	33	29	20	165	717	882
How many times have you found it advisable to prescribe these liquors in a month?								
Whisky: Number of physicians stating times advisable.....	19	14	25	16	9	83	218	301
Number of physicians stating no times advisable....	24	33	15	16	12	100	536	636
Beer: Number of physicians stating times advisable.....	6	4	10	4	6	30	74	104
Number of physicians stating no times advisable.....	29	38	20	23	13	123	618	741
Wine: Number of physicians stating times advisable.....	7	5	13	8	7	40	77	117
Number of physicians stating no times advisable.....	28	36	18	20	12	114	607	721
Do you hold a federal permit?								
Yes.....	15	4	15	13	5	52	69	121
No.....	36	39	27	20	17	139	688	827
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?								
Yes (limit not specified).....	7	12	10	9	4	42	166	208
Restricted absolutely .....	4	5	1	6	..	16	181	197
1 to 50 prescriptions.....	10	6	3	3	..	22	74	96
51 to 100 prescriptions.....	10	11	10	7	3	41	150	191
More than 100 prescriptions.....	1	..	..	1	..	2	19	21
Total.....	32	34	24	26	7	123	590	713
No restriction .....	26	26	27	14	23	116	331	447
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?								
Yes.....	36	35	31	25	13	140	610	750
No.....	21	23	21	15	16	96	306	402

of the prescriptions are for general disability. This alone tells the tale.—Johnson County.

The Harrison Narcotic Law is an ideal law; in time its limitations for good will be unlimited. If some such law could be enacted as this, it seems to me it would be a very satisfactory law. I would not want whisky turned loose on my state again without restrictions. Many doctors will respect their privilege; some will not. I am slow to restrict men's privileges when extended in the direction that is calculated to help the race; but it has been the fewest times in nineteen years' experience in the practice, if ever, of medicine, that I've seen whisky help my patient. I used to give it freely in a fairly good and liberal practice. I've stuck close to that drug that helped my patient most. I've been "not the first by whom the new is tried, nor yet the last to lay the old aside"; but after all these years of as close observation as I am capable, I am forced to this unbiased conclusion.—DeKalb County.

We get all we want here, but we have to buy it from bootleggers at from \$10 to \$20 a quart, which is a great hardship on some people. There is plenty for beverage and none for medical use. Heretofore respectable people were not lawless criminals.—Nashville.

Individually, I think alcohol and its different preparations should be placed under the same restrictions as are narcotics. There should certainly be some restrictions thrown around its prescribing. As it is in our state (Tennessee) we must become law violators to get it, and often the article is inferior. The present law encourages the illicit manufacture and sale of whisky because those who need it must patronize such manufacturers and dealers.—Knoxville.

El Paso, yes 19; no, 11. Total for the cities, yes, 124; no, 118; for the rural districts, yes, 367; no, 579; for the state, yes, 491; no, 697.

On the question "Is beer a necessary therapeutic agent?" the vote was: Dallas, yes, 12; no, 46; Houston, yes, 10; no, 50; San Antonio, yes, 18; no, 34; Fort Worth, yes, 15; no, 25; El Paso, yes, 17; no, 13. Total for the cities, yes, 72; no, 168; for the rural districts, yes, 194; no, 737; for the state, yes, 266; no, 905.

On the question "Is wine a necessary therapeutic agent?" the vote was: Dallas, yes, 17; no, 42; Houston, yes, 18; no, 41; San Antonio, yes, 24; no, 29; Fort Worth, yes, 19; no, 21; El Paso, yes, 17; no, 12. Total for the cities, yes, 95; no, 145; for the rural districts, yes, 220; no, 722; for the state, yes, 315; no, 867.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 276; no, 882.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month,



301 physicians had found it advisable to prescribe whisky, and 636 had not found it advisable; 104 had found it advisable to prescribe beer, and 741 had not found it advisable; 117 had found it advisable to prescribe wine, and 721 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 121; no, 827.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 713 stated that they should be restricted, and 447 did not believe such restrictions necessary; 208 physicians answered yes, but did not specify a limit; 197 stated that the number should be restricted to absolutely none; 96 considered from 1 to 50 prescriptions in three months sufficient; 191 considered from 51 to 100 satisfactory, and 21 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 750; no, 402.

#### COMMENTS

I hold that if I am competent to determine when quinin or Epsom salt is indicated I am equally well qualified to prescribe alcoholic stimulants. In addition to federal regulations, Texas has another law (state) to comply with. I resent this attitude toward the profession, and consequently have never applied for a permit.—*Houston.*

I think there are times when whisky can be used to advantage and take the place of some more dangerous drug, like morphin. I have in mind many cases of dysmenorrhea which I have temporarily relieved with a hot whisky, thus avoiding the use of opiates and having to contend with its miserable after-effects. I really think that whisky has a place in the field of medicine; but so far as its being an absolutely necessary therapeutic agent, I class it with thousands of other medicines which we could easily get along without if we had to.—*Marlin.*

I hold both a federal and a state permit to use alcohol only, and for laboratory purposes only, both secured with much difficulty and considerable expense. I do not hold a permit to prescribe alcoholic liquors and do not want one because of the annoyance from those who desire to obtain liquors for illegal purposes; hence I have never prescribed liquors, but rarely I would like to do so. I do not think that alcoholic liquors are of value as medicines per se, but are useful as a means of securing the administration of foods, and rarely as a hypnotic, although I believe other hypnotics serve as well. I think the greatest objection to our prohibition laws as applied to physicians is found in the difficulty of securing alcohol for laboratory and similar purposes by individual doctors operating their own clinical laboratories on a small scale. I think it is a real hindrance to the progress of many physicians in that respect.—*Palestine.*

Alcohol and its preparations, properly handled by drug stores and physicians as are narcotics, will be of assistance to suffering humanity; but the legal restrictions, red tape and cost in our state of securing a permit make it impossible for a busy practitioner to meddle with it.—*Palestine.*

#### UTAH

The state prohibition law went into effect, Aug. 1, 1917. Physicians are not permitted to prescribe any compound containing more than 0.5 per cent. of alcohol by volume which is capable of being used as a beverage, or any medicine containing more than 4 ounces of alcohol.

Questionnaires were sent to 229 physicians in Utah, and 133, or 58 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Salt Lake City, yes, 23; no, 21; for the rural districts, yes, 41; no, 47; for the state, yes, 64; no, 68.

On the question "Is beer a necessary therapeutic agent?" the vote was: Salt Lake City, yes, 8; no, 35; for the rural districts, yes, 23; no, 62; for the state, yes, 31; no, 97.

On the question "Is wine a necessary therapeutic agent?" the vote was: Salt Lake City, yes, 12; no, 30; for the rural districts, yes, 25; no, 59; for the state, yes, 37; no, 89.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 35; no, 95.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 28 had found it advisable to prescribe whisky, and 69 had not found it advisable; 10 had found it necessary to prescribe beer, and 77 had not found it advisable; 11 had found it advisable to prescribe wine, and 77 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 2; no, 32.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 83 stated that they should be restricted, and 38 did not believe

such restrictions necessary; 27 answered yes, but did not specify a limit; 23 stated that the number should be restricted to absolutely none; 13 considered from 1 to 50 prescriptions in three months sufficient; 19 considered from 51 to 100 satisfactory, and 1 physician considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 90; no, 34.

#### COMMENTS

Restrictions should be under government license similar to the present narcotic restrictions, sufficiently flexible to permit of use in case of need, and sufficiently binding to prevent the abuse of the privilege to a degree provably regular.—*Salt Lake City.*

I believe that nothing should be withheld from the ethical medical man that he would care to prescribe; but, outside its use as a solvent for drugs, I see no use in the prescribing of whisky, wine or beer as

#### RESULTS IN UTAH

	SALT LAKE CITY		GRAND TOTAL
	CITY	RURAL	
UTAH			
Number of physicians.....	239	257	496
Questionnaires sent.....	82	147	229
Questionnaires returned.....	44	89	133
Percentage of returns.....	54	61	58
General practitioners.....	28	84	112
Surgeons.....	6	2	8
Specialists.....	10	3	13
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?			
Yes.....	23	41	64
No.....	21	47	68
Do you regard beer as a necessary therapeutic agent in the practice of medicine?			
Yes.....	8	23	31
No.....	35	62	97
Do you regard wine as a necessary therapeutic agent in the practice of medicine?			
Yes.....	12	25	37
No.....	30	59	89
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?			
Yes.....	14	21	35
No.....	29	66	95
How many times have you found it advisable to prescribe these liquors in a month?			
Whisky: Number of physicians stating times advisable.....	3	25	28
Number of physicians stating no times advisable.....	26	43	69
Beer: Number of physicians stating times advisable.....	1	9	10
Number of physicians stating no times advisable.....	27	50	77
Wine: Number of physicians stating times advisable.....	2	9	11
Number of physicians stating no times advisable.....	27	50	77
Do you hold a federal permit?			
Yes.....	1	1	2
No.....	16	16	32
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?			
Yes (limit not specified).....	11	16	27
Restricted absolutely.....	9	14	23
1 to 50 prescriptions.....	5	8	13
51 to 100 prescriptions.....	4	15	19
More than 100 prescriptions.....	..	1	1
Total.....	29	54	83
No restriction.....	7	31	38
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?			
Yes.....	32	58	90
No.....	8	26	34

such. To compel men who are subjected to the keenest of competition to prescribe alcohol in any form, by legislation, is simply bastardizing the profession.—*Emery County.*

In regard to regulating the number of prescriptions a physician may write for alcoholics, I think it would be fair to limit them, because the average physician would not be interfered with, in his work, by such a limit.—*Provo.*

#### VIRGINIA

The state prohibition law went into effect, Nov. 1, 1916. This law was amended in 1918 and 1920. Physicians may prescribe not to exceed 2 quarts of alcohol or 1 gallon of malt or vinous liquors or 1 quart of brandy or whisky.

Questionnaires were sent to 932 physicians in Virginia, and 473, or 51 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Richmond, yes, 36; no, 23; Norfolk, yes, 25; no, 20; Roanoke, yes, 8; no, 10; Portsmouth, yes, 4; no, 2.



Total for the cities, yes, 73; no, 55; for the rural districts, yes, 197; no, 147; for the state, yes, 270; no, 202.

On the question "Is beer a necessary therapeutic agent?" the vote was: Richmond, yes, 10; no, 48; Norfolk, yes, 10; no, 35; Roanoke, yes, 6; no, 12; Portsmouth, yes, 1; no, 5. Total for the cities, yes, 27; no, 100; for the rural districts, yes, 85; no, 257; for the state, yes, 112; no, 357.

On the question "Is wine a necessary therapeutic agent?" the vote was: Richmond, yes, 14; no, 44; Norfolk, yes, 10; no, 33; Roanoke, yes, 6; no, 12; Portsmouth, yes, 2; no, 4. Total for the cities, yes, 32; no, 93; for the rural districts, yes, 92; no, 247; for the state, yes, 124; no, 340.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 102; no, 358.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 201 had found it advisable to prescribe whisky, and 188 had not found it advisable; 32 had found it advisable to prescribe beer, and 341 had not found it advisable; 46 had found it

his friends; so I even regretted this one misused prescription, and have seen no need of ever prescribing any alcoholic beverage.—*Richmond*.

The entire prohibition law should be repealed and the Harrison Narcotic Law amended to include alcohol in all of its forms and put in every drug store in the United States for sale under the same restrictions and penalties as moonshining and bootlegging. These will never be controlled until the general public knows that it can get a little good liquor for sickness if it should be needed. Now the people are dependent on the crook in my section, and are not in position to report or punish the crook because a great many of them have had to go to him in a time of need.—*Culpeper County*.

I do not believe that alcohol is absolutely necessary in any disease, though in some cases I do think it is helpful, though I think there are other drugs that will act as well. If a doctor believes that his patients are really benefited by the administration of alcohol, I do not believe that he should be limited in the number of prescriptions other than by the number of patients who need whisky, beer or wine.—*Pittsylvania*.

I am opposed to state or federal legislation prohibiting any licensed physician from prescribing whisky whenever his judgment suggests its use for the good of his patient.—*Rockingham County*.

I am not a "crank" on this subject, and can conceive of cases in which whisky in some form might be of service; but I do not believe that any "unnecessary suffering or death" has been caused by lack of it.—*Norfolk*.

RESULTS IN VIRGINIA							
VIRGINIA	Richmond	Norfolk	Roanoke	Portsmouth	Total Cities	Rural	Grand Total
Number of physicians.....	334	252	101	51	738	1,807	2,545
Questionnaires sent .....	112	73	34	14	233	699	932
Questionnaires returned .....	59	45	18	6	128	345	473
Percentage of returns.....	53	62	53	43	55	49	51
General practitioners .....	45	29	15	5	94	308	402
Surgeons .....	9	4	..	1	14	18	32
Specialists .....	5	12	3	..	20	19	39
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?							
Yes.....	36	25	8	4	73	197	270
No.....	23	20	10	2	55	147	202
Do you regard beer as a necessary therapeutic agent in the practice of medicine?							
Yes.....	10	10	6	1	27	85	112
No.....	48	35	12	5	100	257	357
Do you regard wine as a necessary therapeutic agent in the practice of medicine?							
Yes.....	14	10	6	2	32	92	124
No.....	44	33	12	4	93	247	340
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?							
Yes.....	7	7	2	..	16	86	102
No.....	49	35	16	5	105	253	358
How many times have you found it advisable to prescribe these liquors in a month?							
Whisky: Number of physicians stating times advisable.....	30	12	8	3	53	148	201
Number of physicians stating no times advisable....	19	18	5	1	43	145	188
Beer: Number of physicians stating times advisable.....	..	3	1	..	4	28	32
Number of physicians stating no times advisable.....	43	26	10	4	83	258	341
Wine: Number of physicians stating times advisable.....	6	3	3	..	12	34	46
Number of physicians stating no times advisable.....	38	26	9	4	77	247	324
Do you hold a federal permit?							
Yes.....	35	10	9	2	56	108	164
No.....	18	25	8	4	55	202	257
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?							
Yes (limit not specified).....	3	6	2	..	11	39	50
Restricted absolutely .....	3	4	1	..	8	29	37
1 to 50 prescriptions.....	5	..	2	2	10	29	39
51 to 100 prescriptions.....	21	11	7	..	39	79	118
More than 100 prescriptions.....	..	..	..	..	..	7	7
Total.....	33	21	12	2	68	183	251
No restriction .....	25	21	6	3	55	159	214
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?							
Yes.....	35	19	14	8	71	185	256
No.....	23	22	4	2	51	157	208

advisable to prescribe wine, and 324 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 164; no, 257.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 251 stated that they should be restricted, and 214 did not believe such restrictions necessary; 50 physicians answered yes, but did not specify a limit; 37 stated that the number should be restricted to absolutely none; 39 considered from 1 to 50 prescriptions in three months sufficient; 118 considered from 51 to 100 satisfactory, and 7 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 256; no, 208.

COMMENTS

I prescribed once in 1919 on my federal permit when an old man with chronic bronchitis requested it, and he passed the bottle around to

WASHINGTON

The state prohibitory law went into effect, Jan. 1, 1916, and was amended in 1917. No provision is made for prescribing either alcohol or alcoholic liquors. Legally qualified physicians may secure alcohol for scientific purposes only, on permits from the county auditor, but it will not permit them to prescribe or administer it in any form which can be used for a beverage.

Questionnaires were sent to 715 physicians in Washington, and 434, or 61 per cent., were returned.

To the question "Do you regard whisky as a necessary therapeutic agent in the practice of medicine?" the replies were: yes, 201; no, 225, thus distributed: Seattle, yes, 56; no, 51; Spokane, yes, 18; no, 22; Tacoma, yes, 4; no, 27; towns less than 50,000, and rural, yes, 123; no, 125.

To the question "Do you regard beer as a necessary therapeutic agent?" the replies were: yes, 112; no, 315. The total



replies from cities of 50,000 or more were: yes, 50; no, 131. The replies from the remainder of the state were: yes, 62; no, 184.

To the question "Do you regard wine as a necessary therapeutic agent?" the replies were: yes, 126; no, 297, thus distributed: cities of 50,000 or more: yes, 54; no, 123; remainder of the state: yes, 72; no, 174.

The question "Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?" was answered: yes, 123; no, 287.

The number of physicians who reported that they had found it advisable to prescribe liquor was: whisky, 136 advisable; 214 not advisable. Beer, 62 advisable; 246 not advisable. Wine, 71 advisable; 239 not advisable.

To the question, "Do you hold a federal permit?" the replies were: yes, 10; no, 112.

To the question whether there should be any limit to the number of prescriptions for alcoholic liquors that a physician should write, 265 replied that there should be, and 134, that

There are many drugs and therapeutic measures whose absence would not cause suffering or death, and yet whose use would add to the patient's comfort and assist in recovery. Alcohol in any of its forms is, in my opinion, one of these.—*Seattle*.

Many old people find it helpful and, oh boy, when you feel a cold coming on and you ache all over—but what's the use! This state was dry before the Eighteenth Amendment was born. And she is going to stay dry and we are all mighty glad of it.—*Adams County*.

I have been in active, general practice for twenty years and I have found that whisky is almost a specific in influenza.—*Kitsap County*.

I believe whisky, wine and beer to have a fairly wide and beneficial use in the treatment of the sick. When an indication for their use arises I do not think physicians should be restricted in the use of them.—*Skagit County*.

WEST VIRGINIA

The state prohibition law went into effect, July 1, 1914. This law, as amended in 1921, provides for the sale by druggists of pure grain alcohol only for medicinal purposes, and that physicians may use alcohol subject to the provisions of the federal law.

RESULTS IN WASHINGTON

WASHINGTON	Seattle	Spokane	Tacoma	Total Cities	Rural	Grand Total
Number of physicians.....	586	217	158	961	836	1,797
Questionnaires sent .....	187	72	48	307	408	715
Questionnaires returned .....	111	41	31	183	251	434
Percentage of returns.....	59	57	65	60	62	61
General practitioners .....	82	27	21	130	232	362
Surgeons .....	19	6	5	30	11	41
Specialists .....	10	8	5	23	8	31
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?						
Yes.....	56	18	4	78	123	201
No.....	51	22	27	100	125	225
Do you regard beer as a necessary therapeutic agent in the practice of medicine?						
Yes.....	35	11	4	50	62	112
No.....	74	30	27	131	184	315
Do you regard wine as a necessary therapeutic agent in the practice of medicine?						
Yes.....	37	13	4	54	72	126
No.....	70	26	27	123	174	297
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?						
Yes.....	34	10	4	48	75	123
No.....	66	30	27	123	164	287
How many times have you found it advisable to prescribe these liquors in a month?						
Whisky: Number of physicians stating times advisable.....	34	12	5	51	85	136
Number of physicians stating no times advisable.....	48	20	25	93	121	214
Beer: Number of physicians stating times advisable.....	13	7	2	22	40	62
Number of physicians stating no times advisable.....	57	20	26	103	143	246
Wine: Number of physicians stating times advisable.....	17	7	2	26	45	71
Number of physicians stating no times advisable.....	54	21	26	101	138	239
Do you hold a federal permit?						
Yes.....	3	1	1	5	5	10
No.....	21	9	14	44	68	112
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?						
Yes (limit not specified).....	14	10	7	31	59	90
Restricted absolutely .....	18	9	5	32	31	63
1 to 50 prescriptions.....	8	6	..	14	29	43
51 to 100 prescriptions.....	23	4	6	33	28	61
More than 100 prescriptions.....	2	..	..	2	6	8
Total.....	65	29	18	112	153	265
No restriction.....	33	10	12	55	79	134
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?						
Yes.....	74	32	18	124	169	293
No.....	29	8	11	48	74	122

there should not. There were 90 who failed to specify the limit; 63 would restrict prescribing absolutely; 43 would limit prescriptions to from 1 to 50 in three months; 61 placed the limit at from 51 to 100 in three months, and 8 placed the limit above 100 in that time.

Opinions on the question whether physicians should be restricted in prescribing alcoholic liquors showed 293 for restrictions and 122 against restrictions.

COMMENTS

At first glance it would seem to be an unwarranted interference on the part of those unskilled in medicine to limit the number of prescriptions to be given by a physician. Since the medical profession includes a good many—too many for the good of the profession—men who are willing for a price to prostitute their ability and their profession by issuing as many prescriptions for liquor as the law will allow and on the slightest pretext, the number should be restricted.—*Seattle*.

Liquor prescriptions should be on a regular printed form. They should be fillable at only one agency, and this should be a federal agency.—*Seattle*.

Questionnaires were sent to 746 physicians in West Virginia, and 444, or 60 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: Huntington, yes, 11; no, 12; Wheeling, yes, 13; no, 11. Total for the cities, yes, 24; no, 23; for the rural districts, yes, 182; no, 211; for the state, yes, 206; no, 234.

On the question "Is beer a necessary therapeutic agent?" the vote was: Huntington, yes, 6; no, 17; Wheeling, yes, 10; no, 14. Total for the cities, yes, 16; no, 31; for the rural districts, yes, 90; no, 297; for the state, yes, 106; no, 328.

On the question "Is wine a necessary therapeutic agent?" the vote was: Huntington, yes, 9; no, 14; Wheeling, yes, 10; no, 14. Total for the cities, yes, 19; no, 28; for the rural districts, yes, 104; no, 280; for the state, yes, 123; no, 308.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 114; no, 306.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month,



116 had found it advisable to prescribe whisky, and 225 had not found it advisable; 33 had found it advisable to prescribe beer, and 306 had not found it advisable; 49 had found it advisable to prescribe wine, and 291 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 15; no, 180.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 237 stated that they should be restricted, and 181 did not consider such restrictions necessary; 77 physicians answered yes, but did not specify a limit; 65 stated that the number should be limited to absolutely none; 37 considered from 1 to 50 prescriptions in three months sufficient; 56 considered from 51 to 100 satisfactory, and 2 physicians considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote for restrictions was 279; against restrictions, 149.

VERMONT

The federal law went into effect in Vermont, July 1, 1919. The state law of 1921 permits physicians holding federal permits to prescribe alcoholic liquors for medicinal use only. A copy of the federal permit must be filed with the secretary of state.

Questionnaires were sent to 253 physicians in Vermont, and 154, or 61 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 79; no, 74.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 27; no, 124.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 46; no, 103.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 31; no, 114.

RESULTS IN WEST VIRGINIA

WEST VIRGINIA	Huntington	Wheeling	Total Cities	Rural	Grand Total
Number of physicians.....	111	102	213	1,504	1,717
Questionnaires sent .....	36	42	78	668	746
Questionnaires returned .....	23	24	47	397	444
Percentage of returns.....	64	57	60	59	60
General practitioners .....	12	19	31	370	401
Surgeons .....	6	4	10	16	26
Specialists .....	5	1	6	11	17
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?					
Yes.....	11	13	24	182	206
No.....	12	11	23	211	234
Do you regard beer as a necessary therapeutic agent in the practice of medicine?					
Yes.....	6	10	16	90	106
No.....	17	14	31	297	328
Do you regard wine as a necessary therapeutic agent in the practice of medicine?					
Yes.....	9	10	19	104	123
No.....	14	14	28	280	308
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?					
Yes.....	7	8	15	99	114
No.....	15	16	31	275	306
How many times have you found it advisable to prescribe these liquors in a month?					
Whisky: Number of physicians stating times advisable.....	7	6	13	103	116
Number of physicians stating no times advisable.....	8	11	19	206	225
Beer: Number of physicians stating times advisable.....	2	4	6	27	33
Number of physicians stating no times advisable.....	13	12	25	281	306
Wine: Number of physicians stating times advisable.....	4	5	9	40	49
Number of physicians stating no times advisable.....	11	11	22	269	291
Do you hold a federal permit?					
Yes.....	1	..	1	14	15
No.....	13	2	15	165	180
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?					
Yes (limit not specified).....	3	3	6	71	77
Restricted absolutely .....	1	6	7	58	65
1 to 50 prescriptions.....	..	..	..	37	37
51 to 100 prescriptions.....	5	4	9	47	56
More than 100 prescriptions.....	..	..	..	2	2
Total.....	9	13	22	215	237
No restriction .....	13	9	22	159	181
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?					
Yes.....	13	15	28	251	279
No.....	10	8	18	131	149

COMMENTS

Physicians should be allowed to prescribe alcohol only; this would allow the patients the benefit of any possible doubt, provided the physician thought the alcohol effect was required. It would tend to abolish the use of these as alcoholic beverages.—*Wheeling*.

Our state law is most drastic. The medical profession has absolutely no privileges under it. We cannot have in our possession a dram of alcohol (unmedicated), whisky, wine, beer, etc. We are allowed to buy not more than a pint of medicated alcohol at one time. The same privilege is given to the street bum.—*Wheeling*.

Personally, I am a total abstainer, but am sorry to say that I have advised the friends of some of my patients to secure a little good moonshine (if there is such a thing) in several cases in which I honestly thought it would do the patients good. I know this is bad advice for a doctor to give, but I feel that in case of life or death the laws should not interfere, and that we should not be deprived of any agent, although I believe that the prescribing or dispensing of alcohol should be regulated similar to opium and the other narcotics.—*Logan County*.

If whisky is allowed, it should in my opinion be controlled by the government and regulated by dispensaries under government supervision and taken out of the hands of physicians. This method of control is for beverage, not for medicinal use.—*Bluefield*.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 62 had found it advisable to prescribe whisky, and 59 had not found it advisable; 4 had found it advisable to prescribe beer, and 83 had not found it advisable; 22 had found it advisable to prescribe wine, and 73 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 67; no, 72.

On the question as to whether there should be any limit to the number of prescriptions for alcoholic liquors that a physician should write, 83 stated that there should be restrictions, and 66 did not believe that such restrictions were necessary; 42 physicians answered yes, but did not specify a limit; 8 stated that the number of prescriptions should be limited to absolutely none; 10 considered from 1 to 50 prescriptions in three months sufficient; 23 considered from 51 to 100 satisfactory, and no physician of those replying considered 100 insufficient.



On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 87; no, 63.

COMMENTS

In my own practice, many more cases of suffering and possibly death might have resulted had I been obliged to depend upon the strict operation of the federal law, but I have usually been able to secure enough spirits from my friends to tide over any emergency. The nearest drug

RESULTS IN VERMONT

Number of physicians.....	594
Questionnaires sent .....	253
Questionnaires returned .....	154
Percentage of returns.....	61
General practitioners .....	138
Surgeons .....	8
Specialists .....	8
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	79
No .....	74
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	27
No .....	124
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	46
No .....	103
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	31
No .....	114
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable....	62
Number of physicians stating no times advisable..	59
Beer: Number of physicians stating times advisable.....	4
Number of physicians stating no times advisable....	83
Wine: Number of physicians stating times advisable.....	22
Number of physicians stating no times advisable....	73
Do you hold a federal permit?	
Yes .....	67
No .....	72
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	42
Restricted absolutely .....	8
1 to 50 prescriptions.....	10
51 to 100 prescriptions.....	23
More than 100 prescriptions.....	0
Total .....	83
No restriction .....	66
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	87
No .....	63

store holding a permit to fill prescriptions is 15 miles distant. I believe that a physician professionally and morally qualified to write one prescription for whisky should be permitted to use his judgment and discretion as to the number of prescriptions he should write. The care of his own reputation and the good opinion of his colleagues and the community should be the surest check on any indiscretion in prescription writing.—*Windsor*.

I feel that the use of alcohol in medicine is very limited, but that if we wish to use it we should have that right without so much red tape.—*Orange County*.

I have no license to prescribe spirituous liquors, as there is no licensed drug store within 8 miles of me. I am, however, located on the border, and in cases of emergency we can bootleg it across the border.—*Orleans County*.

WYOMING

The federal prohibition act became effective in Wyoming, July 1, 1919. Previous to that time, part of the state had been under local option. The state prohibition law became effective, June 30, 1919. The constitutional prohibition amendment went into effect, Jan. 1, 1920. Physicians may prescribe spirituous liquors in quantities not to exceed 1 pint for each patient in ten days. Permits are issued by the state commissioner of law enforcement and are good for one year. Physicians may prescribe for patients after careful physical examination of the patient on the best information obtainable. Records of all prescriptions must be preserved.

Questionnaires were sent to 145 physicians in Wyoming, and 92, or 63 per cent., were returned.

On the question "Is whisky a necessary therapeutic agent?" the vote was: yes, 52; no, 40.

On the question "Is beer a necessary therapeutic agent?" the vote was: yes, 31; no, 60.

On the question "Is wine a necessary therapeutic agent?" the vote was: yes, 35; no, 55.

On the question as to whether physicians had witnessed unnecessary suffering or death from enforcement of the prohibition laws, the replies were: yes, 31; no, 59.

On the question as to the number of times physicians had found it advisable to prescribe alcoholic liquors per month, 28 had found it advisable to prescribe whisky, and 43 had not found it advisable; 13 had found it advisable to prescribe beer, and 48 had not found it advisable; 14 physicians had found it advisable to prescribe wine, and 44 had not found it advisable.

To the question "Do you hold a federal permit?" the replies were: yes, 18, no, 51.

On the question as to whether physicians should be restricted in the number of prescriptions for alcoholic liquors, 39 stated that they should be restricted, and 52 did not believe such restrictions necessary; 10 physicians answered yes, but did not specify a limit; 15 stated that the number should be restricted to absolutely none; 6 considered from 1 to 50 prescriptions in three months sufficient; 7 considered from 51 to 100 prescriptions satisfactory, and 1 physician considered 100 insufficient.

On the question "Should physicians be restricted in prescribing alcoholic liquors?" the vote was: yes, 43; no, 47.

RESULTS IN WYOMING

Number of physicians.....	267
Questionnaires sent .....	145
Questionnaires returned .....	92
Percentage of returns.....	63
General practitioners .....	86
Surgeons .....	4
Specialists .....	2
Do you regard whisky as a necessary therapeutic agent in the practice of medicine?	
Yes .....	52
No .....	40
Do you regard beer as a necessary therapeutic agent in the practice of medicine?	
Yes .....	31
No .....	60
Do you regard wine as a necessary therapeutic agent in the practice of medicine?	
Yes .....	35
No .....	55
Have instances occurred in your own practice in which unnecessary suffering or death has resulted from the enforcement of prohibition laws?	
Yes .....	31
No .....	59
How many times have you found it advisable to prescribe these liquors in a month?	
Whisky: Number of physicians stating times advisable....	28
Number of physicians stating no times advisable..	43
Beer: Number of physicians stating times advisable.....	13
Number of physicians stating no times advisable....	48
Wine: Number of physicians stating times advisable.....	14
Number of physicians stating no times advisable....	44
Do you hold a federal permit?	
Yes .....	18
No .....	51
The present regulations limit the number of prescriptions to 100 in three months. In your opinion, should there be any limit to the number of prescriptions for alcoholic liquors a physician may write?	
Yes (limit not specified).....	10
Restricted absolutely .....	15
1 to 50 prescriptions.....	6
51 to 100 prescriptions.....	7
More than 100 prescriptions.....	1
Total .....	39
No restriction .....	52
In your opinion, should physicians be restricted in prescribing whisky, beer and wine?	
Yes .....	43
No .....	47

COMMENTS

You can't prescribe it in the "emergency" as the law is now. How can the patient 25 miles in the country get it, or after the drug stores close at night? A limited amount purchased by government permit will allow any temperate family to have some on hand. Now it is "moonshine" or something worse. Not entirely a necessity, more a satisfaction—comfort, belief of protection before the doctor arrives, etc.—*Sheridan*.

An honest man does not need to be limited, or tied up with so much red tape as now exists.—*Thermopolis*.



## Marriages

DAVID LIVINGSTON RUNDLETT, Sioux Falls, S. D., to Miss Lydia Maria Frederickson of Hanska, Minn., January 1.

CLARENCE MILTON SONNE, Philadelphia, to Miss Lillian Dissinger Carpenter of Lebanon, Pa., recently.

ALBERT MARINE WESTON, Los Angeles, to Dr. EDITH STEINBERGER of Sierra Madre, Calif., December 23.

ALBERT JOHN WEIRICK, Marseilles, Ill., to Miss Maude Beale of Crown Point, Ind., January 12.

GILBERT RICHARD MICKLETHWAITE to Miss Margaret Legler, both of Portsmouth, Ohio, December 27.

REZIN REAGAN, Sioux Falls, S. D., to Miss Helen A. Johnson of Cokato, Minn., recently.

RICHARD RAYMOND CRANMER to Miss Mildred Wheeler, both of Minneapolis, in December.

CLINTON G. BECKETT to Miss Florence Hildebrand, both of Attica, Ind., December 25.

EDWIN E. CAMPBELL to Miss Marcia Rettit, both of Watertown, N. Y., January 3.

FRANK W. BREY to Miss Elizabeth Daub, both of Wabasso, Minn., in December.

IVER STOLAND to Miss Nellie Kleppen, both of Eau Claire, Wis., in November.

CHARLES KAHN to Miss Gertrude Moak, both of Chicago, December 29.

## Deaths

**William Phillips Carr**, Washington, D. C.; Columbian University, Washington, D. C., 1888; died, December 27, from heart disease, at Summit Point, W. Va. Dr. Carr was professor of visceral anatomy, 1891-1895, physiology, 1894-1906, clinical surgery since 1906, George Washington University Medical School, Washington; member of the Medical Society of Virginia; Southern Surgical and Gynecological Association and the Association of American Anatomists.

**George Erety Shoemaker** ☉ Philadelphia; University of Pennsylvania, Philadelphia, 1882; for twenty-eight years member of the staff of the Presbyterian Hospital; consulting gynecologist of the Woman's Hospital, Philadelphia, and the Epileptic Hospital and Colony Farm, Oakbourne, Pa.; specialized in obstetrics; member of the Philadelphia Academy of Surgery, the Obstetrical Society of Philadelphia; died suddenly, January 5, from heart disease, aged 65.

**Wesley Grove Vincent** ☉ New York City; Yale University, School of Medicine, New Haven, Conn., 1900; professor of surgery in the Post-Graduate Hospital; former attending physician St. Bartholomew's Clinic, New York City; member of the New York Academy of Medicine and the Medical Association of Greater New York; died suddenly from heart disease in his office, while attending a patient, January 3, aged 50.

**Ernest Waldron Cheyney**, Montgomery, Ala.; University of Pennsylvania, 1917; director of the state laboratory and Pasteur Institute, Montgomery; formerly Edward Hickling Bradford fellow in medical research, Medical School of Harvard University, 1919-1920; at one time taught bacteriology in the University of Wisconsin, Madison, and served as state bacteriologist; died, December 25, at the home of his father in Philadelphia, aged 31.

**Thomas Kelso Cruse**, Wappingers Falls, N. Y.; Bellevue Hospital Medical College, New York City, 1870; health officer of Wappingers Falls; formerly professor of genito-urinary diseases, College of Physicians and Surgeons, Chicago; served as medical examiner for the U. S. Pension Bureau, Washington, D. C.; died, December 31, from septicemia following gangrene of the foot, aged 73.

**William Herman Kennison**, Madison, Me.; Boston University School of Medicine, 1899; member of the school committee; served during the World War as lieutenant, M. C., U. S. Army; died, December 26, at the Massachusetts Homeopathic Hospital, Boston, following an operation on the stomach, aged 52.

**Henry C. Register** ☉ Haverford, Pa.; Jefferson Medical College, Philadelphia, 1874; clinical teacher of dentistry at the Philadelphia Dental College and the University of Pennsylvania; veteran of the Civil War; inventor of many appliances used by practicing dentists; died, December 22, from senility, aged 77.

**Clarence Shelton McClintock**, Kansas City, Mo.; Kansas Medical College, Topeka, 1893; department of surgery, Kansas City University of Medicine and Surgery; formerly occupied the chair of anatomy, Kansas Medical College, Topeka; died suddenly, from heart disease, December 29, in his office, aged 56.

**William Pierce Matthews**, Sacramento, Calif.; Washington University School of Medicine, Baltimore, 1868; former secretary of the state board of health of California, and member of the state legislature; died, December 29, from cerebral hemorrhage, at the home of his daughter, in Oakland, Calif., aged 78.

**Hugh Donald Scott**, Monroe, Va.; Medical College of Virginia, Richmond, 1884; member of the Medical Society of Virginia; member of the board of supervisors; for two sessions, member of the state legislature; died suddenly, from heart disease, December 29, at the home of a patient, aged 64.

**Franklin Burt**, Lahaina, Hawaii; University of Toronto, Faculty of Medicine, Toronto, Canada, 1879; member of the Medical Society of Hawaii; surgeon of the Pioneer Sugar Company's Hospital, Maui Island, where he died, December 10, from tuberculosis and chronic nephritis, aged 63.

**Arthur Lucius Davis**, Durango, Colo.; Gross Medical College, Denver, 1895; member of the Colorado State Medical Society; member of the Colorado Ophthalmological Society; shot himself through the head with a revolver, December 29, while suffering from a nervous breakdown, aged 53.

**Albert Wilfred Adams**, Bellevue, Mich.; University of Michigan, Ann Arbor, 1872; member of the Michigan State Medical Society; Bellevue Hospital Medical College, New York City, 1873; practitioner for nearly half a century; died, recently, following a long illness, aged 74.

**Martha Gurine Thorwick di Giannini**, Ventura, Calif.; College of Physicians and Surgeons, Chicago, 1901; formerly clinician to the Pacific Dispensary of the Children's Hospital, San Francisco; died, November 16, from carcinoma of the stomach, in San Francisco, aged 58.

**Charles Newton Huston**, Hamilton, Ohio; Medical College of Ohio, Cincinnati, 1887; served as city school examiner and on the board of education; also a druggist; formerly city physician and health officer; died, December 11, from cerebral hemorrhage, aged 65.

**Hugh B. Smith**, Nashville, Tenn.; University of Nashville, 1905; member of the Tennessee State Medical Association; was found dead in bed at the Savoy Hotel, December 26, with a bullet wound through the heart, presumably self-inflicted, aged 43.

**William Crawford Gallagher**, Slaterville Springs, N. Y.; Geneva Medical College, Geneva, N. Y., 1863; member of the Medical Society of the State of New York; former member and chairman of the county board of supervisors; died, December 24, aged 81.

**Eugene Bascom Poole**, La Grange, Ga.; University of Alabama School of Medicine, Tuscaloosa, Ala., 1885; member of the Medical Association of Georgia; died, December 25, at the Baptist Hospital, Jackson, Miss., following an operation, aged 69.

**H. Dewey Chamberlin**, Nevada, Iowa; University of Michigan, Ann Arbor, 1876; formerly city health officer and secretary of Story County board of pension examiners; died, December 31, at a hospital in Colorado Springs, Colo., aged 73.

**Thomas Jefferson Hower**, North Pleasureville, Ky.; Louisville (Ky.) Medical College, 1885; member of the Kentucky State Medical Association; member of the county board of health; died, December 24, from cardiac asthma, aged 59.

**James Gerrit Van Zwaluwenburg** ☉ Ann Arbor, Mich.; University of Michigan, Ann Arbor, 1908; member of the American Roentgen Ray Society; professor of roentgenology at his alma mater; died, January 5, after a short illness, aged 47.

**William Samuel Hutchinson**, Anderson, S. C.; Baltimore Medical College, Baltimore, 1897; member of the South Carolina Medical Association; died, December 29, at the Anderson County Hospital, from chronic nephritis, aged 46.

☉ Indicates "Fellow" of the American Medical Association.



**Harry Leedon Thomas**, Langhorne, Pa.; Jefferson Medical College, Philadelphia, 1893; member of the Medical Society of the State of Pennsylvania; died, December 25, following an operation in a Philadelphia hospital, aged 51.

**Arthur P. Schulze**, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department of Ohio Wesleyan University, 1905; former physician at St. John's Hospital; died, December 12, at Grace Hospital, aged 38.

**Matthew Philander Cady**, Birnamwood, Wis.; College of Physicians and Surgeons, Chicago, 1905; member of the State Medical Society of Wisconsin; died, December 31, from pneumonia, at the City Hospital, Antigo, aged 61.

**Glenn A. Howard**, Rockford, Ill.; College of Physicians and Surgeons, Chicago, 1902; member of the Illinois State Medical Society; died, December 29, from pleuropneumonia, at St. Anthony's Hospital, Rockford, aged 41.

**Johnson Rufus Woodward**, Oxford, Mass.; University of Vermont, College of Medicine, Burlington, 1888; formerly medical examiner for Worcester County; died in October, from paresis, at Newton, Mass., aged 56.

**Walter Watson** ♂ Mount Vernon, Ill.; Medical College of Ohio, Cincinnati, 1875; former superintendent of the State Hospital for Insane, Jacksonville; died, January 8, at St. Luke's Hospital, St. Louis, aged 70.

**Charles M. Menville**, Houma, La.; Louisville Medical College, Louisville, Ky., 1885; president of the state board of medical examiners; coroner; county health officer; died, December 30, aged 63.

**William James Hawkes**, Los Angeles; Hahnemann Medical College and Hospital of Philadelphia, 1867; president of the state homeopathic society; died suddenly, December 27, from heart disease, aged 73.

**Marion C. Foulks**, Canton, Ohio; University of Wooster, Medical Department, Cleveland, 1876; member of the Ohio State Medical Association; died, December 27, at the home of his son, aged 70.

**Mary J. Hays** ♂ Kane, Pa.; University of Buffalo, N. Y., 1897; superintendent and house physician of the Kane Summit Hospital, since its opening, 1894; died, December 29, from pneumonia, aged 59.

**Henry A. Moseley**, Dallas, Texas; University of Nashville, Nashville, Tenn., 1868; Confederate veteran; served as member of the school board; died, December 29, after a lingering illness, aged 78.

**John Christopher O'Conner** ♂ Manchester, N. H.; Medical School of Maine (Bowdoin Medical School), Brunswick and Portland, 1905; specialized in surgery; died, suddenly, January 6, aged 42.

**George E. Vaughan**, Cando, N. D.; St. Louis Medical College (Washington University) St. Louis, 1863; practitioner for more than half a century; died, December 22, from senility, aged 83.

**Luther B. Folk**, Columbia, S. C.; Medical College of the State of South Carolina, Charleston, 1875; served as county treasurer; died suddenly, December 12, from heart disease, aged 67.

**Ralph E. Fulton**, Mount Pleasant, Pa.; Jefferson Medical College, Philadelphia, 1869; practitioner for more than half a century; died, December 29, following a nervous breakdown, aged 73.

**David Laurence Smith** ♂ Spokane, Wash.; Marion Sims College of Medicine, St. Louis, 1892; formerly coroner and city health officer; died, December 20, from paresis, aged 72.

**Joseph D. Bennet**, Seattle, Wash.; University of Michigan, Ann Arbor, 1890; died, November 10, from cerebral hemorrhage, in the Fairview Hospital, Sultan, Wash., aged 63.

**Robert G. Keller**, Freeman, Mo.; Kansas City Medical College, 1894; member of the Missouri State Medical Association; died, December 21, from smallpox, aged 53.

**Leslie Earl Vandiver**, Brady, Neb.; John A. Creighton Medical College, Omaha, 1915; died in December following a short illness, at a hospital in Ogallala, aged 37.

**Gustavus Helbing**, Fort Worth, Texas; Eclectic Medical Institute, Cincinnati, 1887; died, November 8, from senility and the effects of a fractured hip, aged 77.

**Edward E. Kolar**, Chicago; Rush Medical College, Chicago, 1893; died, January 8, from tuberculosis, aged 50.

**Joseph P. Otto**, Chicago; Chicago Medical College (Northwestern University), Chicago, 1873; died, January 4, aged 72.

## Correspondence

### INFLUENCE OF ANTITYPHOID VACCINATION ON THE PRODUCTION OF HEART DISEASE

*To the Editor:*—Some time ago my attention was directed to certain statements, relative to the influence of antityphoid vaccination on the production of heart disease, made by Dr. Walter R. Hadwen of England in public addresses delivered in the United States and later published in certain American periodicals.

Some of these statements were so extraordinary and so at variance with the experience of the United States Army that it was considered desirable to secure further information relative to their validity from the director-general of the British Army Medical Service.

The following letter, which is self-explanatory, was written General Goodwin, Director-General, Army Medical Service, British Army:

Sept. 30, 1921.

Sir Thomas H. Goodwin,  
Dir. Gen., A. M. S.,  
War Office, Whitehall, S. W. 1,  
London, England.

*My dear General Goodwin:*—Recently a Dr. Walter R. Hadwen of Gloucester, England, who evidently is a strong antivaccinationist and antivivisectionist, has given a number of addresses on this subject in the United States. Two of these addresses, one delivered in Philadelphia and one delivered in Boston, have been published in the journals known as the *Starry Cross*, Volume 30, No. 6, June, 1921, and *Living Tissue*, Volume VI, No. 8, June, 1921, respectively. Dr. Hadwen made some most extraordinary statements in these two addresses relative to antityphoid vaccination as a causative factor in the production of heart disease. The following quotation from his statement in the *Starry Cross*, June, 1921, appears in his address:

When we put the next question, in order to bring out some more figures, we received this astounding and unexpected answer from the minister—that four millions [of pounds sterling] a year were being paid in pensions to discharged soldiers on account of their suffering from heart disease alone. Four millions a year! Every man had gone into the army perfectly healthy—with heart disease he would not have been accepted. He is now an invalid and he is receiving—these discharged and invalidated soldiers—four millions a year pension for heart disease! What is the meaning of it? What illness has there been that has caused this condition? In the treatment of my own cases I can find nothing in the world to cause this but antityphoid inoculation, and I guarantee that the greater part of that four millions a year that is being paid to these poor, wretched, ruined fellows is due to this abominable method of preparing British soldiers to fight the enemies of their country. It seems to me a most awful thing, that they should be prepared for the battle field by first of all poisoning their life blood with filthy concoctions of this horrible stuff. (Applause.)

The following statement is attributed to him in the address made in Boston and reproduced in *Living Tissue*, June, 1921.

We have lately heard that Dr. Eliot, a member of the British Parliament, stated that great discoveries have been made by means of Dr. Lewis' experiments upon the hearts of dogs, and by that means, it was stated in an interview to a newspaper, £46,000 annually had been saved in pensions to soldiers. I was rather staggered when I read that. I framed a question and gave it to a member of the House of Commons, who asked the Minister of Pensions if he would kindly inform the House if it were true that £46,000 had been saved by this new discovery, and if so, what the discovery was. The answer was that he didn't know anything at all about it, and that he knew there had been some experiments, but if further particulars were given he would make further inquiries. The member said, "Are you aware that the statement was made to an interviewer by Dr. Eliot?" He said no, he wasn't. So we put another question, and then the minister told us in reply nothing about the discoveries and said that there was no record of the saving of £46,000, but four millions of money were being paid at the present time in pensions to soldiers who were suffering from heart disease. That was a revelation that I hadn't bargained for—four millions of money paid to soldiers purely as pensions on account of heart disease. Why is this? None of those men would have been admitted to the army. Why is this? Well, I have had several of them as my own patients, and I will tell you why that heart disease has occurred. They have not had rheumatic fever, they have not had any of those various diseases that bring about heart disease, but in every case—fine, healthy



men they were before the war—they were inoculated with antityphoid serum, a fever was produced (because antityphoid serum is nothing more or less than blood poisoning) and it produces its effect sometimes upon the heart, sometimes upon the brain, and sometimes upon the kidneys. Its effect upon the heart had produced this result. I have patients at the present time who were perfectly healthy when they entered the army. They were inoculated with antityphoid serum, were sent immediately to the hospital, and were there for several weeks and then invalided out without doing a thing for their country. And if I have had cases of that sort, how many others have had similar cases? Four millions of money paid out for heart disease! And I have no hesitation in giving my own firm opinion publicly tonight that nine tenths of those cases were the direct result of the blood poison by antityphoid inoculation inflicted upon British soldiers. We had several cases in which the men were killed outright by it; numbers of them were ruined for life. That was the preparation the British Army received for the battlefield, in spite of which there has been a great amount of typhoid fever, although much of it was reduced in the statistics.

As you know, the American Army during the World War was completely protected against fevers of the typhoid-paratyphoid group by vaccination. More than four million complete antityphoid-paratyphoid inoculations were administered, and this office has no knowledge of any cases of heart disease or death that could be attributed to its administration.

I would very much appreciate any information you may feel at liberty to furnish as to whether the statements quoted above are in accordance with the facts, and especially whether your army statistics show that heart disease or death could be attributed to antityphoid-paratyphoid inoculation, as stated by Dr. Hadwen. We would furthermore appreciate any information that you may be able to furnish me as to whether any ill effects followed these inoculations. It is my desire to use such information as you may be able to give me for publication.

Very truly yours,  
M. W. IRELAND,  
Surgeon General, U. S. Army.

This office recently has received the following reply to the foregoing letter, which is also self-explanatory:

War Office, Whitehall, S. W. 1,  
November, 1921.

*Dear General Ireland:*—Although I feel sure that the following comments on Dr. Hadwen's published remarks will tell you nothing which you do not know already, still, I answer your questions with pleasure and have no objection to your publishing them.

Dr. Hadwen quotes an answer given in the House of Commons to a question asking the total amount of money given in the form of pensions to soldiers invalided for cardiovascular affections. This was stated at the time, no doubt correctly, to be £4,000,000 per annum. At the present time the amount approximates £2,700,000, which is drawn annually by about 100,000 pensioners, 60,000 of these being classed as "functional disease of the heart" and the remaining 40,000 as "organic disease of the heart."

The statement, attributed to Captain Eliot, M. P., that a sum of £46,000 had been saved annually through the application of the results of Dr. T. Lewis' work is clearly based on the Annual Report of the Medical Research Council for 1919-1920, where an estimate of this amount is given in connection with the probable saving, in the London District alone, consequent upon the adoption of the methods and principles of treatment advocated by Dr. Lewis. These methods—of graduated exercises, etc.—have thoroughly proved their value. It should hardly be necessary to make such a statement in view of the world-wide reputation of Dr. Lewis and the revolution which his researches, and those of his colleagues, have effected in connection with the diagnosis, treatment and prognosis of cardiac disease.

From these figures Dr. Hadwen deduces that these cases were almost entirely caused by inoculation with antityphoid vaccine—at least one assumes that this is what he means, although he speaks of it as antityphoid serum.

This deduction is entirely contrary to the facts, and the true causes of the cardiac troubles for which these men received or are receiving pensions have been established by patient and arduous research on the part of many highly qualified cardiac experts. The majority—from 50 to 60 per cent.—have been shown by their history to have had an infection of one kind or another as the starting point of their trouble. Of these infections the most common have been rheumatic fever, chorea, pneumonia, pleurisy, bronchitis, influenza, diphtheria, scarlet fever, trench fever and dysentery. Of a group of 558 cases, specially investigated, symptoms of

the condition were stated to have been present in no less than 43 per cent. at the time when the men joined the service; 12 per cent. acquired their first symptoms on training, and 45 per cent. on active service. It is quite certain that a large number of men succeeded in enlisting, especially in the earlier days of the war, at the third or fourth attempt, making no mention of heart troubles from which they had suffered in a more or less pronounced form, often for years before.

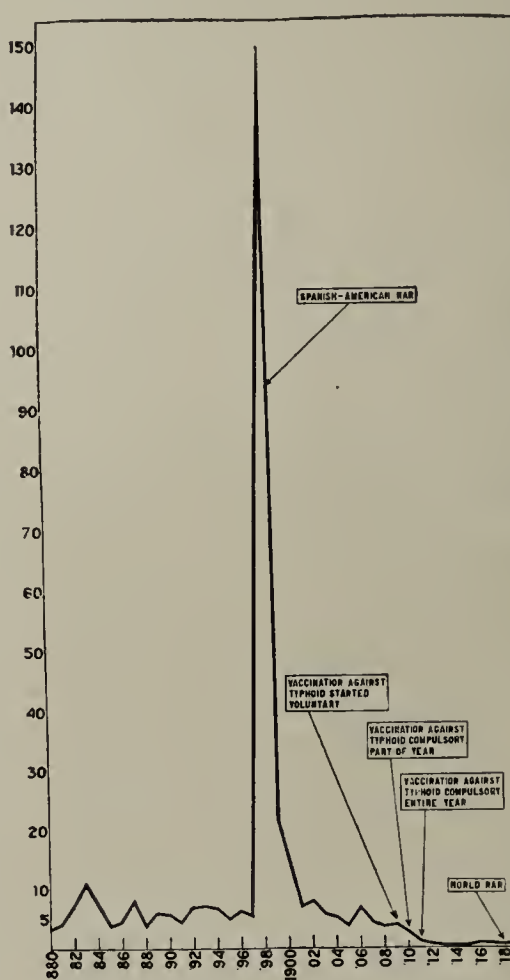
Of those who contracted heart troubles after enlistment, the incidence was found to have been especially heavy among such men as had led an indoor or sedentary life before joining; more than half of the cases were drawn from this class. Such men were found to be less able than their comrades to stand the unaccustomed strain of marching with army equipment. The great majority of the remainder were attributed to one or other of the following exciting causes: shock, wounds, burns, accidents, poisoning by gas, strains. In less degree, tobacco and alcohol were considered to have played a small part.

Dr. Lewis, in a letter dated Oct. 24, 1921, says: "Approximately one half of the cases of so-called 'D. A. H.' who have been on the pensioners' list had their malady when they joined the army. Of the remainder, namely, those who

acquired the malady on service, one may say that the chief exciting causes were rheumatic fever, influenza, P. U. O., and other infectious diseases, and the wear and tear of trench work. I may say quite positively that inoculation has not been a cause worth considering statistically."

In the enormous majority of pensioned cases of heart trouble the causes were such as to make the origin of the affection quite clear, and do not lend the smallest support to Dr. Hadwen's conjectures.

It is not possible to deny that inoculation with antityphoid vaccine, and possibly with other vaccines, might conceivably give rise to a certain degree of irregularity in the heart's action of longer or shorter duration, but it is abundantly clear that, if such a result ever occurs, it is of extraordinary rarity and has not been encountered by our medical officers.



Annual admission rates per thousand for typhoid fever among white enlisted men in the United States Army for the years 1880 to 1919, inclusive.

No case of death directly and solely attributable to typhoid vaccine has come to my notice; in a few cases where inoculation had preceded death by a short period, there was always found some disease, such as pneumonia or meningitis, quite sufficient to account for death apart from inoculation.

Of other permanent ill effects consequent on inoculation, I have had no evidence. On the contrary, during the war, in response to some questions asked in the House by antivivisection sympathizers, a special inquiry was made in the B. E. F. of all the distinguished gentlemen who were acting as consulting physicians, gentlemen of, I may say, world-wide reputation, as to whether they had observed any evidence of such deleterious effects. The answers were unanimously in the negative.

Far from having done the forces any harm, it is the universal opinion of those in a position to judge that typhoid inoculation saved thousands of lives in the war and many thousands of pounds, which would have had to be paid to widows and dependents but for the protection afforded by this procedure.

The extent of this saving may be appreciated by contrasting the relative incidence and mortality from the enteric



fevers among the British troops engaged, respectively, in the South African War and the Great War (Table 1).

TABLE 1.—RELATIVE INCIDENCE AND MORTALITY FROM THE TYPHOIDS AMONG BRITISH TROOPS IN SOUTH AFRICAN WAR AND GREAT WAR

	Total Cases	Total Deaths	Case Mortality, per Cent.	Mean Annual Strength	Annual Incidence, per Cent. of Strength	Annual Death Rate, per Cent. of Strength
South African War, 1899-1902.....	57,684	8,022	13.9	208,226	105.0	14.6
The Great War, 1914-1918.....	20,139	1,191	5.9	2,000,000 Approx.	2.35	0.139

Yours very sincerely,  
T. H. GOODWIN.

For comparison with the concluding paragraph of the letter from General Goodwin, it is now possible to present statistics of typhoid in the United States Army over a long period of time. The ratios per thousand for admissions and deaths for the years 1880 to 1919, inclusive, are incorporated in Table 2.

TABLE 2.—ADMISSIONS AND DEATHS FROM TYPHOID AMONG WHITE ENLISTED AMERICAN TROOPS, 1880-1919 (RATIOS PER THOUSAND)

Year	Admissions	Deaths	Year	Admissions	Deaths
1880	2.88	0.56	1900	10.21	1.67
1881	3.78	0.72	1901	6.74	0.84
1882	6.60	0.72	1902	7.70	0.95
1883	10.21	1.66	1903	5.66	0.47
1884	6.72	1.43	1904	5.00	0.36
1885	3.37	0.41	1905	3.55	0.30
1886	4.25	0.98	1906	6.50	0.28
1887	7.50	0.69	1907	4.08	0.32
1888	3.45	0.54	1908	3.42	0.34
1889	5.75	0.62	1909†	3.70†	0.25
1890	5.48	0.55	1910	2.38	0.18
1891	4.11	0.48	1911‡	0.80‡	0.09
1892	6.62	0.56	1912	0.28	0.03
1893	6.91	0.67	1913	0.09	....
1894	6.51	0.87	1914	0.10	0.04
1895	4.61	0.56	1915	0.07	....
1896	6.04	0.74	1916	0.57	0.02
1897	5.55	0.30	1917§	0.49§	0.04
1898	147.58*	15.26*	1918§	0.31§	0.05
1899	21.77*	2.52*	1919§	0.48§	0.06

\* Spanish-American War and Philippine insurrection.  
† Vaccination against typhoid was started as a voluntary procedure in 1909, and continued voluntary until the latter part of 1910.  
‡ Vaccination against typhoid compulsory entire year and thereafter.  
§ World War period.

The admission rates for the army during this period are shown graphically in the accompanying chart.

The following special points brought out in the chart are worthy of note: the high admission rates obtaining during the Spanish-American War; the decline in rates that began when vaccination was initiated as a voluntary measure in 1909; the sharp decline that occurred and continued after this measure was made compulsory for the army in the latter part of 1910, and the very low rate prevailing throughout the World War when approximately 4,000,000 men were mobilized.

Table 2 and the chart are based on ratios per thousand of strength. The actual numbers as to admissions and deaths for typhoid in the United States Army during the period from April 1, 1917, to Dec. 31, 1919, inclusive, are: cases, 1,529; deaths, 227. These cases occurred in a total of approximately 4,000,000 men mobilized. Reduced to a basis of one year's service for each individual mobilized, the total number of men exposed for each year was 4,128,478.

This office will be very glad to have the information contained in this letter used in such manner as may be deemed appropriate by you.

M. W. IRELAND, M.D., Washington, D. C.  
Major-General, U. S. Army;  
Surgeon General.

APPEAL BY NATIONAL MUSEUM FOR PARASITOLOGIC SPECIMENS

To the Editor:—The importance of parasitology is made more patent each year. We feel, however, that much greater progress might be achieved if physicians the country over were to put forth a concerted effort in this field. With this end of view, we now ask the medical fraternity to save all parasitologic specimens that may come within reach, and to send these to us for the collection of the U. S. National Museum. By thus centralizing such material, it will be possible for specialists to determine with greater accuracy the limits of variation of species, their geographic distribution, and their relative abundance in various parts of the country. These collections, like all other government collections, will be available for study by any qualified student who may wish to pursue work in this line, and we will be pleased to extend laboratory facilities so far as available to such students.

Specimens transmitted should be placed in 70 per cent. alcohol and can then be shipped in a mailing case by post; or if the sender will notify us that he has a specimen, we will send a mailing tube with return frank for its shipment. Specimens should be accompanied by data giving the host, whether human or otherwise, the age of the host when possible, and a statement how the specimen was obtained. If secured by means of an anthelmintic, the character of the drug used should be mentioned. The label should also bear the town or place where the specimen was obtained, and the name of the sender, and the package should be addressed to the U. S. National Museum, Washington, D. C. Material thus transmitted to us will be properly labeled with the name of the donor, and we will be pleased to send the identification of the specimens provided by our specialist, if the donor cares for it.

We feel that a few years of such cooperative effort on the part of the medical fraternity should furnish a wonderful amount of material, which will help gain a more complete concept of the rôle played by parasites than has been possible by the scattered and fragmentary data available in the past.

C. D. WALCOTT, Washington, D. C.  
Secretary, United States National Museum.

AMERICAN MEDICAL AID FOR RUSSIA

To the Editor:—I cannot but feel that the enclosed letter, written to his colleagues by the head of the Public Health Service of Soviet Russia, Dr. N. Semashko, tells its own story of desperate need and courageous effort better than I can do it, and I pray the courtesy of your columns for its wider circulation.

Allow me most deeply and warmly to thank you for the great help you have given us.

Russia is in deep trouble this year, as you know. Twenty-five million people will suffer hunger, millions will die of starvation. As is always the case in social catastrophes, the first to suffer are the children. The cry of the little children carries far beyond the famine-stricken plains of the Volga. And disease follows famine. Fortunately we have mastered the cholera epidemic, but typhoid and typhus threaten us this winter.

Famine has brought disintegration to our medical work, even in Moscow. Our losses in the medical profession itself are heavy on the epidemic front. We were strangled by the blockade, but we introduced sanitary standards unknown under czarism. Since 1918 we have multiplied by ten the number of state supported hospital beds in Russia. We have created new machinery to combat tuberculosis and the venereal diseases and to safeguard mothers and babies. With tremendous labor we have laid the foundations for the enlightened care of our people, and it hurts to see that in this year of our bitter trial, the work of our hands must suffer collapse.

The American Relief Administration is feeding large numbers of our starving children. For this humanitarian aid we send our deepest gratitude to the American people. But I beg you to give us medical help. Send us drugs—malaria infests the Volga Valley, and, aggravated by hunger, malaria has a terrible malignancy. Send us food for our hospitals. Send us surgical and medical instruments, laboratory equipment, ambulances.

I am convinced that your appeal for help will find a broad response among the American people. Sanitation in Russia is a human problem, not a political problem. We labor to raise Russia out of the darkness of



the past, and this aim should be clear to the mind and close to the heart of all enlightened people.

In this assurance, I wish you success in your work.  
N. SEMASHKO, M.D.

Dr. Semashko asks America for the kind of medical aid which we possess in such peculiar richness—hospital equipment. He has asked this office to furnish a 500-bed hospital for general work, as well as for the care and study of typhus, in the city of Moscow. The needs of that other terrible epidemic front in the Volga Valley have been published by Capt. Paxton Hibben, secretary of the Russian Commission of the Near East Relief, who has recently returned from a 5,000 mile journey through Russia. Fifty base hospitals in the Volga Valley would not touch one another's elbows. The United States Congress has just granted \$20,000,000 for the relief of Russian distress; it is less well known that the Italian government, acting in conjunction with the Italian Red Cross, has signed an agreement with the soviet representative to open eighteen medical and food stations in the famine district.

It has seemed to me that we of the American profession would respond with a generous and ready hand to the needs of our Russian colleagues, if such were understood. Since 1914, Russia has been cut off from medical books and current medical literature, and the professional contacts which are dear to all of us. Her medical men and women, and her scientific workers and laboratory experts now ask for publications to be distributed to three centers, Moscow University, Petrograd University, and the Academy of Science. They ask for books, original studies, reprints concerning medicine and public health, and files or single issues of scientific and medical journals issued since 1914. Gifts of these, or money for their purchase, and gifts for the outfitting of the American hospital in Moscow, will be gratefully received by this office. And I personally beg for a generous and immediate response.

MICHAEL MICHAILOVSKY, M.D.,  
103 Park Avenue, New York.

Representative in America of the  
Public Health Service of Russia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GRIFFITH'S COMPOUND MIXTURE

To the Editor:—Enclosed find the published formula for Griffith's Compound Mixture, which I have used in rheumatic cases. I should like to prepare it myself and wish you would furnish the *modus operandi*. I believe it would be somewhat cheaper if I make it myself, and perhaps you could add to its medicinal value.

E. F. BENNER, M.D., Salfordville, Pa.

ANSWER.—The published formula of Griffith's Compound Mixture says:

A powerful alterative—Composed of Guaiac, Stillingia, prickly ash, turkey corn, colchicum, black cohosh, sarsaparilla, salicylates of the alkalies, iodid of potassa and other well known remedies, combined in such a manner that it is tolerated by all patients suffering from rheumatism, gout, lumbago, neuralgia, sciatica, etc.

This formula—typical of the old shotgun nostrum—contains no quantities and means nothing.

TREATMENT OF SYPHILIS

To the Editor:—I have as patients a man and wife both giving a ++ Wassermann reaction. The woman has a rash, and both have apparently suffered with syphilis for over two years. The woman has been pregnant about four or five months. I should like to know whether arsphenamin should be given, or would it be advisable to use mercury until after the confinement? Have you any other suggestions relative to treatment?

B. R. J.

ANSWER.—It is possible to make only a tentative diagnosis of syphilis from the facts given. The presence of a rash, if it is a generalized rash, is hardly likely to be evidence of

syphilis two years after infection. If the diagnosis is made on a ++ Wassermann reaction alone, one must be very sure of the Wassermann reaction. If the diagnosis is certain, a pregnant woman should be treated vigorously with arsphenamin and mercury. The fact of the pregnancy is no contraindication; it is, rather, an indication for more vigorous treatment on account of the child. It is, of course, assumed that the woman's kidneys will stand the treatment. Kidney disturbance is the only contraindication that is more likely to arise in a pregnant woman than in the case of another patient.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vigne. Juneau.  
CALIFORNIA: Los Angeles, Feb. 13-16. Sec., Dr. Charles B. Pinkham, 342 Flood Bldg., San Francisco.  
KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.  
NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools, Part I, Feb. 15-17; Part II, Feb. 20-21. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
NEW YORK: Albany, Buffalo, Syracuse and New York City, Jan. 23-26. Asst., Professional Examinations, Mr. Herbert J. Hamilton, State Education Bldg., Albany.  
VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.  
WYOMING: Cheyenne, Feb. 13-15. Sec., Dr. J. D. Shingle, 206 Citizens Bank Bldg., Cheyenne.

Oregon July Examination

Dr. Urling C. Coe, secretary, Oregon State Board of Medical Examiners, reports the written and practical examination held at Portland, July 5-7, 1921. The examination covered 12 subjects and included 102 questions. An average of 75 per cent. was required to pass. Of the 27 candidates examined, 16 passed and 11 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
National Homeopathic Medical College.....	(1894)		75
State University of Iowa College of Medicine.....	(1921)		82.8
Minneapolis College of Physicians and Surgeons.....	(1906)		82.8
Columbia University .....	(1908)		76
University of Oregon.....	(1921)	80, 81, 81.1, 81.1, 82.3, 84.3, 84.6, 84.9, 86.6, 87.2, 87.6	
Nippon Special Medical School.....	(1910)*		80

FAILED			
Homeopathic Medical College of Missouri.....	(1900)		46
Southwest School of Medicine and Hospital.....	(1916)		45
Creighton University College of Medicine.....	(1921)		76.8†
University of Oregon.....	(1921)	72.5, 76.8†, 80.1†	
Osteopaths.....		47.5, 55.8, 60.6, 63.1, 77.1†	

\* Graduation not verified.  
† Fell below 75 per cent. in more than one subject.

New Jersey June Examination

Dr. Alexander MacAlister, secretary, New Jersey State Board of Medical Examiners, reports the written examination held at Trenton, June 21-22, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 21 candidates examined, 20 passed and 1 failed. Sixty-three candidates were licensed by reciprocity. One candidate was licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University .....	(1920)	77.6, 81.2, 83.5	
Hahnemann Medical Coll. and Hosp. of Philadelphia .....	(1920)	79.7, 81.8, 82.3, 83.2, 83.7, 91	
Jefferson Medical College.....	(1919)	86.1, (1920) 81.6, 84, 84.7, 86.1	
Temple University .....	(1918)		77.8
University of Pennsylvania.....	(1917)	76.8, (1920) 82.7, 84.3, 86.7	
University of Moscow.....	(1917)*		82.7

FAILED			
University of Heidelberg.....	(1893)*		58.7

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Howard University.....	(1911)	Virginia, (1915)	Georgia
University of Georgia.....	(1916)		Georgia
American College of Medicine and Surgery.....	(1905)		Illinois
College of Physicians and Surgeons, Chicago.....	(1902)		Illinois
Hahnemann Medical Coll. and Hosp. of Chicago....	(1910)		Illinois
(1915) Nebraska			
Tulane University.....	(1895)		Virginia
College of Physicians and Surgeons, Baltimore.....	(1904)		California
(1913) Maryland			
Johns Hopkins Univ....	(1901)	New York, (1902), (1919, 2)	Maryland



Boston University .....	(1917)	Mass.
Tufts College Medical School.....	(1897)	New York
Barnes Medical College.....	(1898)	Missouri
University Medical College of Kansas City.....	(1896)	Missouri
University of Nebraska.....	(1918)	Nebraska
Dartmouth Medical College.....	(1882)	Illinois
Columbia University.....	(1913), (1914), (1919)	New York
Cornell University .....	(1916), (1919)	New York
Fordham University.....	(1919), (1920)	New York
Long Island College Hospital....	(1897), (1919, 2), (1920, 2)	New York
Medical Department of the University of the City of New York .....	(1895)	New York
New York Homeopathic Medical College and Flower Hospital.....	(1915), (1918), (1919)	New York
New York University Medical College.....	(1896), (1898)	New York
University and Bellevue Hospital Medical College.....	(1916), (1919, 4), (1920, 2)	New York
Jefferson Medical College.....	(1896), (1916), (1917)	Penna.
(1919) North Carolina		
Temple University.....	(1911), (1916)	Penna.
University of Pennsylvania.....	(1917) Delaware, (1919)	Ohio
Woman's Medical College of Pennsylvania.....	(1906)	Penna.
Tennessee Medical College.....	(1903)	Tennessee
Vanderbilt University .....	(1919)	Tennessee
Medical College of Virginia.....	(1914) North Carolina, (1918)	Virginia
University of Virginia.....	(1919)	Virginia
McGill University .....	(1917)	New York
National University, Athens.....	(1897)	Illinois
University of Budapest.....	(1912)*	Michigan
University of Naples.....	(1888)	Penna.
College .....	Year	Endorsement
University of Pennsylvania.....	(1918) Nat. Bd. Med. Ex.	
* Graduation not verified.		

### South Dakota July Examination

Dr. H. R. Kenaston, director, Division of Medical Licensure, South Dakota State Board of Health and Medical Examiners, reports the oral, written and practical examination held at Deadwood, July 19-20, 1921. The examination covered 15 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 9 candidates examined, 8 passed and 1 failed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery.....	(1914)		87.9
College of Physicians and Surgeons, Chicago.....	(1904)		84.5
Northwestern University.....	(1920) 88.7,	(1921)	84.6
Indiana University .....	(1912)		90.8
University of Kansas School of Medicine.....	(1916)		89.7
University of Michigan Medical School...	(1911) 87.3,	(1916)	86.8
FAILED			
Georgetown University .....	(1903)		69.3
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Jefferson Medical College.....	(1904)		Minnesota

### West Virginia October Examination

Dr. W. T. Henshaw, secretary, West Virginia Public Health Council, reports the oral and written examination held at Clarksburg, Oct. 11-12, 1921. The examination covered 9 subjects and included 90 questions. An average of 80 per cent. was required to pass. Of the 12 candidates examined, 6 passed and 6 failed. Sixteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University.....		(1921)	90
University of Maryland.....		(1920)	88
Jefferson Medical College.....		(1921)	86
University of Virginia.....		(1921)	92
National University, Athens.....		(1920) *	87
University of Rome.....		(1916) *	90
FAILED			
National Medical University.....		(1909)	54
Hospital College of Medicine.....		(1903)	69
Barnes Medical College.....		(1907)	60
Medical College of Virginia.....		†	39
National University, Athens.....		(1915) * 57, (1921) *	72
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons.....		(1902)	Georgia
Chicago College of Medicine and Surgery.....		(1908)	Illinois
University of Louisville Medical Department.....		(1917)	Kentucky
Tulane University .....		(1909)	Texas
College of Physicians and Surgeons, Baltimore.....		(1891)	Virginia
University of Maryland....	(1910) North Carolina, (1914)		S. Carolina
Missouri Medical College.....		(1890)	Missouri
National University of Arts and Sciences.....		(1918)	Missouri
Eclectic Medical College, Cincinnati.....		(1918), (1920)	Ohio
Jefferson Medical College.....		(1916)	New Jersey
Western Pennsylvania Medical College.....		(1900)	Penna.
Western Reserve University.....		(1920)	Ohio
Meharry Medical College.....		(1918)	Kentucky
University of Tennessee.....		(1915)	Oklahoma
* Graduation not verified.			
† Undergraduate.			

## Book Notices

POLYCYTHAEMIA, ERYTHROCYTOSIS AND ERYTHRAEMIA (VAQUEZ-OSLER DISEASE). By F. Parkes Weber, M.A., M.D., F.R.C.P. Cloth. Price, 21 shillings net. Pp. 148. London: H. K. Lewis & Co., 1921.

This book is a revised version of the author's critical review in the *Quarterly Journal of Medicine* for October, 1908, together with a supplement containing what is one of the most valuable features—a short résumé of some additional publications by various authors, notes on unpublished cases, and remarks in conclusion. It is a careful and comprehensive study especially worthy of praise because of the painstaking analysis of reported cases and also because of the judicial fairness with which discordant views of the many writers on this subject are discussed. There is no exploitation of extravagant theory, no sign of riding some wild hobby. Weber still inclines to the belief that the disease known as polycythemia rubra is due to an overactivity of the bone marrow in its erythroblastic function. He aims to exclude conditions such as secondary polycythemia, due to vascular obstruction or that associated with primary hypertension or nephritis. Erythrocytosis, he says, is as distinct from the true disease as is leukocytosis from leukemia. It is greatly to be desired that there may be more monographs of this type. While the views expressed and the conclusions reached may be materially changed in the future, such a book remains as the basis for all subsequent work on the subject treated. It seems almost undignified in dealing with a book written in such a scholarly manner as is this one to call attention to two trivial matters that seem to us to be faults. The use of "like" for "as" has good authority; it may come into general usage. But it grates on our ears to read that "he found an increase of urobilin in the urine like Türk." Also the free employment of the parenthesis becomes a disconcerting annoyance, often by its intrusion interrupting the reader's continuity of thought. The omission of unnecessary synonyms and inconsequential qualifying words, phrases and clauses, the more frequent substitution of the comma for the parenthesis, and the relegation of many of the references to the bottom of the page would help to avoid this difficulty. To have from five to thirty parentheses ( ) on nearly every page is a blemish.

THE EVOLUTION OF MODERN MEDICINE. A Series of Lectures Delivered at Yale University on the Silliman Foundation in April, 1913. By Sir William Osler, Bart., M.D., F.R.S. Cloth. Price, \$6. Pp. 250, with illustrations. New Haven: Yale University Press, 1921.

The great war cut short the revision by the author of the proofs of these lectures and he did not take up the task again. The final preparation of the proofs for publication was made by Fielding H. Garrison, Harvey Cushing, Edward C. Streeter and Leonard L. Mackall—none more competent could have been selected—and they have carried out the plans of the author, as shown in the earlier galleys, with such care and reverence that nothing has been lost of the freshness, charm and force characteristic of the writings of the "best balanced, best-equipped, most sagacious and most lovable of all modern physicians." In addition to the introduction there are chapters on Greek medicine, medieval medicine, the renaissance and rise of anatomy and physiology, the rise and development of modern medicine, and the rise of preventive medicine. Osler himself spoke of the lectures as "an aeroplane flight over the progress of medicine through the ages." Naturally the survey proceeds rapidly, but a golden thread, easily followed, connects the work of the outstanding men and the epochal developments, and there is an amazing variety of detail with striking characterizations, apt quotations and helpful references. The touch of the master scholar and master writer is on every page. The illustrations, carefully selected by Osler from the rich stores at his command, are of extraordinary interest. By text and illustration the evolution of medicine is traced with admirable clearness "through a series of upward steps—a primitive stage, in which it emerged from magic and religion into an empirical art, as seen among the Egyptians and Babylonians; a stage in which the natural character of disease was recognized and the importance of its study as a phenomenon of nature was announced; a stage in which the structure and functions of



the human body were worked out; a stage in which the clinical and anatomical features of disease were determined; a stage in which the causes of disorders were profitably studied, and a final stage, into which we have just entered, the application of the knowledge for their prevention" (page 220). The book has a direct appeal to all that are interested in the evolution of medicine and science, and the growth of truth in general. It should be read widely because there is clarification, stimulus and uplift in it. Medical students and physicians should not fail to study it because here is inspiration that will enlarge their vision and make them better students and physicians.

GRUNDLAGEN AERZTLICHER BETRACHTUNG. Ein führung in Begriffliche und Konstitutions-Pathologische Fragen der Klinik für Studierende und Ärzte. Von Dr. Louis R. Grote, Privatdozent, Oberarzt der Medicinischen Universitätsklinik in Halle A. S. Paper. Price, 36 marks. Pp. 81, with 2 illustrations. Berlin: Julius Springer, 1921.

To one who is searching for facts which will aid him in the pursuit of the practice of medicine, i. e., the art of healing, or who is interested in the philosophical consideration of what disease is, what factors are determining disease in one and health in another, or why some develop arteriosclerosis or hypertension and others diabetes, the perusal of this series of five articles will be a disappointment. But there are always students who, as the author puts it, evince an interest in the processes of nature in general, to whom the whys and wherefores are always interesting, and for these the book is intended. A definition of life is sought for from many quarters; a determination of what the normal actually is, and what constitutes pathologic states, the rôle of personal predisposition to states of disease, the interreaction of various factors and the causation of disease, what determines the "constitution of the patient," and the importance of personal variants, such as congenital anomalies, the rôle of heredity with special reference to the mendelian law of heredity, Lamarckism, etc., are gone into in more or less detail. Finally, a chapter on the fundamentals of therapeutics is given. The author points out in a general way the various indications for treatment, vital, symptomatic and causal; the combating of physiologic and nonphysiologic stimuli, and the bases of serotherapy and organotherapy. There are numerous references to ancient and modern authors in the realm of philosophy, science and medicine. To one with a speculative turn of mind, the book should prove a stimulus to thought.

PROSTITUTION IN THE UNITED STATES. Volume I—Prior to the Entrance of the United States into the World War. By Howard B. Woolston, Ph.D. Publications of the Bureau of Social Hygiene. Cloth. Price, \$2.50. Pp. 360. New York: The Century Company, 1921.

This volume, the first of a two volume study of prostitution in the United States issued by the Bureau of Social Hygiene, brings the subject up to the entrance of the United States into the World War. In the introduction the editor states that the plans for the study were made before we entered the war, and that the greater part of the field work reported was done in the first half of 1917. The compilation and publishing of the book was necessarily delayed. Following the war it was evident that new ideas of governmental responsibility and control in this field had developed. The second volume will deal with the effect of the World War on prostitution in the United States. Dr. Woolston has collected, digested and summarized a large amount of information, most of which is familiar to students of this subject through the reports of the various committees and investigators in the last ten years. Historically, it is interesting as regarding the tremendous change in public morals that has taken place during the last decade.

MORRIS'S HUMAN ANATOMY. A Complete Systematic Treatise by English and American Authors. Edited by C. M. Jackson, M.S., M.D., Professor and Director of the Department of Anatomy, University of Minnesota. Sixth edition. Cloth. Price, \$10 net. Pp. 1507, with 1164 illustrations. Philadelphia: P. Blakiston's Son & Co., 1921.

The revision of this well-known textbook has been thorough; new illustrations have been added, and the bibliographies have been brought up to date. Special attention has been paid in this edition to the glands of internal secretion, now presented by Prof. J. F. Gudernatsch.

## Medicolegal

### Validity of Requiring Renewal of Certificates of Unfitness for Vaccination

(*Spofford v. Carlton et al. (Mass.), 131 N. E. R. 314*)

The Supreme Judicial Court of Massachusetts says that the respondents, who were the school committee of the city of Haverhill, adopted a regulation which provided that:

Every pupil in attendance at the public school, or who may hereafter be in attendance at such school who has been given a certificate by a physician stating that such pupil is not a fit subject for vaccination, shall be required to renew such certificate once in two months, provided, however, that in the case of such pupil who fails to renew such certificate as required, such pupil will not be excluded from school until a period of two weeks after failure to renew such certificate.

The regulation is not as matter of law so unreasonable or arbitrary as to be invalid, nor is it discriminatory. The intention of the legislature is clear that the exemption provided for by the statutes on the presentation of a certificate by a physician that a child is an unfit subject for vaccination is not to cover absolutely the entire period of the child's attendance at a public school, but the certificate is limited to the period when his physical condition is such that in the opinion of the certifying physician he is an unfit subject for vaccination.

The respondents as the school committee of the city were given "general charge and superintendence of all the public schools." The scope of this power was sufficiently broad to promote and secure not only the best interests of the pupils, but also the general welfare of the community in the management of schools. The respondents had authority, notwithstanding the certificates which the petitioner in this case presented, and which had been accepted when his children were admitted, to exclude them subsequently if an epidemic of smallpox had appeared. It was true that this condition did not exist. But the uniform policy of the commonwealth requires general vaccination as a preventive measure against the infection and spread of one of the most dangerous and highly contagious diseases with which mankind is afflicted. It is common knowledge that a public school composed of pupils from all sections of the city may become at any moment a source of danger to the public health unless the laws relating to vaccination are strictly enforced. For these reasons, the petition in this case for a writ of mandamus to compel the respondents to admit the petitioner's children to the public schools, without their compliance with the regulation quoted above, must be dismissed.

### Duration of Prohibition Against Disclosures

(*McCaw et al. v. Turner et al. (Miss.), 88 So. R. 705*)

The Supreme Court of Mississippi, Division A, in affirming a decree upholding a will, says that the heirs at law of the testatrix sought to have the will set aside on the ground of undue influence and mental incapacity. The ruling of the court below assigned for error was the exclusion of the testimony of a physician relative to the alleged mental disability of the testatrix, he having treated her therefor during her lifetime. Section 3695 of the Code of 1906 provides that:

All communications made to a physician or surgeon by a patient under his charge or by one seeking professional advice are hereby declared to be privileged, and such physician or surgeon shall not be required to disclose the same in any legal proceeding, except at the instance of the patient.

It was contended by the plaintiffs that the power to waive the privilege conferred on the patient by the statute does not die with him, but may be exercised after his death by parties standing in a personal or representative relation as regards such patient. But the supreme court holds that the prohibition of Section 3695 survives the death of the patient, and cannot be waived by the patient's heir, executor or administrator.

The statute in plain and unambiguous language, the court says, limits the right to waive the privilege to the physician's patient, and the right must be so limited by the courts, unless the manifest reason and obvious purpose of the statute would be sacrificed by adhering to a literal interpretation of its



language. The manifest reason and obvious purpose of the statute is to enable a patient to disclose his infirmities to his physician in order that the physician may prescribe for his disease without fear that his feelings will be shocked or his reputation tarnished by their disclosure by the physician without his consent, which purpose will not only not be sacrificed by giving the words of the statute their usual and ordinary meaning, but, on the contrary, will be sacrificed unless its words are given that meaning. The statute does not limit the privilege to the life of the patient, nor does it confer on his heirs or devisees who may quarrel over his property the right to tarnish his reputation by causing his physician to disclose his infirmities.

#### Location in Cities of Hospitals for the Treatment of Tuberculosis

(*Cook et al. v. City of Fall River (Mass.)*, 131 N. E. R. 346; *San Diego Tuberculosis Association v. City of East San Diego et al. (Calif.)*, 200 Pac. R. 393)

The Supreme Judicial Court of Massachusetts, in affirming a decree for the defendant in the case of *Cook et al. v. City of Fall River*, says that this was a bill in equity to enjoin the erection in what was termed the Highland district of a hospital for the treatment of tuberculosis, on the ground that the hospital would constitute a nuisance. The master to whom the case was referred found:

Experience has demonstrated that there is no real danger from a well-conducted hospital or sanatorium and there is no valid reason for fear in regard to it. Whatever danger of infection there may be will be no greater to the neighborhood in the Highland section than there would be wherever said hospital would be located, and, if there is any danger to be expected from patients traversing the streets in traveling to and from the hospital, that danger would be the same wherever the hospital would be located.

On these facts the judge could not enjoin the defendant without virtually nullifying the statute which requires the city to maintain a tuberculosis hospital within its limits, as the objections raised by these petitioners applied with at least equal force to every other available site. Hospitals for contagious diseases must be established and maintained for the protection of the general public; and it is not to be assumed in advance that such a hospital, well equipped and managed under the supervision of public health boards, will be a nuisance.

The Supreme Court of California says that the plaintiff in the second case sought an injunction against the defendants attempting to enforce a city ordinance declaring every hospital for the treatment of persons afflicted with contagious or infectious diseases to be a nuisance, making the maintenance of any such hospital within the limits of the city a misdemeanor, making its maintenance a separate offense for each day it was maintained, and providing for punishment by fine or imprisonment for every offense. Was the ordinance a reasonable one in its essential feature, that of prohibiting within the city any hospital for the treatment of contagious or infectious diseases? Such prohibition is very different from regulation, and can be justified only on the ground that such a hospital, no matter how well conducted, is a menace to the public peace, morals, health or comfort. That a well-conducted, modern hospital, even one for the treatment of contagious and infectious diseases, is not such a menace, but, on the contrary, one of the most beneficent of institutions, needs no argument. There is not the slightest danger of the spread of disease from it, and this is the only possible ground on which objection could be made to it. This court has no hesitation in holding an ordinance prohibiting the maintenance anywhere within a city of an institution so necessary in our modern life and so beneficent to be wholly unreasonable and invalid. This being so, the enforcement of the ordinance by the city officials can be enjoined. It was evident in this case that the enforcement of the ordinance would cause substantial and irreparable injury to the plaintiff's property, and that against the threat of its enforcement by the repeated prosecutions which the ordinance permitted, the plaintiff had no adequate remedy; wherefore, the plaintiff was entitled to have the enforcement of the ordinance enjoined, and a judgment sustaining a demurrer to its complaint is reversed.

## Society Proceedings

### SOUTHERN MINNESOTA MEDICAL ASSOCIATION

Annual Session, held at Mankato, Dec. 5 and 6, 1921

The President, DR. W. J. MCCARTHY, Madelia, in the Chair

#### Causes of Failure of Operations for Chronic Appendicitis

DR. CHARLES J. ROWAN, Iowa City: The results of operation for chronic appendicitis are not satisfactory. These patients should have more careful examination and often more prolonged observation. No patient should be regarded as having typical chronic appendicitis unless a history of a former characteristic acute attack is obtainable. Extra care and consideration should be used before advising operation in neurotics, especially those with colitis or visceroptosis. More exploratory incisions should be made in preference to the muscle splitting incision, and always in atypical cases. The exploration should not end with the discovery and removal of a diseased appendix. Believing that a considerable amount of trouble complained of after operation may be due to adhesions, we shall try out picric acid instead of iodine in the preparation of the site of operation.

#### Factors in the Health of Older Children

DR. E. J. HUENEKENS, Minneapolis: The importance of food, especially the vitamins, has been greatly overestimated. Sunshine is a very vital factor. Rest, especially in the Goldthwaite position, is a great factor for proper posture as well as general health. Environment is the most vital of all. The training of parents, psychotherapy and the proper treatment of functional nervous diseases have been much neglected.

#### Treatment of Empyema

DR. A. C. BAKER, Fergus Falls: Acute empyema is best treated by aspiration; by catheter drainage, being careful to prevent pneumothorax, and by rib resection. If a cure is not effected in three months, the case should be considered chronic and treated accordingly. Certain types are chronic from the beginning. Irrigation with surgical solution of chlorinated soda is the treatment of choice. For the cavity which does not obliterate, pulmonary decortication after preliminary irrigation is the most conservative procedure. If success attends these efforts, a plastic operation is indicated. Tuberculous empyema not secondarily infected should not be drained and should be aspirated only for a considerable accumulation of fluid. The closure of bronchial fistulas is a requisite to healing. Bronchial fistulas are the only contraindications to irrigation with surgical solution of chlorinated soda. Physiologic solution of sodium chlorid shall be used until closure of the fistula has been secured. Most sinuses close eventually after obliteration of chronic cavities. Preliminary sterilization reduces infection, amount of shock, extent of operation, and mortality, and in many cases removes the necessity of any operation whatsoever.

#### Premenopausal Uterine Prolapse

DR. ERNEST Z. WANOUS, Minneapolis: In dealing with a prolapse during the premenopausal period, when the organs of reproduction are still active, the disturbed circulation of the uterus and ovaries must be restored to normal, thereby reestablishing the chemistry of the internal secretions. The child-bearing function should not be destroyed.

#### Primary Carcinoma of Lung

DRS. ROBERT I. RIZER and HAROLD C. HABEIN, Minneapolis: From the pathologic standpoint, three types of carcinoma of the lung should be considered, arising from (1) the bronchial epithelium; (2) bronchial mucous glands, and (3) alveolar epithelium. The roentgen ray in our experience has not been of material aid in the diagnosis. Individuals with a primary carcinoma of the lung live from three to twenty-seven months after the appearance of the first symptom. Death is usually due to rupture of the vessels, thrombosis, pulmonary edema,



asphyxia and cachexia. No one symptom or sign is diagnostic of primary carcinoma of the lung; but when a patient has dyspnea, deep dull chest pain with hemoptysis, and possibly some abnormal chest findings, malignancy of the lung should be considered.

#### Chloroform Anesthesia

DR. P. F. HOLM, Wells: The difference of safety in administration between chloroform and ether is probably far less than commonly stated, as numerous deaths are indirectly caused by ether that are not so classified in the statistics. Chloroform has good qualities that should not be overlooked, and I cannot agree that chloroform should be banished entirely as an anesthetic. Many physicians who deprecate the use of chloroform do not know how to administer it properly. I do not wish to convey the idea that chloroform can displace ether; but, given a suitable case, chloroform properly administered has a place that no other anesthetic can fill quite so well.

#### Thyroid Therapy

DR. R. G. ALLISON, Minneapolis: In twenty-seven cases of exophthalmic goiter without complications which were subjected to roentgen-ray treatment, without subsequent operation, twenty-four of the patients are well. The treatment has been complete for nearly eight months. The remaining three patients came to operation. Of these three, one was definitely improved before operation, and the other two were normal a few months after operation. Of six cases of post-operative hyperthyroidism, which had relapsed, one showed a definite cure, five showed no improvement. Of three cases of thyrotoxic adenoma, none showed any response to roentgen-ray therapy. The only patient who was operated on during an increasing basal metabolic rate died an operative death. We feel that the results obtained in the earlier cases might have been attained more quickly if more intensive therapy had been used. No bad results or complications which we could attribute to the treatment have occurred in any cases of our series. Only with the closest cooperation between the clinician and the roentgenologist can satisfactory results be obtained.

#### Pyelitis

DR. A. E. SOHMER, Mankato: The prompt cure of pyelitis depends on an early diagnosis, and prompt recognition of the source of infection. Focal infection is the most frequent cause, and is often followed by secondary colon bacillus infection. In children, pyelitis is a frequent occurrence. Calculus recurrence is often due to a persistent pyelitis. Treatment in acute cases consists of rest, bland diet, and alkalinization of the urine. Chronic cases require elimination of the primary infectious focus, alternating with the use of hexamethylenamin and citrates at intervals of from five to seven days. Lavage of the kidney pelvis with silver nitrate and mercurochrome alternately is indicated in persistent cases.

#### Treatment of Duodenal and Gastric Ulcers

DR. A. C. STRACHAUER, Minneapolis: All uncomplicated, acute ulcers, and the majority of ulcers recognized at an early stage should be treated medically. The medical treatment sorts the ulcers into medical and surgical cases. Medical failures obtain in the type of ulcer requiring surgery. The complication of an accompanying chronic cholecystitis, cholelithiasis or appendicitis makes the ulcer case a surgical one. No type of surgical intervention is to be performed on the stomach or duodenum unless the ulcer can be demonstrated at the time of operation.

#### Retroperitoneal Lipomas

DRS. J. C. MASSON and E. J. HORGAN, Rochester: In a review of the literature it was found that most cases of retroperitoneal tumor are diagnosed at operation. The most striking fact about the tumor is the absence of symptoms due to it. In only four of our twelve cases in which the growth was degenerating were there acute symptoms. In the remainder the presence of the tumor, variously diagnosed as of renal origin, ovarian cyst, etc., was the main indication for interference. Pain was severe in only one case. Three patients had ascites, but none had signs of obstruction. The

age of the patients varied from 40 to 72 years, the average being 55. The average duration of symptoms was three years. The tumor is usually ovoid and movable, with a multiglobular surface and a doughy consistency. Its position varies with its origin, the most usual source being the perirenal fat. Operation for removal of the growth may be very difficult if the tumor has displaced important vessels at the root of the mesentery, at the hilum of the kidney, or above the spine, and especially if degeneration has taken place. In cases of large growths a midline incision is indicated, and an attempt should be made to remove the entire mass, since recurrences are common.

#### Nontuberculous Lung Infections

DR. H. M. CONNER, Rochester: These cases are usually diagnosed tuberculosis or chronic bronchitis. In most cases the patient develops the condition during the cold months and in northern climes. The principal symptoms are cough and expectoration over a prolonged period, either constant or in spells of days, weeks or months. There may or may not be fever, loss of weight, lessened appetite, strength and energy, but these are not marked. Principal physical findings are moist râles in one or both bases. The roentgenograms usually show very little.

#### Partial Rectal Prolapse, with a Suggestion as to Treatment

DR. W. A. FANSLER, Minneapolis: The patient is placed in a Sims or squatting position, and then by straining and manipulation the exact extent of the prolapse is determined. The patient is then placed in the knee chest position for treatment. An anoscope is introduced, and with the inrush of air the mucous membrane flattens out over the muscular coat in approximately its normal relations, leaving practically no folds. Four sites are now selected equidistant around the circumference of the bowel and carefully cleansed with hydrogen peroxid, iodine and alcohol. The distance internal from the anus that these sites are chosen depends on the extent of the prolapse. In the average case a point a little above the hemorrhoidal area is taken. At each of these sites from 5 to 10 minims (0.3 to 0.6 c.c.) of 5 per cent. quinin and urea hydrochlorid solution is injected into the space between the mucous and muscular coats. The patient is then allowed to lie down for a few minutes and is then ready to leave the office. It is necessary that the bowels be kept soft and straining prevented, and for this liquid petrolatum is given in sufficient quantity. The treatment is repeated every fifth or seventh day until a cure is effected. The action produced by the quinin and urea hydrochlorid is the calling forth of a fibrous plastic exudate which is later partially absorbed and partially replaced by dense scar tissue which binds the two coats together.

#### Recognition of the Nasal Ganglion Syndrome

DR. R. A. BARLOW, Rochester: Irritation of the sphenopalatine ganglion so closely simulates the repeated paroxysms of sneezing seen in hay-fever that some cases have been diagnosed incorrectly. Sphenopalatine disturbances may be classified as two types: (1) the neuralgic and (2) the sympathetic. Patients with neuralgic disturbances complain of severe lower half headaches. Patients with sympathetic disturbances have persistent sneezing, lacrimation, and hay-fever-like attacks, which are not dependent on season or climate. The technic for the treatment of the condition is very simple. The nasal ganglion is first cocainized by passing an applicator with cotton dipped in 10 per cent. cocaine into the nose to the posterior end of the middle turbinate. This is withdrawn and a second applicator, dipped in sterile water, is inserted to the same spot and allowed to remain about one minute. This procedure rules out functional disturbances. If the patient has not had any effect by the second day, he is again cocainized. The second applicator is this time dipped in 50 per cent. silver nitrate solution instead of sterile water. This is allowed to remain in position about thirty seconds. This treatment is applied to both sides and is usually followed by severe attacks of sneezing. About the third day the treatment is repeated. As a general rule, two treatments are sufficient.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Anatomy, Philadelphia

November, 1921, 29, No. 4

- Development of Pharynx and Aortic Arches of Turtle; Fifth and Pulmonary Arches of Mammals. R. F. Shaner, Boston.—p. 407.  
Digestive Activity of Mesenchyme. A. Ehrlich Sarcoma Cells as Object. V. Danchakoff, New York.—p. 431.

#### American Journal of Public Health, Chicago

December, 1921, 11, No. 12

- American Public Health Association, Past, Present and Future. M. P. Ravenel, Columbia, Mo.—p. 1031.  
Relations of Bacteriology to Public Health Movement Since 1872. E. O. Jordan, Chicago.—p. 1042.  
History of Public Health in Cuba During Past Fifty Years. J. LeRoy, Havana, Cuba.—p. 1048.  
Development of Board of Health and Its Relation to Public. F. G. Curtis, Newton, Mass.—p. 1058.  
Public Health Activities and Medical Profession. G. C. Ruhland, Milwaukee.—p. 1062.  
Report of Committee on Drugs and Nostrums. H. J. Knapp.—p. 1073.  
Methods of Cooperation Between Municipal, State and Federal Officials on Pharmaceutical Preparations. W. S. Hubbard.—p. 1077.  
Sanitation of Bath Houses at Public Bathing Beaches. S. De M. Gage and A. E. Griffin.—p. 1080.

#### Annals of Surgery, Philadelphia

December, 1921, 74, No. 6

- Local, Regional and Spinal Anesthesia. G. L. Labat, Rochester, Minn.—p. 673.  
Malignant Degeneration of Benign Tumors of Thyroid Gland. J. Speese and H. P. Brown, Jr., Philadelphia.—p. 684.  
\*Traumatic Chylothorax. S. H. Watts, University, Va.—p. 691.  
Anomalous Portal Vein: Its Surgical Dangers. H. O. Knight, Galveston, Texas.—p. 697.  
\*Malignant Neoplasia in Gallbladder. J. A. H. Magoun, Jr., and K. Renshaw, Rochester, Minn.—p. 700.  
\*Perforating Gastric and Duodenal Ulcer. N. Winslow, Baltimore.—p. 721.  
\*Persistence of Gastric Ulcer After Gastro-Enterostomy. E. Klein, New York.—p. 740.  
Jejunal Diverticula: Two Cases. E. L. Hunt and P. H. Cook, Worcester, Mass.—p. 746.  
Radium Treatment of Carcinoma of Bladder. B. S. Barringer, New York.—p. 751.  
\*Hemostasis in Suprapubic Prostatectomy by Method of "Lost Tampon." H. Fischer, New York.—p. 768.  
Defects of Patellar Border. T. W. Todd and W. C. McCally, Cleveland.—p. 775.  
Traumatology of Sesamoid Structures. A. H. Bizarro, London, England.—p. 783.

**Traumatic Chylothorax.**—Watts reports the case of an insane patient who shoved a knife into the suprasternal notch as far as he could, moving it crosswise and up and down. The thoracic duct was cut and the chyle poured out into the pleural cavities although the condition was not recognized until after the patient's death when a thorough dissection of the neck region was made.

**Malignant Disease of Gallbladder.**—Twenty-nine of the thirty-eight patients whose histories are reviewed by Magoun and Renshaw and on whom cholecystectomies were performed had had symptoms referable to the gallbladder for more than one year; nine had had symptoms for less than one year. If the condition is operable cholecystectomy should be performed; cholecystostomy should only be performed when besides the tumor there is a severe infection of the gallbladder, or as a path for the introduction of radium. Cholecystostomy for stones had been performed elsewhere in five of the eighty-four cases, indicating that malignancy may develop in gallbladders that have been drained. Jaundice is a contraindication to operation when a definite diagnosis of malignancy of the gallbladder has been made. Complications may be due to perforation of the gallbladder, as happened in one case in the series, to empyema, or to extension to the neighboring viscus by continuity, contiguity, or metastasis. Seven patients on whom a cholecystectomy had been performed were alive six years after operation, a percentage of 8.3 cures. The diagnoses in these cases were: gallstones in three, gallbladder disease in three, and gastric carcinoma in one (in this case adhesions had developed between the gall-

bladder and the pylorus). The operative procedures were: cholecystectomy in five; cholecystectomy, excision of adjacent liver tissue, and choledochotomy in one; cholecystectomy and gastro-enterostomy in one (besides the malignancy there were gastric and duodenal ulcers).

**Perforating Gastric Ulcer.**—Twenty-nine cases are reported by Winslow for the purpose of urging operation before rupture; fourteen patients recovered; 15 died. It did not seem to make any material difference what type of operation was chosen. The causes of death were septicemia, generalized peritonitis, toxemia, subphrenic abscess and pneumonia. Of the twenty-nine cases, twenty-three gave histories of stomach disturbances extending over a period of from a few weeks to many years. In most of these cases the history was typical of ulcer. If perforating ulcer is to be avoided and life preserved, Winslow says the profession must bring the ulcer case to operation before rather than after rupture. Leaving out of the question that carcinoma of the stomach is supposed to be preceded in at least 60 per cent. of the cases by ulcer and the other debilitating disorders incident to ulcer, the fact alone that 50 per cent. of the cases of perforating ulcer of the stomach or duodenum are doomed, should arouse the profession to the seriousness of this complication. These ulcers may be benefited symptomatically by medicinal agents, but there is no assurance that it is ever cured.

**Persistence of Gastric Ulcer After Gastro-Enterostomy.**—A case is reported by Klein in which the persistence of gastric symptoms was due to an unhealed prepyloric ulcer following a well performed gastro-enterostomy. The symptoms yielded to partial gastrectomy.

**Hemostasis After Suprapubic Prostatectomy.**—After the prostate has been removed Fischer catches the edges of the wound with a few Allis' clamps. A strip of iodoform gauze is tightly packed into the cavity until all its recesses are well filled. The projecting part of the tampon is cut off. If the hemorrhage is controlled, this tampon is removed and used as a pattern for the size of the final tampon. The final tampon is secured by a stout silk ligature fastened around its middle and its whole mass is introduced into the cavity. Before the tampon is definitely placed, the prostatic cavity is once more carefully cleaned of all blood coagula which may have accumulated. After introduction of the gauze pack the wound edges are tightly sutured with strong plain catgut over the tampon, the silk thread being let out between two sutures and through the suprapubic wound. The prostatic cavity is thus completely shut off from the interior of the bladder. A drainage tube is fastened in the bladder in such a way that it does not touch the bladder fundus, and the bladder and the abdominal wound are tightly closed around it. After three or four days the sutures have become loose and the tampon can be withdrawn by pulling on the silk string, the drainage tube being removed at the same time.

#### Archives of Surgery, Chicago

January, 1922, 4, No. 1

- \*Studies in Experimental Traumatic Shock. IV. Evidence of Toxic Factor in Wound Shock. W. B. Cannon, Boston.—p. 1.  
\*Lymphatic Origin of Cholecystitis, Choledochitis and Associated Pancreatitis. E. A. Graham and M. G. Peterman, St. Louis.—p. 23.  
Classification and Mechanism of Fractures of Leg Bones Involving Ankle. A. P. C. Ashhurst and R. S. Bromer, Philadelphia.—p. 51.  
\*Studies in Exhaustion: III. Emotion. G. W. Crile, Cleveland.—p. 130.  
Structural Results of Prostatectomy with Reference to Methods of Enucleation. F. Hinman, San Francisco.—p. 154.  
Relaxed Pelvic Floor; End Result in Sixty Cases. E. C. Cutler and C. H. Jameson, Boston.—p. 175.

**Experimental Traumatic Shock.**—Aside from the experimental evidence presented by Cannon, which resulted in the building up of a theory of traumatic toxemia as a cause of shock, there are also clinical observations which extended over approximately the same period as the experimental studies, and which, quite independently, led to the same conclusion. The whole question of the nature of shock is discussed at length.

**Lymphatic Origin of Cholecystitis.**—Graham and Peterman maintain that in many cases, probably in a majority, cholecystitis represents a direct extension to the wall of the gallbladder from a liver already inflamed. The hepatitis usually begins and is most marked in the interlobular, or periportal,



tissues; and it is apparently due to infection brought to the liver by the portal vein, and, more rarely perhaps, by the hepatic artery. A pericholangitis then occurs, and because of the intimate anastomosis between the lymphatics of the intrahepatic and extrahepatic biliary systems a direct extension into the wall of the gallbladder takes place as well as into the common duct and the pancreas. From the antecedent hepatitis, therefore, a cholecystitis, choledochitis and pancreatitis can be understood to occur by way of the lymphatics. The authors admit, however that some cases are doubtless hematogenous in origin, some perhaps are contact infections from bacteria carried down in the bile and a few may have originated in an ascending infection of the common duct through its lymphatics or have been due to a chance contact of a gallbladder with an inflamed contiguous organ.

**Emotions May Cause Exhaustion.**—Crile asserts that his researches have shown that the emotions drive the organism with extreme intensity; that, like trauma or exertion, emotion may drive the organism within the limits of normal response, or so overwhelmingly as to suspend the normal functions and reduce the individual to a state of complete, cold prostration. In other words, emotion may cause exhaustion; it may cause shock. The histologic lesions produced in the brain, liver and suprarenals by emotion are described.

### Colorado Medicine, Denver

December, 1921, 18, No. 12

- Removal of Astragalus in Old Cases of Infantile Paralysis. R. G. Packard, Denver.—p. 267.  
Capsulotomy Versus Intracapsular Method in Senile Cataract Extraction. H. M. Thompson and J. W. Thompson, Pueblo.—p. 271.

### Endocrinology, Los Angeles

November, 1921, 5, No. 6

- \*Case of Exophthalmic Goiter with Rapid Improvement Following Oral Administration of Fresh Ox Suprarenal Gland. S. Shapiro and D. Marine, New York.—p. 699.  
\*Testicular Substance Implantation. L. L. Stanley, San Quentin, Calif.—p. 708.  
Importance of Visualizing Established Scientific Data with Reference to Size of Body Cells and Their Chemical Supplies in Circulating Blood. G. Luden, Rochester, Minn.—p. 715.  
\*Some Novel Effects Produced by Stimulating Nerves of Liver. W. B. Cannon, J. E. Uridil and F. R. Griffith, Boston.—p. 729.  
\*New Views as to Morphology of Thymus Gland and Their Bearing on Problem of Function of Thymus. J. A. Hammar, Upsala, Sweden.—p. 731.  
\*Experimental Diabetes Insipidus and Genital Atrophy. P. Bailey and F. Bremer, Boston.—p. 761.  
Extirpation and Transplantation of Thymi in Larvae of *Rana Sylvatica*. M. M. Hoskins, Richmond, Va.—p. 763.  
Endocrine Therapy in Cases of Low Blood Pressure. G. H. Hoxie, Kansas City, Mo.—p. 773.

**Suprarenal Gland in Exophthalmic Goiter.**—The case of exophthalmic goiter reported by Shapiro and Marine presented several unusual features in addition to the classical manifestations of profound asthenia, emaciation, tachycardia, thyroid hyperplasia, tremor and exophthalmos. The more important of these were: periods of pyrexia for which no assignable cause could be found; very low systolic blood pressure; purpura with prolonged bleeding time; decreased platelet count; swollen and bleeding gums and a history of profuse menstrual hemorrhage and a rapid gain in weight and muscular strength, rise in blood pressure and decrease in bleeding time associated with administration of fresh ox suprarenal gland, but without any noteworthy changes in the pulse rate, exophthalmos or thyroid gland. Very rapid and striking improvement in the general nutrition occurred during the administration of fresh ox suprarenal cortex, in 5 gm. daily doses by mouth rather than during the administration of desiccated suprarenal gland. The observation suggests a possible relative functional insufficiency of the suprarenal cortex as one of the underlying factors in exophthalmic goiter. Larger doses, especially of whole fresh suprarenal gland, caused nausea and vomiting, probably from direct irritation of the gastric mucosa by epinephrin. Evidence, both experimental and clinical, is now rapidly accumulating that the suprarenal gland, and particularly its cortical portion, plays an essential and fundamental rôle in the etiology of exophthalmic goiter.

**Testicular Substance Implantation.**—More than 300 persons have been treated by Stanley in San Quentin prison with

animal testicular material. These were not selected but were taken in order of their application. After the first twenty or thirty prisoners had received the glands and reported among their fellow prisoners the good results they had obtained, many applications were received. The material used was taken from a ram, goat, or boar which had reached maturity. Strips of testicle are placed in a paraffin syringe and the material forced out is injected into the abdominal wall, about 1 gm. in each of four places. Among those treated were cases of neurasthenia, senility, asthma, paralysis agitans, epilepsy, dementia praecox, diabetes, locomotor ataxia, impotency, tuberculosis, paranoia, gangrene of toe, atrophied testicles, rheumatism, and, in fact, many other illnesses of chronic character not amenable to treatment. From these experiments Stanley says it may be said that animal testicular substance injected into the human body does exert decided effects. Some of those receiving this treatment claim that their eyesight is improved, the appetite is increased, that there is a feeling of buoyancy, a joy of living, an increased energy, loss of tired feeling, increased mental activity and many other beneficial effects. Eight patients with asthma have been helped, and four claim that they have had no recurrences. In four cases of acne, the eruptions have been markedly decreased. This procedure has been carried out in about sixteen mental cases, ranging from neurasthenia to manic-depressive insanity. Most of the subjects showed some change. One man with paranoia has apparently lost his delusions of persecution, improved physically, and works very well. Almost all the subjects report increased sexual activity.

**Stimulating Nerves of Liver.**—Stimulation of the hepatic nerves will cause an increased rate of the denervated heart, an effect appearing later than the similar adrenin effect and lasting for a longer time. Stimulation of the hepatic nerves will cause a rise of blood pressure. It does not occur on closure of the hepatic artery and vein; it occurs on hepatic stimulation though all abdominal viscera have been removed except the liver, and, unlike stimulation of splanchnic blood vessels alone, it long outlasts the period of stimulation. None of the known or supposed products of hepatic activity—glucose, urea, catalase—when injected into the blood stream have the effects produced by exciting the hepatic nerves. Watery extracts of the liver are ineffective. Liver extracted by boiling acid and nearly neutralized augments the heart rate, but so do extracts of other organs. The efficiency of hepatic stimulation in causing a faster heart rate, when meat is being digested, is not seen if an animal is digesting carbohydrate, or fat, or has been fed for several days on either of these foodstuffs. On the other hand, stimulation is more effective after amino-acids have been injected into the intestines. The tentative conclusion is drawn that the effects noted are probably not due to a true internal secretion produced by the liver, but to a discharge from its cells of amino-acids, or amines, which are sympathomimetic in character.

**Functions of Thymus.**—Hammar asserts that "thymic asthma" due to pressure and "mors thymica" should be sharply differentiated. There is no reliable evidence that the latter is due to abnormality of the thymus. The Hassall's corpuscles (C. H.) and the lymphoid cells (l. c.) vary independently. C. H. excitatory and depressor as well as lymphoid cells excitatory and depressor factors can be recognized. Lymphoid cells excitatory and depressor factors affect the lymphoid tissues throughout the body. The C. H. excitatory factors are of a toxic nature. The function of the thymus is antitoxic.

**Experimental Diabetes Insipidus.**—Bailey and Bremer present only a preliminary report on their work. A lesion, even an extremely minute one, of the parinfundibular region of the hypothalamus provoked with certitude (in thirteen of thirteen dogs) a polyuria which appeared in the first two days. According to the extent of the lesion it varied from a transient one lasting from six to eight days to an apparently permanent polyuria. In the latter case other important symptoms were present, e. g., cachexia "hypophyseoprivia," genital atrophy and adiposity. The permanent polyuria realized has all the characteristics of diabetes insipidus in man, e. g., possibility of concentration when intake of fluids is restricted, when pituitary extract is injected subcutaneously or in the



presence of fever, excessive polyuric reaction to the administration of chlorides, and absence of theobromin effect. The experimental diabetes insipidus does not depend on a disturbance of a supposed nervous or vascular regulation of the kidney. It may be induced in animals whose kidneys have previously been denervated and when present persists with the same characteristics after denervation of the kidneys. Lesion of the tuber cinereum has produced in two dogs a cachexia "hypophyseopriva" with genital atrophy, and in two other dogs an insidiously developing adiposogenital dystrophy. The integrity of the pituitary was in each case verified histologically. Glycosuria was an inconstant result of the lesion and seemed probably to depend on the state of nutrition of the animal. The situation of this important nervous center and the minuteness of the lesion necessary to provoke characteristic symptoms probably explains the results of operations on the hypophysis in both young and adult animals. There is no evidence at present that the lesion acts by the intermediation of the pituitary.

### Georgia Medical Association Journal, Atlanta

December, 1921, 10, No. 19

- Goiter: Study of Eight Hundred Consecutive Thyroid Patients. E. G. Jones, Atlanta.—p. 821.  
Cretinism: Early Diagnosis. G. L. Echols, Milledgeville.—p. 825.  
\*Magnesium Sulphate Poisoning in Children: Two Cases. W. W. Anderson, Atlanta.—p. 826.  
Case of Chorioepithelioma. D. C. Elkin.—p. 830.  
Sacral Anesthesia. H. L. Barker, Carrollton.—p. 833.  
Local Tonsillectomy; Different Technic. M. Equen, Atlanta.—p. 834.  
Significance of Emaciation in Physical Diagnosis. J. T. Moore, Sycamore.—p. 836.  
Combined Use of Roentgen Ray and Radium in Treatment of Malignant Disease. J. J. Clark, Atlanta.—p. 839.  
Dead-Beat. J. R. Robbins, Siloam.—p. 843.

**Magnesium Sulphate Poisoning.**—Anderson reports the cases of two children who had a progressive muscular myopathy, possibly a progressive muscular dystrophy, and intestinal parasites, *Uncinaria americana* in one case, and *Tenia nana* in the other. Both children were given 2 ounces of saturated solution of magnesium sulphate. Following this initial dose each child had four or five large, loose, watery stools. Breakfast was omitted the following morning and at 6, 8 and 10 a. m. one child was given 8 grains of oleoresin of male fern. At the same hours her sister was given 8 grains of thymol. At 12 noon both were given 1½ ounces of saturated solution of magnesium sulphate. Following this second dose of magnesium sulphate there was no purging. Ten hours following the second dose of magnesium sulphate both children were in a profound state of collapse. They complained of intense abdominal pain, of being hot, were nauseated and vomited coffee ground vomitus almost continuously, so that no food or liquid could be retained by mouth for forty-eight hours. They would sink into a comatose stage with eyes rolled up under half closed lids, scarcely perceptibly breathing, slowly and deeply. At all times, however, they could be aroused, could tell how they felt, and their mentalities were clear throughout. Their extremities were icy cold, their pulses could not be palpated at the wrists for twenty hours and their heart sounds were very weak and rapid. There was no jaundice, no spasms or convulsions. The abdomen showed slight general rigidity, not localized. There was marked suppression of urine and feces for about twenty hours, after which both urine and feces were passed in bed, so that a careful examination was not made. High colon irrigations of physiologic solution of sodium chlorid and proctoclysis of 5 per cent. glucose were begun, after which the bowels eventually moved, the vomiting ceased, and the children could retain a little strong hot coffee at first after about forty-eight hours. The pulses became palpable at the wrists, respirations began to approach normal and the stuporous condition slowly passed away, so that within four or five days the children were in the same condition as on admission and could retain the usual hospital diet.

### Journal of Experimental Medicine, Baltimore

January, 1922, 35, No. 1

- \*Experimental Studies of Nasopharyngeal Secretions from Influenza Patients. VI. Immunity Reactions. P. K. Olitsky and F. L. Gates, New York.—p. 1.

- \*Frequency of *Bacillus Influenzae* in Nose and Throat in Acute Lobar Pneumonia. E. G. Stillman, New York.—p. 7.  
Heterogenic Serum, Age and Multiplication of Fibroblasts. A. Carrel and A. H. Ebeling, New York.—p. 17.  
\*Relation of *Treponema Pallidum* to Lymphoid Tissues in Experimental Syphilis. L. Pearce and W. H. Brown, New York.—p. 39.  
Agglutination with Aid of Centrifuge. Influence of Temperature on Absorption and Flocculation. F. L. Gates, New York.—p. 63.  
\*Effect of Pulmonary Congestion on Ventilation of Lungs. C. K. Drinker, F. W. Peabody and H. L. Blumgart, Boston.—p. 77.

**Immunity Reactions in Influenza.**—The experiments described by Olitsky and Gates furnish additional evidence of the pathogenic character and the virtual identity of the various strains of the active agent derived from the nasopharyngeal secretions of influenza patients with which the transmission experiments in rabbits have been carried out. The active material has been shown to be of antigenic nature, so that rabbits are protected from the effects of a second inoculation. The experiments indicate also the antigenic identity of the various strains of the active agent with each other and with *Bacterium pneumosintes*. Finally, the experiments show that the protection may persist for fourteen months which is the longest period yet tested.

**Frequency of Influenza Bacillus in Nose and Throat in Pneumonia.**—Cultures were made by Stillman from the throats of 1,077 normal individuals, and influenza bacilli were demonstrated to be present in 332, or 30 per cent. The result of cultures made from the nose in a much smaller number of normal individuals indicate that hemoglobinophilic bacilli are rarely present, even in persons suffering from coryza, laryngitis, etc. In marked contrast with these findings are the results obtained in a series of cultures made from the nose and throat of patients suffering from lobar pneumonia. In thirty-one of these cases, cultures were made from the throat, and in eighteen cases, influenza bacilli were isolated. In thirty-five cases of pneumonia, cultures were also made from the nose and influenza bacilli were isolated from this source in nine. In certain other cases influenza bacilli were isolated from the sputum when they could not be demonstrated in the cultures from the nose or throat. Among the entire thirty-five cases, influenza bacilli were isolated from at least one of these three sources in thirty, or 85 per cent. of the cases.

**Experimental Syphilis.**—The experiments reported on by Pearce and Brown demonstrate that experimental syphilis is not confined to the site of local inoculation but that lymphogenous dissemination of treponemas regularly takes place, and that during the course of this process organisms become localized in the lymph nodes and exist there indefinitely, irrespective of the occurrence of manifestations of disease. The intimate relation of *Treponema pallidum* to lymphoid tissue is an essential concept of syphilis of the rabbit, and from this point of view, the infection is primarily one of lymphoid tissue.

**Effect of Pulmonary Congestion on Lung Ventilation.**—Experiments were made by Drinker and his associates to determine whether pulmonary congestion interferes with the entrance of air into the lungs. Congestion was produced by compression of the pulmonary veins at their entrance into the left auricle, and the effect on the air entering the lungs was determined by means of a sensitive artificial respiration apparatus which delivered a constant volume of air with each inspiration. It is shown that intravascular blood can encroach markedly on the pulmonary air space. Although the methods used in these animal experiments do not resemble vital capacity measurements in man, their result is so definite that their applicability to clinical conditions may be considered. The similarity between the experiments described and certain conditions of cardiac decompensation, of which mitral stenosis is the best example, is pointed out.

### Journal of Laboratory and Clinical Medicine, St. Louis

December, 1921, 7, No. 3

- \*Blood Chlorids in Mercuric Chlorid Nephrosis. J. A. Killian, New York.—p. 129.  
Clinical Diagnosis by Aid of Viscosimetry of Blood and Serum with Special Reference to Viscosimeter of W. R. Hess. M. E. Bircher, Rochester, Minn.—p. 134.



- \*Treatment of Acute Phosphorus Poisoning. H. V. Atkinson, Chicago.—p. 148.  
 Synthesis of Arsphenamin and Study of Some of Its Intermediate Derivatives. C. N. Myers, New York.—p. 151.  
 Note on Estimation of Blood Chlorids in Tungstic Acid Filtrates. J. B. Rieger, Detroit.—p. 166.  
 Methyl Alcohol in Arsphenamin. P. A. Kober, Nepera Park, N. Y.—p. 168.  
 Blood Counts with Oxalated Blood. N. Yarbrough, Charlotte, N. C.—p. 172.  
 Apparatus for Estimation of Catalase. W. H. Welker, Chicago.—p. 173.  
 Estimation of Inorganic Phosphorus in Blood Plasma by Method of Bell and Doisy. B. A. Myers and M. C. Shevsky, San Francisco.—p. 176.  
 \*Differential Staining of Granules in Diphtheria and Other Bacilli. A. G. Nicholls, Halifax, N. S.—p. 180.

**Blood Chlorids in Mercuric Chlorid Nephrosis.**—Two non-fatal cases of mercuric chlorid poisoning are reported by Killian. As the impairment of renal function due to kidney injury progressed, a diminution of concentration of the chlorids of the whole blood was noted. A return to normal of the functional capacity of the kidneys was accompanied by an increase in the blood chlorids.

**Treatment of Acute Phosphorus Poisoning.**—Atkinson asserts that liquid petrolatum given one hour after taking phosphorus furnishes complete protection against the onset of harmful symptoms. Liquid petrolatum is physiologically inert and acts entirely by reason of its physical properties. Its use is recommended in the treatment of phosphorus poisoning. Since liquid petrolatum is a harmless, and non-irritating cathartic, it may be used to delay absorption from the intestine in many, perhaps all cases, of poisoning.

**Differential Staining of Granules in Bacilli.**—The procedure used by Nicholls is as follows: Stain films fixed by heat with Neisser's staining fluid No. 1. This consists of methylene blue, 1 gm.; 96 per cent. alcohol, 20 c.c.; glacial acetic acid, 50 c.c., and distilled water, 950 c.c. This mixture is allowed to remain on the films for thirty seconds. Wash in water. Apply Gram's iodine solution for ninety seconds. Wash in water. Apply watery solution of safranin T, 0.5 per cent., for thirty seconds. The granules appear black on a pink background. The picture is sharp, the contrast excellent. The method is applicable to any bacteria which contain granules, and shows up the granules in diphtheria bacilli exceptionally well.

### Journal of Urology, Baltimore

September, 1921, 6, No. 3

- Final Report on Fractures of Spine in Relation to Changes in Kidney and Bladder Function. H. W. Plaggemeyer, Detroit.—p. 183.  
 Spinal Cord Bladders Occurring in Pernicious Anemia. Four Cases. H. L. Kretschmer, Chicago.—p. 195.  
 \*Sagging Kidney as Factor in Persistence of Colon Bacillus Pyelitis. E. G. Crabtree and W. M. Shedden, Boston.—p. 207.  
 Removal of Ureteral Stone by Cystoscopic Manipulation. A. J. Crowell, Charlotte, N. C.—p. 243.

**Sagging Kidney in Colon Bacillus Pyelitis.**—Of thirty-one cases in which bilateral pyelography was undertaken in a search for the cause for pain after other possible causes for pain had been ruled out, ten showed pelvic abnormality, most often of the type to indicate sagging kidney with stasis. Such a degree of stasis would favor lodgment of the infection. Once lodged, stasis in other portions of the urinary tract bears evidence to what extent infection can persist unless the obstruction be removed. Crabtree and Shedden have patients cured over periods of seven and nine months after suspension operation on sagging kidneys followed by lavage with silver nitrate until the urine became bacteria free.

October, 1921, 6, No. 4

- Relation of Urology to Group Medicine. W. F. Braasch, Rochester, Minn.—p. 267.  
 \*Focal Infections in Relation to Submucous Ulcer of the Bladder and to Cystitis. J. G. Meisser and H. C. Bumpus, Jr., Rochester, Minn.—p. 285.  
 \*Seminal Vesiculitis: Study of One Thousand Cases. E. W. White and R. B. H. Gradwohl, Chicago.—p. 303.  
 Use of D'Arsonval Method of Coagulation Necrosis for Removal of Immense Intravesical Outgrowths of Prostate, Simple or Malignant. G. MacGowan, Los Angeles.—p. 321.  
 Papilloma of Ureter: Report of Case. H. Culver, Chicago.—p. 331.

**Focal Infections and Bladder Ulcer.**—Finding streptococci in the excised ulcers and the results of their experimental

work leads Meisser and Bumpus to the belief that submucous ulcers of the bladder and other infections of the urinary bladder may be due to focal infections harboring streptococci which have a selective affinity for the urinary tract.

**Seminal Vesiculitis.**—In all cases of long duration a trigon cystitis of varying degree was noticed by White and Gradwohl. Urethral symptoms are many, and in some cases extremely annoying. The abdominal symptoms associated with this condition are generally due to the peritoneal investment of the seminal vesicles and may simulate chronic appendicitis, urethral colic, ureteritis or stone. Owing to the close proximity of the bladder, abscess formations with perforations into this viscus have been reported; also rupture into the peritoneal cavity by way of the rectovesical culdesacs. Rheumatic symptoms were noted in about 5 per cent. Osseous formations, spiculae, etc., were definitely demonstrated in five cases. The sexual status in about 35 per cent. of cases was a negligible quantity, presenting every phase of derangement, from mild inaptitude to complete impotency. Atonic vesicles were noted in cases of ejaculatory praecox with mild degree of imperfect erection; whereas, cases of complete impotency invariably presented hard, fibrous sclerotic vesicles. Seminal vesiculitis in 75 per cent. of these cases was productive of marked loss of strength, nightly pollution and desire. Blood and pus were demonstrated in the ejaculated material. Painful orgasm, painful, incomplete erection, hemospermia, pyospermia, etc., are all common findings in seminal vesicle disease. The gonococcus was demonstrated in at least 80 per cent. of the cases. *Staphylococcus albus* and *Micrococcus catarrhalis* were also found, the latter in 10 per cent. of the cases. In 1 per cent. the *Bacillus coli-communis* was present. In 15 per cent. the so-called pseudodiphtheria bacillus was found. In all cases in which the gonococcus was found a positive gonorrheal complement fixation test of the blood was obtained. Treatment, either palliative or surgical, is not altogether successful. Seminal vesiculitis invariably indicates a thorough routine of vesicle and prostatic massage, urethral irrigations, applications, dilatations, caput treatments, etc. Long periods of rest are absolutely necessary. The results of surgical attack on the vesicles are frequently encouraging, and chiefly is this apparent in the gonorrheal, rheumatic and joint cases associated with infected vesicles of long standing, periodically infecting the blood stream with microbic organisms, also the cases of sclerotic or atonic vesicles of long duration, which are productive of changed symptoms at various intervals. Vasotomy in cases of recurrent epididymitis is frequently satisfactory and is resorted to in all cases. It does prevent recurrent swellings. Vasotomy is also performed in practically all cases of acute epididymitis, not that it hastens the course, but theoretically and practically treats the source of infection.

### Maine Medical Association Journal, Portland

December, 1921, 12, No. 5

- Consideration of Pneumonia and Some of Its Complications. F. T. Lord, Boston.—p. 121.

### Medical Record, New York

Dec. 17, 1921, 100, No. 25

- Intelligence, So-Called. M. P. E. Groszmann, New York.—p. 1057.  
 Medical Impressions of South America. W. Sharpe, New York.—p. 1062.  
 Treatment of Mental Aberrations and Undesirable Habit Formations by Psychotherapeutic Methods. C. Scheffel, Brookline, Mass.—p. 1066.  
 Some General Aspects of Digestive Disturbances. E. C. Prentiss, El Paso, Texas.—p. 1069.  
 \*Simple and Relatively Safe Thyroidectomy. W. Van Hook, Chicago.—p. 1072.  
 \*Some Unusual Features in a Localized Epidemic of Influenza. S. R. Blatteis and M. Brunner, Brooklyn.—p. 1074.  
 \*Three Large Babies from One Mother. G. B. Foscoe, Waco, Texas.—p. 1076.

**Safe Thyroidectomy.**—Van Hook advocates leaving small masses at each of the horns of the organ and, in addition, a thin layer of thyroid tissue attached to the posterior, untouched part of the gland capsule. These tissue masses are left by choice because their volume can be gaged rather accurately and because they are well provided with blood vessels and lymphatics, allowing for hypertrophy if that need



be brought about by demand of the organism. The parathyroids remain undisturbed. The current laryngeal nerves are best managed by the same artifice, leaving the region which they traverse entirely untouched.

**Typhoid-Like Nature of Influenza.**—Blatteis and Brunner describe an outbreak occurring at a girls' camp located in a summer mountain resort section of New York state. The cases presented a picture clinically lending itself readily to a tentative diagnosis of typhoid fever. Four cases appeared simultaneously and were placed at the very outset under the strictest isolation and disinfection. The subsequent occurrence of four other cases resulted from contact definitely traced. The definite diagnosis of influenza was made on the fifth day of the disease by the appearance of lung signs for the first time after the beginning of defervescence. This was true of all the cases and is noted as an unusual experience. Prostration was never a feature of any of the cases. The absence of expectoration during the entire period of the acute and convalescent stages was an unusual clinical observation. The strictly limited nature of the outbreak under conditions most favorable for its wide and rapid dissemination is exceedingly rare, but can be accounted for by the early, thorough and persistent use of isolation and disinfection.

**Large Babies.**—The three children reported on by Foscue weighed, respectively, 14 pounds 6 ounces; 13 pounds 2 ounces, and 13 pounds 8 ounces.

Dec. 31, 1921, 100, No. 27

Polyneuritis of Infectious Origin. T. A. Williams, Washington, D. C.—p. 1145.

\*Relationship of Alastrim to Smallpox. V. E. Watkins, La Romana, Santo Domingo.—p. 1149.

Eugenics and Euthenics in Their Relations to Tuberculosis Problem. S. A. Knopf, New York.—p. 1151.

Ages of Parents of Genius. C. L. Redfield, Chicago.—p. 1155.

Why Is Wassermann? C. T. Stone, Brooklyn.—p. 1158.

**Alastrim: Milkpox: Amaas.**—There has been prevailing in the West Indies, in epidemic form, an eruptive disease closely akin to smallpox. The condition has been described under the names alastrim, Kaffir milkpox, modified West Indian smallpox, varioloid-varicella, and amaas. The negroes from the British West Indies speak of it as "glass-pox." Eighty-five cases of the disease are the basis of Watkins' paper. Children appear to have a relative immunity. Males appear to be more prone to contract the disease than females. All the patients were negroes. The disease begins with general malaise, moderate fever and headache. No initial rash has been detected. The eruption begins invariably on the third day in the form of more or less numerous papules on the forehead, face, arms, and hands, which rapidly spread, but less profusely, over the entire body. These papules have the hard, shotty feel characteristic of the smallpox papule. The eruption follows the course of a typical smallpox eruption. The secondary fever has depended entirely upon the severity of the case. There has been no mortality. Watkins is convinced that the disease is a mild smallpox.

### Minnesota Medicine, St. Paul

January, 1922, 5, No. 1

Compulsory Health Insurance. W. A. Dennis, St. Paul.—p. 1.

Jaundice from Pancreatic Disease. C. H. Mayo, Rochester, Minn.—p. 6.

Röntgen-Ray Diagnosis of Gastro-Intestinal Diseases. N. J. Nessa, Sioux Falls, S. D.—p. 10.

\*Potter Version. W. A. Coventry, Duluth.—p. 18.

\*Blood Transfusion: Sodium Citrate Method. M. H. Hoffman, Minneapolis.—p. 24.

Treatment of Tuberculosis of Spine. W. H. Cole, St. Paul.—p. 34.

\*Treatment of Pericarditis with Effusion. C. A. Hedblom, Rochester.—p. 40.

Dermatology and Internal Medicine. S. E. Sweitzer, Minneapolis.—p. 51.

**Potter Version.**—Coventry is convinced that the old method of doing versions is obsolete, and that the Potter method should be taught and demonstrated to students. It is not hard to do, and if done under proper conditions should not offer more complications or as many as using forceps. He does not advocate that Potter version be done in all cases arriving at the second stage, but there is a very definite indication for it in second stage labor, and it has very many advantages. Potter version, with proper kneading out of the perineum, does

protect the maternal soft parts. The morbidity is decidedly lessened on account of the fact that the patient is saved the second stage of labor and the fatigue that goes with it, so that she is better able to resist infection.

**Sodium Citrate Method of Blood Transfusion.**—Hoffman's experience with citrated blood transfusions has been encouraging. He feels that the usefulness of this procedure is gradually enlarging with the increase in the simplicity of the technic. Though deleterious results and even several deaths have been reported to have followed transfusions, these generally were attributable to faulty judgment in the selection of cases, or to gross errors in the technic. He uses 20 c.c. of a 0.3 per cent. solution.

**Pericarditis with Effusion.**—Nine cases of pericarditis with effusion have been treated surgically at the Mayo Clinic. Four were cases of serous effusion, four purulent, and one hemorrhagic. The primary or associated disease conditions in the cases of serous effusion were (1) bronchopneumonia following thyroidectomy for exophthalmic goiter; (2) pulmonary tuberculosis, myelogenous leukemia, bilateral pleurisy with effusion, and ascites; (3) bilateral pleurisy with effusion, and (4) bilateral pleurisy with effusion and ascites, Pick's syndrome. In the first case aspiration of 120 c.c. of serous fluid produced a remarkable improvement in the whole clinical picture, and the patient progressed to a complete recovery. In the second case 220 c.c. of fluid was aspirated. The patient died the same day. Necropsy revealed bilateral pleural effusion and ascites and acute miliary tuberculosis involving the pericardium, lung, liver, and tracheobronchial lymph glands. Pericardiocentesis in the third case yielded 50 c.c. of serous fluid. The pleural cavities were aspirated on four occasions, and from 600 to 1,600 c.c. of fluid evacuated. The patient was discharged improved. He died at home six months later. In the fourth case, aspiration of 100 c.c. of pericardial fluid was followed by marked improvement. Later the pleural cavities were aspirated, and from 900 to 1,350 c.c. of serous fluid evacuated. *Bacillus tuberculosis* was demonstrated in the sputum. The patient was discharged essentially unimproved and died a few weeks later. Necropsy was not performed. The suppurative pericarditis in each of the three cases was due to a hemolytic streptococcus, in two, of the epidemic type. In one of these cases the pericarditis developed during convalescence following bilateral dissection of the submaxillary triangles for epithelioma of the lip. The patient died suddenly with symptoms of cardiac failure. Necropsy was not allowed. The second case was one of epidemic streptococcus bronchopneumonia, with bilateral empyema, following thyroidectomy for adenoma. The patient died with symptoms of septicemia. The necropsy revealed a bilateral empyema with involvement of the myocardium and liver, and with cellulitis of the chest wall.

### Ohio State Medical Journal, Columbus

January, 1922, 18, No. 1

Care of Patients After Abdominal Operations. A. H. Dunn, Chillicothe.—p. 5.

Management of Third Stage of Labor. W. E. Duffee, Columbus.—p. 12.

Intraspinal Treatment of Neurosyphilitic Patients. G. Marthens, Dayton.—p. 13.

Comparative Values of Complement Fixation Methods in Syphilis. H. D. McIntyre, E. A. North and A. P. McIntyre, Cincinnati.—p. 17.

Relation of Abdominal to Urologic Surgery. F. C. Herrick, Cleveland.—p. 26.

Rural Health Commissioner and His Problems. C. H. Skeen, Napoleon.—p. 30.

Rural Public Health Nursing. C. Dunbar, Chillicothe.—p. 33.

Infection of Lateral Sinus. E. W. Garrett, Cleveland.—p. 37.

Case of Extensive Lateral Sinus Thrombosis: Low Resection. H. M. Goodyear, Cincinnati.—p. 40.

### Oklahoma State Medical Association Journal, Muskogee

December, 1921, 14, No. 12

Interstitial Transplant of Round Ligaments for Restoration of Retroverted Uterus. McL. Rogers, Clinton.—p. 325.

Venous Thrombosis, Pulmonary Infarctions and Embolism as Sequence of Gynecologic Operations. F. M. Sanger, Oklahoma City.—p. 327.

Frequency of Acute Intestinal Obstruction Following Abdominal Operations: Importance of Early Recognition of Condition. F. H. McGregor, Mangum.—p. 333.



- Gastric and Duodenal Ulcer. E. Lamb, Clinton.—p. 336.  
 Early Recognition of Gastric Carcinoma. A. W. White, Oklahoma City.—p. 340.  
 Tuberculin Therapy. F. H. McCarley, McAlester.—p. 344.  
 More Hospitals and Better Hospitals. C. M. Rosser, Dallas, Texas.—p. 345.  
 Differential Diagnosis of Pityriasis Rosea and Macular Syphilid. M. M. Roland, Oklahoma City.—p. 346.

### Public Health Journal, Toronto

December, 1921, 12, No. 12

- Some Aspects of Vital Statistics. A. C. Jost.—p. 529.  
 Popular Health Education. D. A. Craig.—p. 538.  
 Special Training for Public Health Nurses. E. K. Russell.—p. 543.  
 Social Aspects of Venereal Disease Problem. E. L. Moore.—p. 546.  
 Importance of Teaching Mothers Proper Breast-Feeding Technic. G. Smith.—p. 552.  
 Victorian Order of Nurses. E. Haslam.—p. 560.

### Tennessee State Medical Association Journal, Nashville

December, 1921, 14, No. 3

- Passing Away: Fading Out. W. K. Sheddan, Columbia.—p. 289.  
 Cataract Operations. W. W. Potter, Knoxville.—p. 296.  
 Sphenoidal Sinusitis: Report of Cases. J. McC. Hogshead, Chattanooga.—p. 301.  
 Diagnosis of Diseases of Kidney and Ureter. W. H. Cheney and F. B. Bogart, Chattanooga.—p. 305.  
 Acute Eczema and Its Management. J. M. King, Nashville.—p. 308.  
 Medical Jurisprudence from Standpoint of Physician. S. T. Rucker, Memphis, Tenn.—p. 312.

### Virginia Medical Monthly, Richmond

December, 1921, 48, No. 9

- Systemic Manifestations of Chronic Local Infections. F. H. Smith, Abingdon.—p. 493.  
 Medical Treatment of Systemic Manifestations of Chronic Local Infections. F. J. Wright, Petersburg.—p. 497.  
 Surgical Treatment of Systemic Manifestations of Chronic Local Infections. R. L. Payne, Norfolk.—p. 501.  
 Public Health Work in Lynchburg. S. H. Rosenthal, Lynchburg.—p. 504.  
 Necessity for Revision Hospitals of Nurse Training Course. J. A. Hodges, Richmond.—p. 507.  
 Interpretation of Laboratory Results. A. H. Straus, Richmond.—p. 513.  
 Some Phases of Pituitary Disease. Report of Cases. J. D. Willis, Roanoke.—p. 515.  
 Clinical Manifestations of Some Pituitary Disorders. H. R. Masters, Richmond.—p. 523.  
 High Lights in Venereal Disease Problem. M. Knowlton.—p. 529.  
 Diagnosis of Congestive Types of Glaucoma. H. H. McGuire, Winchester.—p. 532.  
 Dislocation of Head of Humerus Complicated by Fracture of Shaft at Anatomic Neck. C. S. White, Washington, D. C.—p. 535.  
 Symptoms and Diagnosis of Gallbladder Disease. C. C. Smith, Norfolk.—p. 536.  
 \*Unusual Tumor of Ovary. W. E. Darnall, Atlantic City, N. J.—p. 540.  
 Treatment of Erysipelas. T. J. Tuder, Keokee.—p. 540.  
 Significance of Convulsions in Children. H. R. Fairfax, Bristol.—p. 541.

**Fibroid of Ovary.**—Darnall reports the case of a woman who was told that she had a fibroid tumor of the uterus and that roentgen rays would cure her. The result of the treatments she took produced a roentgen-ray burn over the abdomen as large as a saucer, which would not heal. Failing relief from all other sources, she finally accepted surgery. On entering the abdomen, a large round tumor, freely movable and without adhesions, was easily delivered. It was found to be attached by a pedicle to the left ovary with the elongated left tube stretching over it. This whole mass was removed without difficulty. The tumor weighed 25 pounds. After a careful study of this case, the deduction arrived at was that this tumor was originally a fibroid tumor of the ovary which grew to some size; that as time went on it began to degenerate from within, the injudicious treatments by the roentgen ray no doubt playing a prominent part in aiding the process or, in fact, starting it in the first place. The process of suppuration continued until finally liquefaction of the whole tumor occurred.

### Wisconsin Medical Journal, Milwaukee

December, 1921, 20, No. 7

- Industrial, State and Group Medicine. B. R. Shurly, Detroit.—p. 313.  
 Doctor for Age of Doubt. N. Andrews, Oshkosh.—p. 317.  
 Blood Transfusion. R. T. Cooksey, Madison.—p. 322.  
 Medical Practice in Wisconsin. W. H. Washburn, Milwaukee.—p. 324.  
 After-Care in Tonsillectomy. V. A. Chapman, Milwaukee.—p. 328.

### FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### Brain, London

November, 1921, 44, No. 3

- \*Studies of Cerebral Function in Learning. No. III. Motor Arcas. K. S. Lashley.—p. 255.  
 Psychologic Inquiry Into Nature of Condition Known as Congenital Word-Blindness. L. G. Fildes.—p. 286.  
 Proprioceptive Reflex and Clonus as Studied in Spinal Frog. K. Sassa.—p. 308.

**Cerebral Function in Learning.**—It is shown by Lashley that the albino rat is able to acquire somesthetic motor habits after destruction of the electrostimulable cortex and the caudate nucleus. Visuomotor and simple somesthetic motor habits which are acquired before the operation are retained after the destruction of these structures and probably after the section of occipitotentorial fibers. It is clear, therefore, that neither the cerebral motor areas nor the subcortical nuclei are directly concerned with the performance of learned activities. Combined destruction of the motor area and the caudate nucleus results in relatively permanent motor disturbances resembling hemiplegia in monkeys. Evidence is given that the difficulty is primarily in assuming new attitudes, and it is suggested that the primary function of the cerebral motor structures in the rat is the regulation of postural reflexes. Existing evidence does not seem to exclude such an explanation of the function of the stimulative cortex, even in man.

### British Journal of Experimental Pathology, London

December, 1921, 2, No. 6

- \*Relationship of Blood Groups to Disease. J. A. Buchanan and E. T. Highley, Rochester, Minn.—p. 247.  
 \*Dysentery Immunization in Rabbits by Oral and Subcutaneous Methods. S. Kanai, Tokyo, Japan.—p. 256.  
 Comparative Influence of Pure and Commercial Sugars and of Combined and Separate Sterilization on Bacterial Metabolism. C. G. L. Wolf.—p. 266.  
 Septicemia: Selective Deposition of Colon Typhoid Group of Bacteria in Fixation Abscesses. T. H. C. Benians.—p. 276.  
 \*Study of Hemoglobinophilic Bacteria by Agglutination and Agglutinin Absorption. H. B. Maitland and G. C. Cameron.—p. 283.  
 \*Relation Between Bile Salts and Hemolysis in Blood Stream. E. Ponder.—p. 289.

**Relation of Blood Group to Disease.**—Buchanan and Highley claim that there is no relationship between blood groups and malignancy as suggested by Alexander. Neither is there any relationship between blood groups and any disease in which sufficient data are available to justify a conclusion. The percentages originally presented by Moss are approximate and capable of considerable variation, without special significance. It is suggested that nationality be taken into consideration in the presentation of statistical studies of blood grouping.

**Immunization Against Dysentery.**—Kanai has succeeded in producing certain small degree of immunity in rabbits by the oral administration of *B. dysenteriae* (Shiga). The immunity so obtained is found to be far inferior to that produced by the subcutaneous inoculation of a phenolized vaccine administered in three doses of 50, 100 and 100 millions. The oral administration of large quantities of killed dysentery bacilli to rabbits is without effect on their general condition as judged by the body weight.

**Study of Hemoglobinophilic Bacteria.**—From the investigation of thirty-eight strains of *B. influenzae* obtained from hospital patients during nonepidemic periods the conclusions are drawn by Maitland and Cameron that nearly all strains of *B. influenzae* possess a serologic individuality as determined by agglutination and agglutinin absorption. Identical strains do occur, but they are not frequent. The antigenic value of strains varies. Some are extremely narrow. The serum prepared from such strains agglutinated little more than the homologous organism. The morphologic variations are marked, but do not correspond to variations in agglutination. Two or more serologic races may be present in the same patient. The results were in accord with those from other laboratories.



**Bile Salts and Hemolysis in Blood Stream.**—Ponder states that the bile salts do not cause hemolysis when in the blood stream; nor does hemoglobinuria follow their injection. This is not due to their forming an absorption product with the albumins of the serum. Since they are colloidal in nature, they are with difficulty excreted by the kidney.

### Dublin Journal of Medical Science

December, 1921, 4, No. 22

Hysteria. A. Baldie.—p. 529.

Vaccine Therapy. J. Spcares.—p. 544.

\*Two Cases of Heart Disease, with Electrocardiograms. L. Abrahamson.—p. 562.

**Quinidin Sulphate in Mitral Disease.**—Abrahamson records a case of mitral disease with auricular flutter and 4:1 heart block and a case of auricular fibrillation treated by quinidin sulphate. In all 63 grains of quinidin were administered, in doses of from 3 to 6 grains, in capsules. The result was a slowing of the auricle, and the production of irregular flutter and a quickening of the ventricle. In view of the latter observation, Abrahamson regards it as being inadvisable to give quinidin to patients with a fast pulse.

### Indian Medical Gazette, Calcutta

November, 1921, 56, No. 11

\*Kala-Azar: Diagnosis and Treatment. L. E. Napier.—p. 401.

\*Thirty-Five Snake-Bite Cases and Their Treatment with Different Drugs. M. M. Hazra.—p. 404.

Septic Gastritis in Kashmir. M. J. Roche.—p. 408.

Thymol in Uncinariasis. P. Gupta and J. C. Guha.—p. 408.

Difficulties in Cataract Operations. H. Shanker.—p. 409.

Laboratory Records from Mesopotamia. F. P. Mackie.—p. 411.

\*Hemorrhagic Meningo-Encephalitis in Anthrax: Report of Case. B. Shanks.—p. 418.

Report of Case of Superacute Edema of Lungs. R. Dayal.—p. 419.

**Treatment of Kala-Azar.**—For all patients who are at all debilitated Napier believes it to be a good plan, as a routine measure, to give them a digitalis mixture of some kind. He usually gives the following: Tincture digitalis, 5 minims; tincture nux vomica, 5 minims; tincture rhei compositus, 20 minims; tincture cardamom compositus, 15 minims; chloroform water, add ½ ounce. The mixture should be given for a few days before commencing antimony treatment and may be continued for the first few weeks of the treatment. After this, a mixture containing iron and quinin is useful, as malaria and kala-azar often coexist in the same patient, and a patient seems more liable to malarial attacks when he is recovering from kala-azar. If the patient, when first seen, is in a very weak condition, the antimony treatment is usually withheld for a short time, and under these circumstances an intramuscular injection of the following is given: turpentine, 1 part; creosote, 1 part; camphor, 1 part; olive oil, 2½ parts. This intramuscular injection is also very useful during the course of treatment when a patient, who at first responds well, commences to have a temperature rising daily to 100 F. without showing any sign of falling to normal. An injection will often be followed by a sharp rise to 103 F. with a rapid drop to normal where it will remain.

**Treatment of Snake Bite.**—Antivenene, Hazra asserts, is the specific remedy against the venoms of the cobra, krait and some of the viperines. It is capable of neutralizing venoms when present in the blood stream. The efficacy of this drug depends on the freshness of its preparation and the shortness of the interval between the bite and the administration of the drug. Intravenous injections are more prompt and reliable than other methods of administration, and this can surely save life even when toxic symptoms have developed to a considerable extent. If symptoms do not subside with one injection, repetition, at short intervals, is necessary. Potassium permanganate is a drug capable of neutralizing the venom locally. Subcutaneous injections are more efficacious than simple rubbing. The only trouble is that this method occasionally brings about local pain and swelling. Iodin is a reputable drug for viperine toxemia when thrombosis is developing in the system. Injection of this drug into the vein relieves pain and localized swelling and brings about speedy recovery. Its intravenous injection is free from trouble and danger. All remedies are hopeless after complete fixation of the venom in the brain and nerve cells.

**Hemorrhagic Meningo-Encephalitis in Anthrax.**—The case described by Shanks illustrates the characteristic and interesting hemorrhagic lesions which occur in the meninges and brain as a result of their infection with the bacillus of anthrax. In this case an anthrax bacteremia resulted from a malignant pustule of the face, and gave rise to secondary lesions in the brain, intestines, and parotid.

### Journal of Laryngology and Otology, Edinburgh

December, 1921, 36, No. 12

Mechanism of Cochlea; Inertia of Contained Fluids. G. Wilkinson.—p. 557.

Operative Treatment of Ozena. M. Halle.—p. 567.

Ventricle (Larynx) Stripping Operation on Man. M. Vlasto.—p. 573.

Case of Revolver Bullet in Sigmoid Sinus. E. D. D. Dickson.—p. 575.

### Medical Journal of Australia, Sydney

Nov. 12, 1921, 2, No. 20

\*Pathogenicity of Demodex (Owen) in Human Being and of Other Parasites Producing Skin Diseases. H. Lawrence.—p. 419.

\*Laboratory Diagnosis of Enteric Fever, Agglutination Response to Vaccines. S. W. Patterson, W. W. S. Johnston and F. E. Williams.—p. 425.

\*Treatment of Typhoid Fever with Intravenous Vaccines. K. D. Fairley.—p. 428.

Two Interesting Cases. J. J. Woodburn.—p. 435.

**Laboratory Diagnosis of Typhoid.**—In the laboratory diagnosis of typhoid fever, Patterson and his associates have found blood cultures of great value in the first two or three weeks. In the first week cultures of *Bacillus typhosus* may be obtained in 100 per cent. of cases. In all cases of pyrexia of uncertain origin blood cultures should be made as soon as the patients come under observation. Cultures from the feces may be obtained during the first three weeks in a considerable proportion of cases. The routine culturing of the urine yields a small proportion of positive results, but often a positive result may be obtained from the urine culture alone. A positive diagnosis may be made by successive quantitative estimations of the agglutinating power of the serum, which shows a maximum about the end of the third week. All patients with typhoid fever should be examined during convalescence for the "carrier" state.

**Treatment of Typhoid with Vaccines.**—Fairley has found the intravenous administration of typhoid vaccine in appropriate doses of great value in the treatment of this disease, although vaccine treatment does not replace the ordinary routine treatment. Provided reasonable care is taken in administering the correct amount of vaccine at the initial injection, neither excessive febrile or focal reactions need be feared. The contraindications to this treatment are extremely few. Among the advantages claimed are the dramatic termination of the fever by crisis in 50 per cent. of cases following vaccine administration; the marked amelioration or complete abolition of the toxic features of the disease in all the treated cases, and the absence of a fatal issue in the series of eight treated cases, the mortality rate in the control series being 14.3 per cent.

Nov. 19, 1921, 2, No. 21

Medicine and Law. N. Macrossan.—p. 447.

Warmed Ether Anesthesia. C. Dyring.—p. 451.

Diphtheria and Its Prevention. F. V. Scholes.—p. 453.

Prevention of Diphtheria. M. Jacobs.—p. 455.

Malignant Disease of Head and Neck. L. M. McKillop.—p. 456.

Meningitis with Putrid Cerebrospinal Fluid Following Slight Trauma to Back and Operation for Adenoids and Large Tonsils. W. D. Upjohn.—p. 457.

Two Cases of Acute Abdominal Emergency. G. Owen.—p. 458.

Scroto-Urinary Sinus. T. S. Greenaway.—p. 459.

### South African Medical Record, Cape Town

Nov. 26, 1921, 19, No. 22

Endocrinology. W. T. A. Jolly.—p. 430.

\*Means of Infection in Fly-Borne Disease. N. Faichnie.—p. 438.

**Methods of Infection in Fly Borne Disease.**—Faichnie contends that it is only the excrement of fecal bred flies that can cause enteric fever or bacillary dysentery to any great extent. These flies become infected in their larval stage, consequently the place where they are bred is a matter of far greater importance than the food they feed on. The most important source



of fecal bred flies are night-soil pits. Individual fecal deposits do not, as a rule, breed flies, but, under favorable circumstances, as in ash pits or manure heaps, they may. Four hundred flies have been bred from one single human evacuation. Where water drainage is not available, flies must be prevented from breeding in fecal matter by incineration, deep, or shallow trenching properly carried out, or modified septic tanks. Refuse suspected of containing fecal matter also should be disposed of by incineration or in destructors.

### Archives Franco-Belges de Chirurgie, Brussels

October, 1921, 25, No. 1

- \*Old Pleural Fistulas. J. Duvergey.—p. 1.
- \*White Swelling of Knee. Vignard and R. Comte.—p. 14.
- \*Banding Aneurysm of Aorta. L. Rénon et al.—p. 54.
- Inward Luxation of Elbow. M. Patel and A. Badin.—p. 62.
- Neuromas on External Genitals. Lemoine.—p. 74.
- Macroactylia of Two Last Toes. Dordou.—p. 76.
- Traumatic Subserosa Hemorrhage in Cecum. Le Jemtel.—p. 78.
- \*Surgery of Seminal Vesicles. Dordou.—p. 82.
- Pleurisy Secondary to Appendicitis. Le Jemtel and Boulard.—p. 88.

**Old Pleural Fistulas.**—Duvergey expatiates on the fine results he obtained in forty-eight cases of fistulas persisting after operative treatment of purulent pleurisy or war wounds of the chest. He resected the ribs over the cavity and the parietal pleura to correspond, and then peeled off the thickened visceral pleura, thus releasing the lung from this hampering shell. The rigid shell hampers the excursions of the chest wall, so that a spontaneous cure is out of the question after the fistula has lasted for five or six months. The patient must be in good condition and free from fever before attempting the decortication. Resection of ribs alone is not enough; the lung has to be released from the stiff shell. It then resumes functioning and the conditions that have been maintaining the fistula are thus done away with at one stroke.

**Tuberculous Arthritis of the Knee in the Young.**—Vignard and Comte relate that in 12 cases of white swelling of the knee they cured it with good functional results in 2 instances; in 4, excursions are not quite normal but there is little if any limping. In the 6 other cases the knee is stiff, straight or flexed. All are described, with 35 illustrations, mostly showing the use of the joint from four to eight years afterward. They are confident that the process is first in the bone, and invades the synovial membrane only secondarily. Heliotherapy requires two years and possibly three for a cure, and their compilation of 114 cases given conservative treatment, shows 29 cured with good and 44 with partial function of the knee, and 44 left with ankylosis, including 34 in which the stiff knee is bent. These results are not so good as the 153 cured in the 181 cases given operative treatment by various surgeons. These figures, they say, justify surgical intervention, and the technic they advocate is to scrape out the tuberculous process in the epiphysis, leaving merely a shell which they fill up with the Mosetig filling. They introduce it in such a way that it does not come in contact with fibrous or muscular tissue but is shut up in a tight bone and muscle box, as it were, and takes months or years to be finally resorbed, as the cavity fills up by the slow natural healing process. The filling is placed in a nicked copper tube. One end is introduced into the cavity and a metal guide, that fits snugly in the tube, is introduced into the other end. With this piston, the filling is forced out and into all the crevices of the cavity. The tube is selected to fit exactly into the opening of the bone so that none of the iodoform filling can escape into the soft parts. Diameters of 8, 10 or 12 mm. answer the purpose, the tubes from 16 to 25 cm. long. The instruments, curet, etc., are made with extra long handles, so they can be passed entirely through both condyles, from side to side. The average duration of treatment was eighteen months. A series of 14 cases, operated on since 1919, confirms the advantages of this method of treatment. Although it is too early yet to include them in statistics, 5 can flex the knee almost normally, and 6 have a stiff straight knee.

**Fusiform Aneurysm of the Ascending Aorta.**—Rénon's roentgenograms show the large aneurysm two months and ten days before Tuffier made a compressing sheath from a square sheet of fascia lata tissue from the thigh. By this means the lumen of the aorta was restored to normal size,

and roentgenograms over five and six years later show the outline of the aorta still approximately normal. The sternum was divided and drawn aside, which gave ample access. Tuffier describes the technic, and adds that he regretted having made and left a right pneumothorax, and that the sternum had not been replaced exactly properly, and that a number of physicians were present at the operation and they bent over the field and infected it. The woman died from intercurrent uterine cancer about six and a half years after the intervention, and consent to necropsy could not be obtained.

**Vesiculectomy.**—Dordou reports with illustrations two cases in which one or both of the seminal vesicles were removed with final healing. The vasa deferentia were ligated without apparently interfering with the genital functions in the case of the man of 56. In the other patient the vesiculitis was of tuberculous origin, with various complications requiring further operative measures.

### Bulletin Médical, Paris

Oct. 22, 1921, 35, No. 43

- \*Recurring Meningeal Hemorrhage. H. Lux and J. Adloff.—p. 843.

**Recurring Meningeal Hemorrhage.**—The final recovery distinguishes the case here reported. The woman of 45 had four meningeal hemorrhages in the course of a month, at different points. The first was in the cerebral meninges, but was slight, the intense headache and inability to move the right arm soon subsided. A week later, symptoms indicated a slight hemorrhage in the cauda equina. The third hemorrhage was more severe, rousing the former foci and inducing coma for several hours. The fourth occurred three weeks later and induced coma and paraplegia of the legs and mental disturbances. Nothing could be found to suggest syphilis or active tuberculosis. The blood findings seemed to be normal and there was no history of a hemorrhagic tendency. The recovery was apparently complete after the seventh lumbar puncture last March, but Cordier has published a case in which a recurring hemorrhage proved fatal after an interval of ten months.

### Lyon Chirurgical

September-October, 1921, 18, No. 5

- \*Juxta-Articular Nodules. F. de Quervain.—p. 561.
- Ankylosis of Temporomaxillary Articulation. L. Imbert.—p. 572.
- \*Rupture of Epigastric Artery. A. Kotzareff.—p. 579.
- \*Access to Subclavian Artery. Nadine Dobrovolskaia.—p. 593.
- \*Spinofacial Anastomosis for Facial Paralysis. M. Titone.—p. 601.
- \*Decompressive Trephining After Trauma. H. Alamartine.—p. 606.
- \*Fracture of Femur in Adults. A. Charbonnier.—p. 625.
- \*Sprain and Subluxation of Wrist. E. Destot.—p. 659.

**Juxta-Articular Nodules.**—De Quervain describes a case of multiple juxta-articular nodules of twenty years' standing in a man of 55 who had never left Switzerland. Excision of one of the tumors revealed it to be a syphilitic gumma, and he thinks this is probably the explanation of the juxta-articular nodules of tropical countries. The strain of spirochetes involved seems to display a special affinity for the connective tissue, and a predilection for regions exposed to repeated trauma. The question can be definitely decided only by examining for syphilis in all cases of juxta-articular nodules.

**Spontaneous Rupture of Epigastric Artery.**—Kotzareff's retrospective diagnosis in the case described is that the arteriosclerosis in the woman, now 55, had induced a partial aneurysm in the epigastric artery. The aneurysm burst in 1914, causing violent pains for two days, but then subsiding, the artery having evidently become closed again by thrombosis. Two similar attacks followed in 1916, the last one so severe that the artery had to be ligated. There has been no recurrence of trouble at this point, but the patient now presents brain symptoms, evidently from sclerosis of the cerebral vessels.

**Access to Subclavian Artery.**—Dobrovolskaia is professor of surgery in a Russian university, and she has applied in a number of cases a method of access to the subclavian region which she first published in 1916. The incision follows the sternocleidomastoid muscle and beyond, between its two heads, to the sternoclavicular articulation. It curves around this and is then carried down to the bone along the lower



margin of the clavicle to a point a little beyond the center. The two heads of the muscle are then severed, and the clavicle is disarticulated and drawn upward with all its connections with the soft parts undisturbed. Three cases are described with illustrations to show the advantages of the procedure for access to the subclavian vessels and the brachial plexus. The articulation with the sternum is reconstructed with a couple of stitches.

**Anastomosis of Nerves to Correct Facial Paralysis.**—Titone reports two cases with quite satisfactory results from his anastomosis of the spinal nerve with the facial nerve to correct traumatic paralysis of the right facial nerve.

**Decompressive Trephining.**—In Alamartine's six cases described, the injury was the result of a fall on the head, and the decompressive trephining did not prevent the fatal meningitis in one case or the death from hemorrhage without fracture in another. The other men recovered, but one still has headache and dizziness at times.

**Fracture of the Femur.**—Charbonnier analyzes eighty-eight cases of fracture of the femur in Kummer's service, 1916 to 1919, comparing the outcome with different modes of treatment. Nail extension gave excellent results in 84.5 per cent. of the cases in which it was applied, and no serious by-effects were observed in any instance. The Steinmann nail extension method may be counted on, therefore, he says, to give excellent functional results, especially with fracture of the shaft of the femur, and it materially shortens the stay in the hospital. The few drawbacks of the method are amply compensated by the fine results it is capable of giving. Consolidation required from twenty-five to fifty days.

**Sprained Wrist.**—Destot refers to what he calls scapho-semilunar subluxation, as well as simple sprain, and tells how to recognize and treat both. He prefers immobilization for five or six days with a stiff cardboard splint, leaving the fingers free, rather than massage or rubbing. Compression with cotton aids in resorption of exudation. The hand should slant toward the ulnar side, and be slightly flexed. The subluxation can usually be reduced with the thumb, pushing on the foveola radialis. With recurring subluxation, a laced leather cuff can be worn.

### Presse Médicale, Paris

Dec. 3, 1921, 29, No. 97

Measurement of Flocculation by Photometry. A. Vernes.—p. 957.

\*Antianaphylactic Shock and Colloidoclasia. A. Lumière.—p. 960.

\*Costal Osteochondritis After Typhus. Nadine Dobrovolskaia.—p. 961.

Dec. 7, 1921, 29, No. 98

Medico-Social Features of Children's Clinic. Nobécourt.—p. 969.

Syringomyelia plus Spina Bifida. M. Klippel and A. Feil.—p. 971.

Dec. 10, 1921, 29, No. 99

Practical Ration for Children. Renault and de Tannenberg.—p. 977.

Diathermy in Treatment of the Gallbladder. J. Aimard.—p. 981.

Present Status of Dietetic Treatment of Diabetes. Cheinisse.—p. 981.

**The Antianaphylactic Shock and Colloidoclasia.**—Lumière replies to certain objections that have been made to the theory of flocculation as the essential process in the anaphylactic shock. Although the microscope, even the darkfield, is unable to show up the flocculation, yet it can be verified by the agglutinoscope, the seroscope, the dispersimeter and similar instruments. The widely varying substances which induce anaphylaxis all have only one property in common, their flocculation, and the procedures which ward off anaphylaxis all have only one feature in common, namely, their power of preventing flocculation. This can be accomplished by reducing the excitability of the vessels, as with anesthetics; or by means to prevent vasodilatation; or, if the dilatation has occurred, by means to restore the normal proportion between the total capacity of the dilated vessels and the total of the blood. This indication can be met by intravenous infusion of fluid to restore the balance. Another means to ward off shock is by preventing the sudden action of precipitates on the endotheliums, such as occurs when the carotid is ligated, or with venesection, etc.

**Complicating Costal Osteochondritis.**—Dobrovolskaia refers to cases developing after typhus or relapsing fever, of which she has seen a number of instances. It is not a secondary

infection, and it calls only for conservative general treatment plus intragluteal injections of iodoform with tincture of iodine. A tuberculous soil is common. The clinical picture and course are like those with similar typhoid lesions.

### Revue de Chirurgie, Paris

1921, 59, No. 3

\*Ankylosis of Knee in Children. Vignard and E. Vincent.—p. 153.

\*Treatment of Pulsating Exophthalmos. A. Cauchoix.—p. 197.

\*Blood Cysts in Omentum. M. Oberlin.—p. 216.

**Correction of Ankylosis of the Knee in Children.**—Vignard and Vincent refer to ankylosis of tuberculous origin. With this, they say, there is nothing to be gained by intervention unless the knee is flexed to a crippling extent. The ankylosis should be respected, as this insures the solidity of the limb. But it may be transformed by supracondyle linear osteotomy or, better yet, by osteoclasis. Arthroclasis corrects the deformity without shortening the limb and it can be applied whether the ankylosis is of bone or cartilage, but an interval of three years must be allowed after the complete clinical cure. In the eight cases described, there was never any flaring up of the tuberculosis. Robin's arthroclast answers the purpose perfectly, and the speedy bone repair in children completes the procedure, filling in the gap at the back left by the forcible straightening of the joint. The bone is fractured inside the capsule, at the most prominent part of the curvature, and the procedure is simple and harmless, for children, they reiterate.

**Treatment of Pulsating Exophthalmos.**—Cauchoix gives four pages of the tabulated details of 18 cases of pulsating exophthalmos treated by ligation of vessels. Only 57.4 per cent. are said to have been cured. In 6 cases the internal carotid was ligated, but only in 66 per cent. with success. In 5 cases both the internal and the common carotid were ligated. In 10 cases both common carotids were ligated for other causes. In 13 cases the vein was ligated for pulsating exophthalmos; the carotid artery had been ligated beforehand in 10 of these cases. Among the final conclusions, the danger of bilateral ligation at the same time is emphasized, and also the advantages of ligating the ophthalmic vein. The latter is so frequently effectual that it deserves an important place, if not the predominant place, in the treatment of pulsating exophthalmos. It is so comparatively harmless that it certainly should be tried in most cases. The superior ophthalmic vein was ligated in 7 of the cases. One surgeon resected the outer wall of the orbit, but the others exposed the vein through an incision at the base of the upper lid. Noyes ligated the inferior ophthalmic vein and three others threw the ligature around the angular vein. In one case intense headache followed, with slowing of the pulse, which he ascribes to thrombosis in the sinus cavernosus. Zeller warns on this account that the ligation of the vein might entail pulmonary edema, but nothing of the kind has ever been observed.

**Blood Cysts in the Greater Omentum.**—Oberlin remarks that intracystic hemorrhage in a serous cyst is more liable to be encountered in the young than the other variety, encysted hematomas. He reviews twelve cases of the former and six of the latter, with five cases of cystic tumors, sarcomas, lymphangiomas or endotheliomas.

1921, 59, No. 4

\*Serology of Traumatic Shock. Cornioley and Kotzareff.—p. 233.

\*Syphilitic Disease of Joints. J. Dupont.—p. 264.

\*Gastric Ulcer After Gastro-Enterostomy. J. E. Larrieu.—p. 278.

**Serotherapy in Traumatic Shock.**—Cornioley and Kotzareff assumed that the toxic albuminoids generated in crushed muscle tissues must circulate in the blood serum and induce the production of antibodies. They confirmed this by experiments on rabbits, inducing a crossed circulation, and then inducing traumatic shock in one of the animals, or else injecting a normal animal with serum from one with traumatic shock. They have thus confirmed the endogenous nature of traumatic toxemia. Blood or serum from animals that had had tissues crushed, when injected into normal animals, induced phenomena of shock, the blood pressure dropping, chills, somnolency. These symptoms persisted for



several hours and then gradually subsided. The serum alone, in larger amounts, killed the animals. The next step was to vaccinate normal animals with the shocked animal's serum, and thus render them immune to the action of the traumatic toxemia when it was induced by crushing of tissues. The animals thus prepared by the vaccination, developed merely abortive symptoms of traumatic shock when tissues were crushed. These and other experiences open a prospect for serotherapy of traumatic shock by injection of an extract of sound muscles. They were able thus to immunize animals until they bore without serious harm repeated traumatic shock growing progressively more and more severe. The serum of these animals finally became so loaded with anti-toxins that it did not induce shock phenomena when injected into normal animals, even when drawn at the height of traumatic injury of tissues. "How far we are from the 1914 conception of traumatic shock as of nervous origin!" Their research suggests that this principle of serotherapy of shock might be applied in cases of fractures, burns, fatigue, and probably also in cancers.

**Syphilitic Joint Disease.**—Dupont found the multiplicity of the manifestations in the joint a feature of the syphilitic joint cases, as also that symmetrical articulations were usually involved, at the same time or with a longer or shorter interval. One man's right knee was affected in 1912; the left in 1914, and in 1918 both knees. The joint affection was indolent in twelve of his eighteen cases. Several of the patients were soldiers, and they continued their military service without functional disturbance from their enlarged joint. The excursions of the joint may be normal. The long duration of the joint affection and the frequent relapses are other special features, as also the prompt and complete cure under treatment for syphilis. This is the touchstone. Radiography may be misleading. Nearly all the cases he has encountered had been mistaken for tuberculous, gonococcus, rheumatic or traumatic arthritis. In certain cases, traumatic injury of the joint seemed to have been instrumental in attracting the syphilitic lesion to develop at that point. In one young man an acute dysenteriform arthritis prepared the soil for a specific arthritis from inherited syphilis.

**Postoperative Perforation of Gastric Ulcer.**—Larrieu has collected 81 cases in a total of 10,500 gastro-enterostomies in which perforation of the gastric ulcer occurred after the gastro-enterostomy. In all these cases the lesions were of long standing, with adhesions that hampered the operator. No instance is known in which the perforation occurred with a recent ulcer. In short, he concludes, the gastro-enterostomy must not be incriminated for mishaps due to defective technic, tearing of adhesions, to the neglect of proper care in diet after the operation, or to the incurable phase of the lesions when the surgeon is called in.

### Revue Franç. de Gynécologie et d'Obstét., Paris

October, 1921, 16, No. 10

\*Curetting in Postpartum Infection. A. Grosse.—p. 529.

\*Hernia of Fallopian Tube. J. Delépine.—p. 548.

**Postpartum Curetting.**—Grosse admits that the curet is rarely indicated after delivery, but he insists that in certain cases of retention of scraps of membranes or placenta nothing else can take its place. He never uses it for mere exploration. After curetting, he leaves a wick of gauze in the cervix, to keep it open, and the next day rinses out the uterus with an 18:1,000 solution of magnesium chlorid. This is harmless, he says, and stimulates the vitality of the cells, in addition to its peculiar cleansing action on devitalized tissues. In the maternity in his charge (Nantes) there have been a number of infected cases in the last two years, but only 11, in his opinion, required curetting. All recovered except one woman with hydramnion and grave septicemia, scanty and odorless lochia. The curetting had been done as a last resort, but no retained scraps were found, and no improvement followed it. In some of the other cases, he says, the women evidently owed their lives to the curet.

**Hernia of Fallopian Tube.**—Delépine reports a case of strangulated femoral hernia in which the contents of the sac proved to be the fimbriated end of the tube. The ovary could be

drawn down to the incision, and it seemed sound. The tube was resected, but no traces of inflammation could be detected in it. His review of the less than twenty cases published in the last seventeen years shows that hernia of the tube is remarkably benign. The tube should never be reduced after such an experience except in the young, and then only if it seems absolutely sound. The diagnosis has never been made before the operation in any instance, ordinary hernia having been assumed.

### Schweizer Archiv f. Neurol. u. Psychiatrie, Zurich

1921, 8, No. 1

Affective Movements in Relation to Voluntary and Reflex Movements.

W. van Woerkom.—p. 3.

Present Status of Psychotherapy. O. Veraguth.—p. 29.

Development of the Reactions and the Plantar Reflex in the Prematurely Born and to the Age of Two. H. Bersot.—p. 47. Conc'n.

Pathologic Anatomy of Posthemiplegic Athetosis. H. Steck.—p. 75.

Duration of Hallucinations. T. Witry.—p. 86.

\*Dementia Praecox Families. W. Boven.—p. 89.

**Conditions in Families in Which Dementia Praecox and Manic-Depressive Psychoses Are Liable to Develop.**—Boven emphasizes that when a child is born he is not the product of his parents alone but of the family as a whole. The child may resemble an uncle more than its own father—Nature may thus provide for the perpetuation of celibates. Study of the elements displayed on the family palette will often clear up the pathogenesis of mental disease. Lack of sociability is the basis of the pathologic character in dementia praecox families. If sociability is cultivated, the danger is less, especially if emotions, infections and intoxications can be warded off. When there is a sociable tendency in the family, but with a trend to sadness, melancholia and manic-depressive insanity can be pictured from the elements on the family palette. Even with our imperfect knowledge of familial characterology, much can be done in prophylaxis, he remarks in conclusion.

### Archivio Italiano di Chirurgia, Bologna

November, 1921, 4, No. 3

\*Changes in Nerve Implants. A. Albanese.—p. 215.

\*Experimental Injury of Gallbladder. G. B. C. Fulle.—p. 229.

\*Congenital Cysts and Fistulas in the Neck. L. de Gaetano.—p. 265.

\*Sarcoma of the Parotid Gland. R. Cassanello.—p. 325.

\*Rare Form of Inguinal Hernia. G. Regoli.—p. 334.

**The Changes in Nerve Transplants.**—Albanese's experiments included transplanting segments of rabbit nerves in dogs and of dog nerves in rabbits, in addition to auto-implants and implants of nerves from the same species. The results confirm anew that heterogenous tissues seem to possess some mysterious property which interferes with the normal development of the biologic processes when transplanted. He gives three colored plates showing the difference in the histologic findings in these different conditions.

**Experimental Wounds of the Gallbladder.**—Fulle found that the length of survival of the dogs and rabbits was not proportional to the amount of bile that had escaped into the peritoneum, but seemed to depend on whether the bile had been in contact with the peritoneum for any length of time. Sudden flooding of the peritoneum with bile from a large incision in the gallbladder or by injection of bile taken directly from the gallbladder of another animal proved constantly fatal. On the other hand, even larger amounts, if oozing gradually from a small incision, were borne much better, and bile pigments appeared in the urine. Bile taken directly from the gallbladder proved much more toxic when injected by the vein in other animals than extravasated bile taken from the peritoneum. The peritoneum seems to be able to neutralize the toxicity of the bile. The suprarenals seem to suffer first and most from toxic action of the gallbladder bile.

**Congenital Cysts in the Neck.**—De Gaetano has now a record of 20 operative cases of congenital cervical cysts (12) or fistulas (8). He analyzes them all, with 38 illustrations and 5 pages of bibliographic references. Radical removal of all the embryonal tissue of the same kind, persisting in the region of the cyst, is the only means to insure against recurrence.



**Sarcoma of Parotid Gland.**—Cassanello at first advised expectant treatment when the 3 months' babe was brought to him with a pure sarcoma in the right parotid gland. As the tumor soon tripled in size, he removed it at the age of 8 months. There has been no recurrence during the more than a year since, and the child seems to be thriving normally except for the facial paralysis entailed by the operation.

**Rare Variety of Inguinal Hernia.**—Regoli has operated in five cases of anomalous oblique external inguinal hernia as he describes. It may come under the heading of an occupational accident.

### Pediatrics, Naples

Nov. 15, 1921, 29, No. 22

\*Treatment of Pertussis. L. Auricchio.—p. 1009.

\*Cholesterin Content of Blood in the New-Born. R. de Simone.—p. 1023.

\*The Potential Energy in Breast Milk. C. Pestalozza.—p. 1027.

**Vaccine Therapy of Whooping Cough.**—Auricchio preferred Caronia's vaccine, that is, an autolysate of a forty-eight hour culture of the Bordet-Gengou bacterium, in distilled water to which 0.5 per cent. phenol is added and, three days later, 0.85 per cent. sodium chlorid. The dose is calculated to contain two thousand millions of the bacteria in 1 c.c. of the vaccine. With this specific vaccine, we enhance the allergic immunity as well as the general immunity, while nonspecific vaccines enhance the latter alone. The dose was 2 c.c., injected into a muscle every day or second day, and no drug was given during the course. He tabulates the results in 196 cases, only 14 not showing benefit from the treatment, while 67.8 per cent. were entirely cured and 26 per cent. were improved. In the 6.2 per cent. in which the pertussis was not attenuated by the treatment, the disease was far advanced when the vaccine therapy was begun or other pathologic conditions interfered with its action. In a further group of 24 children treated by intramuscular injection of ether, with which Genoese, Audrain and others have reported encouraging results, no result was apparent in 87.5 per cent. and only 4 per cent. were cured, although all in this group were in favorable conditions for treatment. The ether has a sedative action, but this is transient, the attacks soon returning as violent as at first. The ages in the total 220 children ranged from 2 months to 9 years, the younger infants being cured by the vaccine as regularly as the older children. One infant of 2 months was given 20 c.c. in eleven days, begun the forty-fifth day of the disease. One only 1 month old was cured by 6 c.c. in the course of six days, begun the fifteenth day. The largest amount required for a complete cure was 26 c.c. in one 5 months' babe, begun the forty-fifth day of the disease, and the smallest amount was 4 c.c. in three days in a girl of 8, begun the fourth day of the disease.

**Cholesterin in the Blood of the New-Born.**—De Simone found that the cholesterin ranged from 0.65 to 1.05 per thousand in twenty-seven infants tested, from 2 to 17 days old. The lowest figures were in the youngest and frailest of the children, the smallest proportion being in those with inherited syphilis.

**The Potential Energy in Breast Milk.**—Pestalozza's tables confirm that the fat is mainly responsible for the potential energy of breast milk. He found further that by varying the woman's diet, having her eat more fat, it was possible to increase the proportion of fat in the milk. Chemical analysis of the milk gave much lower calory figures than analysis with the Berthelot apparatus. With the latter, the milk always showed from 80 to 100 calories more than by chemical analysis of the dry residue. The twenty-four separate analyses were all made on the milk of one woman in twenty-four consecutive weeks.

### Policlinico, Rome

Nov. 21, 1921, 28, No. 47

\*Regional Tuberculin Skin Reaction. E. Mondolfo and Coscera.—p. 1571.

\*Tic of the Diaphragm. I. Bersani.—p. 1576.

Schoolchildren's Health Register. T. Bertani.—p. 1578.

Plastic Closure of Femoral Canal. A. Indelli.—p. 1589.

**Regional Skin Tuberculin Reaction.**—Mondolfo and Coscera applied the tuberculin test over the focus in 82 tuber-

culous patients or suspects, and tabulate the findings. In 15 with an apical process, the skin tuberculin test applied to the supraclavicular process induced a much more intense reaction than on the other side or arm. The regional response was much more intense likewise in 3 of 4 cases of renal tuberculosis; in 2 cases of tuberculous pelvic processes; in 10 of 13 with pleural or peritoneal effusions; in 5 of 6 with artificial pneumothorax, and in nearly all of 11 with tuberculous bone or joint disease. The regional reaction seems to occur earlier and with greater intensity than with the ordinary arm technic. A lively regional response testifies to an active process in the depths below, and is particularly useful in thus differentiating the active from the latent.

**Tic of the Diaphragm.**—In the case reported by Bersani in a man of 51, a gardener, the rhythmic clonic contractions of the diaphragm, up to 120 a minute, were not accompanied by hiccup, and conditions otherwise seemed to be normal. The attacks occurred irregularly, sometimes after emotional stress, and the man was able to accentuate or inhibit them at will. It never seemed to occur during sleep. Remak has reported a somewhat similar case, the clonic contractions up to 48 or 54 a minute and violent enough to shake the trunk. Galvanic electricity to the back of the neck and back checked the spasms, and they finally subsided completely. Satta has described 5 cases differing only in the fact that the phenomenon was continuous, even during sleep. He ascribed it to myoclonia, but in Bersani's case a neuropathic element and the tic nature are beyond question.

### Gaceta Médica de Mexico

January-September, 1921, 55, No. 1. National Centenary Number

\*Early History of Medicine in Mexico. N. León.—p. 3.

\*Findings in Eye Fundus After Skull Trauma. R. Silva.—p. 49.

\*Diverticulum in Bladder. Ulises Valdés.—p. 63.

Surgical Treatment of Abscess in Side of Pharynx. R. Tapia y Fernández.—p. 71.

Glioma of Suprarenal Capsule. I. Prieto.—p. 81.

\*Site for Amputation of Leg. Rosendo Amor. E.—p. 91.

Some Surgical Notes. J. Velásquez Uriarte.—p. 99.

Bubonic Plague at Veracruz in 1920. M. S. Iglesias.—p. 109.

Campaign Against Plague at Veracruz. O. González Fabela.—p. 121.

Insect Eggs as Food. M. Cordero.—p. 141.

\*Treatment of Keratoconus. A. F. Alonso.—p. 149.

Teaching Hygiene in the Primary Schools. J. E. Monjarás.—p. 157.

Methylene Blue in Therapeutics. F. Bulman.—p. 165.

Frequency of Vertex Presentation in Mexico. E. Landa.—p. 171.

Obstruction of Nose in Children. P. P. Peredo.—p. 183.

\*Draining Adnexa Through Vagina. M. Godoy Alvarez.—p. 201.

The Diet in Institutions for Children. R. Carrillo.—p. 207.

\*Dementia Praecox. E. O. Aragón.—p. 219.

\*Infants' Diarrheas. Santiago Ramírez.—p. 223.

Modification of Wassermann Reaction by Natural Antisheep Amboceptor. E. Cervera.—p. 231.

\*Present Status of Obstetric Surgery. A. López Hermosa.—p. 247.

A Mexican Plant of Tournefortia Family. J. M. Noriega.—p. 255.

\*Some Medicolegal Studies of Blood. F. Castillo Nájera.—p. 271.

\*The Sensory Chiasmata. Ramón Pardo.—p. 293.

Tuberculous Lupus of Leg. J. González Urueña.—p. 347.

\*Experimental Yellow Fever. P. Pérez Grovas.—p. 351.

Malignant Smallpox Sore Throat. D. López.—p. 360.

We Go Forward or Backward, Never Stand Still. M. Uribe Troncoso.—p. 363.

Hematology of Altitude. D. Vergara Lope.—p. 368.

Analogies Between Medical Art and Musical Art. F. Hurtado.—p. 370.

**History of Medicine in Mexico.**—León reviews in this third instalment the years 1601 to 1625, portraying conditions of medical practice, hospital service and of medical education in Mexico under Spanish rule.

**Fundus Findings with Trauma of Skull.**—Silva discusses a case in which optic neuritis in both eyes, after a fall from a horse and development of acute otitis, called for lumbar puncture at once. This relieved the headache, and vision gradually improved to complete recovery. Spinal puncture not only may ward off blindness in such cases but it throws light on the nature of the damage from the trauma. The fundus may reveal some complication, possibly unsuspected otherwise, but which may progress to fatal meningitis. Inflammatory and mechanical factors may be so blended that it is impossible to separate them.

**Diverticulum of Bladder.**—Valdés gives an illustrated description of the first case of the kind to be published in Mexico, although the anomaly is probably not uncommon. In his case the diverticulum had been located, but adhesions



prevented invagination of the diverticulum, and a fistula persisted for eight months. The man then applied to another surgeon to cure the fistula; the surgeon, not knowing of the diverticulum, merely closed the fistula by the usual technic. The pyuria continued, however, and the fistula opened up again. Roentgenoscopy then revealed the diverticulum, and after it was excised, clinically normal conditions were restored.

**Technic for Amputation.**—Amor discusses the technic best adapted for persons unable to pay much for prostheses.

**Treatment of Keratoconus.**—Alonso compares the various methods of treatment advocated, and describes the excellent results obtained in a recent operative case in a boy of 14 who has regained satisfactory vision. He could hardly distinguish light from darkness with that eye before.

**Draining a Pus Pocket in the Adnexa Through the Vagina.**—Godoy Alvarez has been much gratified with the success in this line, rendering the planned laparotomy unnecessary. He introduced a trocar through the roof of the vagina and, guided by this, introduced forceps into the focus. Spreading the blades of the forceps brought a flood of pus. Recovery was always smooth, and the patients had escaped a mutilating operation.

**Dementia Praecox.**—Aragón takes a pessimistic view of dementia praecox proper, but he says that the psychasthenia of puberty and hysteria from ovarian insufficiency may induce clinical pictures liable to be mistaken for dementia praecox. In one case he describes, the hysteria of a girl who had failed to menstruate at the proper age, was diagnosed as dementia praecox. She was placed in an asylum, with epileptics and insane, and was growing worse, when Aragón prevailed on the family to send her into an entirely new environment. After a year in a boarding school, during which menstruation became established, the girl is now apparently completely normal.

**Diarrhea in Infants.**—Among the causes of diarrhea, Ramírez mentions unsuspected syphilis, and relates the gradual recovery under mercurial inunctions of an infant that had had diarrhea and vomiting for the two months since its birth. In a group of other cases nothing arrested the diarrhea except parenteral injection of breast milk. This proved promptly effectual. One in this group was his own child who had had diarrhea and colics from the first days of its life to the third month when he injected the milk. One infant nearly 3 months old had been having sixteen stools a day; a total of 9.5 c.c. of milk was injected in four days, in the amounts of 0.5; 1; 3 and 5 c.c., and there was no further diarrhea.

**Obstetric Surgery.**—López Hermosa analyzes the indications for surgical intervention in obstetrics, and the trend of the times to audacity in obstetric surgery. He reiterates the necessity for always bearing in mind that parturition is an essentially physiologic process, and always being certain of the cause of the dystocia before operating.

**Medicolegal Study of Blood.**—Castillo Nájera experimented on dogs and rabbits to learn whether it is possible to tell from the blood corpuscles in the blood coagulated in a wound whether the wound had been inflicted during life or after death. He describes the findings in this respect also in eleven medicolegal cases. This means of investigation not only reveals whether there had been a vital reaction to the wound, but the interval since the wound was inflicted can be approximately estimated by the deformation and condition otherwise of the corpuscles. The findings are instructive even when the blood is mixed with other fluids and pathologic products. When the erythrocytes have been all destroyed, the excess of leukocytes—in comparison to those found in blood from other regions—testifies to the vital reaction that had taken place.

**Psychologic Importance of the Chiasmata.**—Pardo comments on the incompleteness of the crossing of the fibers of nerves in decussation, and the importance of this very incompleteness for the phenomena of perception.

**Experimental Yellow Fever.**—Pérez Grovas inoculated guinea-pigs with blood from persons at Veracruz suspected of having yellow fever. The animals developed the typical

disease, and from the blood of the patients and also from the blood of the animals he succeeded in obtaining pure cultures of *Leptospira icteroides*. His report was published in full in THE JOURNAL, Feb. 5, 1921, p. 362.

## Archiv für klinische Chirurgie, Berlin

1921, 117, No. 1

- The Subjective Symptoms of Arthritis Deformans. N. Guleke.—p. 1.
- \*Plastic Operations on Bones. T. Gluck.—p. 13.
- Congenital Fracture of Femur. P. Frangenheim.—p. 22.
- \*Importance of Neuroma on Central Nerve Stump. F. Brüning.—p. 30.
- \*Pylorus Preserves Against Postoperative Peptic Ulcer. Haberer.—p. 50.
- \*The Pylorus and Postoperative Peptic Ulcer. G. Kelling.—p. 68.
- \*The Failure of Deep Roentgen Therapy of Cancer. F. Keysser.—p. 97.
- \*Results of Cholecystectomy. Hinz.—p. 106.
- \*Surgery of the Pericardium. H. Klose.—p. 138.
- \*Treatment of Pseudarthrosis. Von Lorentz.—p. 149.
- Diaphragmatic Hernias. B. Breitner.—p. 164.
- Carcinoma of Common Bile Duct. Amberger.—p. 189.

**Bone Plastic Operations.**—Gluck recalls his publication in 1890 of the results of his plastic operations on bones which he had been practicing since 1876. He here describes the ultimate outcome in a number of cases in which he had bridged extensive gaps in long bones by implants of bone, ivory or metal. He now has a long record of 220 cases of osteomyelitis treated by resection into sound tissue and osteoplastics. Bone implants were used in Asia over five centuries ago, but the principle of his work in this line was to get the tissues to heal over the implant, and make the latter serve not only for fixation and support, but as a stimulus to regeneration of bone tissue, and as a guide for its proper shaping and functional use. It is immaterial whether dead or living bone is used, or ivory or metal, if the ends are invaginated in the bone marrow of the stumps, and if healing is by primary intention. The organism adopts the support and proceeds to substitute the foreign substance with living bone tissue, not casting off necrotic particles, but seeking to incorporate them in the new bone, a process of *substitutions-synostosis*, as he calls it. A number of cases are described in which an ivory implant replaced two thirds of the ulna, or the whole of the radius or tibia, all between 1890 and 1893, and the result to date has been perfect. The roentgen rays show in the place of the ivory a strong and functionally capable bone shaft. One man, now 32, with an ivory tibia since the age of 5, served through the war without mishap. One girl, now 15, had two thirds of the tibia substituted ten years ago by a bone from an old Paris mounted skeleton. The tibia now seems absolutely normal in outline and function. One case reported was the first instance of successful transplantation of a whole bone with the epiphysis portion, and artificial production of a new joint. The fibula was substituted for the tibia and talus, with production of a fibulo-calcaneum joint, with the aid of an ivory peg, all under roentgen control since 1898. When a metal implant is used, it may heal faultlessly in place, or it may be cast off later after it has answered its purpose as a support and stimulus to regeneration. In one such case two thirds of the shaft of the femur were replaced with a metal bar, removed six months later. In another case the metal bar replaced the entire femur, its upper end implanted in the acetabulum, the lower in the marrow of the tibia. The bone regenerated from both hip joint and tibia, and the metal implant was removed after nine months. The man can walk and jump on that leg, although it is shorter than its mate.

**The Neuroma of the Central Stump.**—Brüning ascribes to irritation from the scar tissue on the stumps the pathologic conditions after a nerve is severed. Trophic disturbances may yield to neurolysis; if not, the neuroma should be resected, with suture. If this is not practicable or the neuroma returns, periarterial sympathectomy should be tried on the main artery of the limb. Only after exhausting all these measures should amputation be considered. He describes some cases of prompt healing of rebellious trophic disturbances after resection of the inflamed section of the nerve or merely of the neuroma of the central stump.

**The Pylorus and Peptic Ulcers.**—Haberer has long proclaimed that the pylorus enhances the danger of peptic ulcer in the jejunum, whether the pylorus is open or shut off. This is probably due to spasm of the pylorus, and by resecting the



pylorus this factor is eliminated. In 710 resection operations on the stomach in which this principle was followed, there has been no instance of peptic ulcer to date, regardless of whether merely the pylorus or a large portion of the stomach had been resected. On the other hand, peptic ulcer developed in 20 per cent. of 71 cases in which the pylorus was not resected but merely tied off. The interval before the jejunal peptic ulcer developed, ranged from a few weeks to eight years. Gastro-enterostomy alone is much less liable to induce a peptic ulcer; it occurred in scarcely more than 1 per cent. of his 265 cases of this kind. In his total of 17 peptic ulcers, the primary operation had been for a duodenal ulcer in 14, and in only 3 for a tumor at the pylorus. Recurrence of the peptic ulcer was certain in 2 of his 18 cases, and was probable in another, and a permanent cure was not realized until the pylorus segment was resected.

**The Pylorus and Peptic Ulcers.**—Kelling does not agree with Haberer's views set forth in the preceding abstract, and cites eight cases of peptic ulcer on record in cases in which the pylorus had been resected, and four others, with a personally observed fifth case, in which peptic ulcer had developed after a Billroth I or II operation. He also cites a large number of cases of exclusion of the pylorus with no tendency to peptic ulcer, and reports research on the physiology of the pylorus with tests of pylorus extract. He urges to make a Kader fistula into the fundus of the stomach and also into the pylorus region after an exclusion operation on the pylorus, and even after simple gastro-enterostomy for gastric ulcer. This is in the interests of the patient, while it would afford extremely useful information for general application, and especially on the pathogenesis of ulcer. The fistulas might serve for direct medication and for feeding. He suggests further that it might prove possible to induce atrophy of the stomach enough to conquer hyperchlorhydria, by feeding through a jejunostomy for a time. In any operation on the stomach, the blood supply to the stumps must be carefully guarded, and especially with exclusion of the pylorus. Milk seems particularly advisable as a food to aid in the healing of an ulcer. Foods that most stimulate gastric secretion should be carefully avoided, and others taken freely that bind the hydrochloric acid, such as soft cheese, milk dishes, milk powder and finely chopped meat.

**Biologic Prophylaxis of Cancer.**—Keysser quotes Bumm and Schäfer to the effect that in their compilation of cases of cancer of the uterine cervix given operative treatment alone, 48.6 per cent. were free from recurrence after a five year interval, but only 25 per cent. after roentgen-ray treatment alone. Krönig declares that we can count on only 15 per cent. of all cancers being permanently cured by operative measures. Keysser comments that it is more rational to try to modify conditions in the host by a biologic prophylaxis. He now has a record of 14 cases treated systematically along these lines about eight years ago. A 20 and a 50 per cent. emulsion was made of 1 mg. of the tumor tissue in 9 c.c. of physiologic saline. The cells were devitalized with a 0.5 per cent. solution of phenol, and the emulsion was injected subcutaneously in progressive doses, beginning with 0.2 and 0.4 of the weaker and then of the stronger emulsion and then of the mother suspension, to a total of 3 c.c. of the latter. The course took four or five months, with six day intervals. The cancers in the 14 cases included a rectal carcinoma, sarcomas of bone and stomach, and mammary cancers. In 8 of the cases the cure has been complete for eight years to date, for five in one case, and another patient died from cerebral hemorrhage after three and a half years without recurrence. One patient succumbed early to metastasis in the lung which must have existed at the primary operation. Another gained 50 pounds in weight and felt so well that he refused further injections after the seventh, and the rectal carcinoma recurred in nine months. There was recurrence further in 2 other sarcoma cases, but the recurrences were cured by another operation, so that 90 per cent. of the 14 patients can be regarded as cured. This certainly indicates, he declares, that the system was modified in some way by this biologic immunization, reducing the predisposition to malignant disease when there was no metastasis at the time. The recurrences of the tumors were of a less malig-

nant form. Keysser is privatdozent for surgery at the Jena University, and he offers to make the autogenous emulsion if material is sent him, until arrangements can be made for centralizing the work in some cancer research institute. The main drawback to this biologic prophylaxis is the difficulty of getting the patients to return systematically for the injections.

**Remote Results of Cholecystectomy.**—Hinz tabulates the details and the immediate and ultimate results of his operations on the biliary apparatus, grouping the 9 fatal cases, the 41 of chronic gallstone affections, the 39 of acute cholecystitis, and the 9 of acute cholecystitis with stones in both gall-bladder and common bile duct. The postoperative disturbances are generally traceable to cicatricial changes existent at the time of the operation. "Hypochylia and achylia remain as irreparable damage from the gallstone affection in more than half of the cases. They are the more severe the longer the irritation from the gallstones had lasted. All these and still other reasons testify, he says, to the importance of an early operation in every stage of lithiasis.

**Plastic Operations on the Pericardium.**—Impressed by the grave consequences of adhesive pericarditis, especially in children, Klose has been experimenting on surgical means for its relief. In 7 of Heubner's 16 cases the children did not long survive, and 2 others were chronic invalids. The diagnosis is based principally on the symptoms from insufficiency of the thin-walled right auricle. Relief is obtained by releasing the heart from its fixation to the pericardium, and preventing reproduction of the effusion. He has operated in 3 such cases, releasing the heart from the adhesions impeding its movements. In a fourth case the adhesion was so firm that the epicardium had to be detached from the heart over a large area. To prevent reproduction of the effusion, he resected the anterior wall of the pericardium in the man of 30, patching the defect with a fat and fascia flap from the thigh. The patient succumbed two weeks later to pneumonia, but the flap was found well healed in place. No functional disturbance was manifest in five healthy dogs after he had removed the entire pericardium, with care not to injure the phrenic nerves. In 19 other dogs he closed the defect with an autoflap of fat or fascia or peritoneum and omentum. The fat flap seemed to answer the purpose best; it forms a functionally perfect substitute for the pericardium. None of the dogs show any trace of adhesion, and in one that lived two years afterward even necropsy showed no trace of the plastic operation. He adds that his attempts to prevent reproduction of the adhesion by injection of drugs were disastrous; nitrogen or other gas does not prevent the sheets from growing together again. The experiences related justify the attempt to cure this almost inevitably fatal affection by breaking up the adhesions and preventing their otherwise certain reproduction by an autoplasmic operation. He gives two illustrations showing the healing of the fat flap with its six catgut stitches.

**Pseudarthrosis.**—Lorentz gives the roentgen-ray findings in seven war wound cases of pseudarthrosis before and after operative treatment.

### Beiträge zur klinischen Chirurgie, Tübingen

1921, 124, No. 1

- \*Anastomosis for Varicose Veins. E. Hesse and W. Schaack.—p. 1.
- Primary Dermoids in Mesentery. R. Sommer.—p. 84.
- Inflammatory Ileocecal Tumors. K. Bachlechner.—p. 103.
- Genuine Mesenteric Cysts. E. Forster.—p. 116.
- \*Spastic Ileus. Nagel.—p. 139.
- Clinical Picture from Aberrant Pancreas Cells. L. Ritter.—p. 157.
- Importance of Lumbar Puncture with Brain Injuries. J. Bungart.—p. 173.
- Injury of Skull from Explosion of Carbide Lamp. A. Horner.—p. 198.
- Posttraumatic Meningococcus Meningitis. A. Kalb.—p. 211.
- \*Pulmonary Embolism at Amputation of Infected Limb. A. W. Fischer.—p. 222.
- \*Inguinal Operation for Femoral Hernia. A. Leb.—p. 230.
- Ileus from Postoperative Antiperistalsis. H. Eggers.—p. 235.

**Operative Treatment of Varicose Veins.**—Hesse and Schaack conclude from their extensive experience at Petrograd with implanting the saphenous vein in the femoral vein according to Delbet's method (1908) that it is logical and feasible, and conforms to the anatomic and physiologic conditions.



They have applied it in 115 cases, but in 25.6 per cent. the results were disappointing and hence they do not unconditionally recommend the method, especially as the outcome of Madelung's saphenectomy seems to be equally good. They applied this in 20 cases, and the results were excellent on the whole. By carrying the resection high up into the oval fossa the outcome will be even better. They applied Babcock's extraction method in 25 cases, and were satisfied with the outcome. Unfortunately this method cannot be applied when the walls of the vein are friable. Rindfleisch's spiral incision was made in 17 cases in which the varices encircled the entire circumference, and the results were good except that circular callous ulcer sometimes showed but little influence from it. Their study of the subject fills 83 pages with 18 illustrations.

**Spastic Ileus.**—Nagel found the spastic occlusion in the form of a ring, 1 cm. wide, in the lower small intestine in one case; in the other the larger part of both small and large intestines were spastically contracted. Neither patient presented unmistakable signs of ileus, and the pulse did not indicate irritation of the vagus. Necropsy in each case cleared up the diagnosis which even the laparotomy had not settled. He compares 51 cases from the records with these. The total mortality was 20 per cent. in the 36 cases of primary spastic ileus, and 53.3 per cent. in the 15 cases of postoperative spastic ileus cases. The outlook is thus better in the primary cases. The direct cause for the spastic ileus may be of the most diverse nature. A nervous predisposition is the main factor. This should encourage giving atropin and waiting to see its effect when symptoms indicate ileus in a particularly nervous person. In his first case the symptoms were those of appendicitis, and there was nothing to suggest ileus. But this was the only case of the kind in the compilation.

**Pulmonary Embolism at Amputation of an Infected Limb.**—Fischer reports two cases in which the pulmonary embolism occurred the same day as the amputation. He suggests that this might have been prevented by blocking the vein before taking off the dressings, or, better yet, resecting a segment of the vein or simply ligating it. He suggests this as advisable for the wounded before transportation, blocking the main vein from the infected limb.

**Inguinal Operation for Femoral Hernia.**—Leb's illustrations show the simple technic with which he has been much pleased in his eight cases. A curved needle can be passed from the inguinal canal around the base of the hernial sac. The neck is incised and the distal portion left for a living tampon in the region of the oval fossa, the tissues thus escaping with the minimum of injury.

### Monatsschrift f. Geb. u. Gynäkologie, Berlin

October, 1921, 55, No. 6

\*Central Luxation of Head of Femur. A. Mayer.—p. 315.

\*Is Manual Extraction of the Placenta Dangerous? H. Baumm.—p. 322.

\*Endogenous Microbism. R. Salomon.—p. 331.

\*Injury of Uterus in Artificial Dilatation of Cervix. L. Fraenkel.—p. 340.

\*Infarction of Uterus and Adnexa. F. Geppert.—p. 346.

\*Safety Curet. P. Klaar.—p. 349.

**Obstetric Importance of Central Luxation of Head of Femur.**—As the head projects into the pelvis, the pelvis is made correspondingly narrower, and asymmetrical. Mayer's experience, however, has demonstrated that delivery can proceed smoothly and spontaneously at term even with this anomaly. In three cases described, the mechanism differed with each, and the children were large.

**Manual Extraction of the Placenta.**—Baumm cites the mortality after manual extraction of the placenta as reported from seventeen German clinics. The figures range from 1.97 to 13.92 per cent., and certain obstetricians regard this as the most dangerous of all obstetric procedures. Liepmann has declared that he would prefer total hysterectomy to it. The experiences at the Breslau maternity, however, fail to sustain any such unfavorable view. Manual extraction of the placenta was done in 1.2 per cent. of the 20,418 deliveries of the last twenty years, and it was followed by a febrile puerperium in only 34.7 per cent. and only 2.8 per cent. died of the 248 women. As this mortality includes the infected cases and those that had required version, perforation, etc.,

the mortality cannot all be ascribed to the manual extraction of the placenta. Manual extraction is usually reserved to the very last when convinced that the woman must not be allowed to lose another drop of blood. At this stage, she is so weakened and defenceless that the uterus offers a fine culture medium for infectious germs. As Fritsch expresses it, "The woman is not dying because there is sepsis, but sepsis develops because she is dying." The weakening from extensive losses of blood favors the onset of fever. In the total Breslau experiences there were 425 deliveries normal in every respect and nothing done to invite infection, but after exceptionally profuse hemorrhage, following delivery, 67 per cent. developed fever, and 0.7 per cent. died. The practical conclusion is not to wait too late for manual extraction of the placenta. If the woman has already lost more than 500 gm. of blood, then we may anticipate fever, but it is a mistake to attribute it to the manual extraction. The latter should not be attempted when another operation has been done, or there are already signs of infection, or the woman is exsanguinated. Excluding these classes of cases from the Breslau list, shows manual extraction in a remarkably favorable light. No unfavorable influence from it was detectable in the pure and noninfected and the nonexsanguinated cases, and there is no need to fear injury of the uterus from it if properly done. If there is no hemorrhage, he waits for two hours in case of retention of the placenta. Then the Credé procedure is applied, and if this fails, turgidization of the placenta, injecting saline into the placenta, may be tried, or manual extraction.

**Endogenous Microbism.**—Salomon applies this term to the micro-organisms lurking harmlessly in the body, slumbering infection, or latent infection, which a trauma or operation is liable to rouse to full virulence. In 2 of 18 cases studied comprehensively from this point of view, the micro-organisms cultivated from an abscess that developed after an operation were identical with the saprophytes cultivated from the vagina beforehand, when the women were supposedly entirely healthy. This endogenous microbism was evidenced in a woman with latent paratyphoid infection who developed active paratyphoid fever after the trauma of an operation, and died. Sternberg found that the serum of 12 of 20 healthy women examined agglutinated the streptococci or staphylococci vegetating apparently harmlessly in their vaginas. The agglutination occurred up to 1:4,000 in some cases, although there was not the slightest indication of any clinical manifestations from them. There was no agglutination of streptococci or staphylococci found elsewhere than in the vagina. In the vagina the balance between the micro-organisms and the defensive forces may be upset by some trauma, the defensive forces weakening and allowing the micro-organisms to get the upper hand. Parenteral protein therapy may reinforce the defensive forces, and thus maintain the balance between them and the endogenous vaginal micro-organisms. Or other micro-organisms might be introduced into the vagina which would overwhelm and crowd out the potentially virulent ones, or the vagina might be disinfected, an autogenous vaccine for the saprophytes in the vagina might be used, or cell function promoted with radiotherapy.

**Injury of Anterior Uterus Wall in Artificial Dilatation of the Cervix.**—Fraenkel reports three cases in which the cervix was ruptured as an attempt was made to dilate it with fingers or tent by an experienced gynecologist under favorable conditions. He has been converted by these experiences to anterior hysterectomy as preferable to blind and unphysiologic procedures with bougie and tent.

**Infarction of Uterus and Adnexa.**—Geppert comments on the rarity of infarction of the female genital organs, and reports a case in a young woman. It had occurred in consequence of criminal abortion by injection of lysol into the uterus.

**Safety Curet.**—The curet of which Klaar gives an illustrated description is graduated in millimeters so that it can be introduced to the exact depth desired. An elliptic metal plate slides on the stem of the curet and can be adjusted at any desired point to prevent the curet from entering any farther into the uterus than to the desired depth.



**Münchener medizinische Wochenschrift, Munich**

Oct. 14, 1921, 68, No. 41

- Hemorrhagic Erosions of the Rectum. K. Westphal.—p. 1307.  
Hints on Examination of Thorax. H. v. Hoesslin.—p. 1312.  
\*Endosecretory Problems in Gynecology. J. Halban.—p. 1314.  
Effect of Closure of Carotid Arteries on Heterotopic Heart Impulse. B. Kisch.—p. 1317.  
Clinical Observations on the Precipitation Velocity of Erythrocytes in Citrated Blood. F. Bennighof.—p. 1319.  
Method for Gaging Deep Roentgen-Ray Dosage. Mühlmann.—p. 1320.  
Roentgen-Ray Treatment of Tumors. A. Kohler.—p. 1322.  
Angioneurotic Syndrome with Acute Albuminuria Following Use of Neo-Arsphenamin. Zinsser.—p. 1322.  
Blood Transfusion in Hemophilia. F. Herzog.—p. 1323.  
Diabetes Mellitus and Hemorrhagic Diathesis. H. Gorke.—p. 1324.  
Effect of Alcohol Treatment Hampers Gasserectomy. Koch.—p. 1324.  
Operative Treatment of Scoliosis. H. v. Baeyer.—p. 1325.  
Does Schizophrenia Develop as the Result of Recessive Hereditary Characters? F. Lenz.—p. 1325.  
Köhler's Disease in Metatarsophalangeal Joint. J. Kirner.—p. 1326.  
Roentgen-Ray Treatment of Scleroderma. J. Donath.—p. 1326.

**Endosecretory Problems in Gynecology.**—Halban recalls that progress in the knowledge of the endocrine glands has overthrown many of our views in the field of gynecology. This is true not only of physiology but also of pathologic conditions. For example, the ovary has long been recognized as the center of the genital apparatus of the female, since after ovariectomy, as well as after the natural cessation of ovarian function during the climacteric, an involution or atrophy of the whole genital system occurs. It was formerly supposed that trophic nerves extended from the ovary to the other sexual organs, and that the atrophy that followed ovariectomy was due to the division of these nerves. But of late it has been shown that if the ovaries are removed and subsequently reimplanted elsewhere, atrophy does not occur, although the nerves have been divided in exactly the same manner. This confirms that the trophic influence of the ovary must be due to chemical substances, and that the ovary is a gland of internal secretion. Halban has shown by experiments on apes that in these animals menstruation, which occurs every four weeks, as in the woman, is preserved if the extirpated ovaries are reimplanted in the body either peritoneally or subcutaneously. When the transplanted ovaries were later removed, menstruation ceased.

**Zeitschrift für Tuberkulose, Leipzig**

October, 1921, 35, No. 2

- \*Immune Pathology and Vaccine Treatment of Tuberculosis. H. Hollaender.—p. 81.  
\*Roentgen Rays and Pulmonary Tuberculosis. F. Jessen.—p. 95.  
Friedmann's Remedy for Tuberculosis. C. Moewes.—p. 103.  
The Pathologic Anatomy of Pulmonary Tuberculosis in Relation to Chemotherapy. A. Winkler.—p. 106.

**Vaccine Therapy of Tuberculosis.**—Hollaender explains the ten links in the chain that is formed by immune-pathology and immune-therapy. Phagocytosis is the indispensable first link. Treatment must aim to imitate and follow the natural processes of autoimmunization. His conception of this is that the tubercle bacilli ensconced in the body or injected in a vaccine are incorporated by the phagocytes. The phagocytes produce agglutinin; this dissolves the waxy shell of the bacillus and releases the bacillus protein, the endotoxin. The fourth link in the chain is the ectodermotropic properties of the endotoxin which insure that it becomes anchored in the cells of the ectoderm. These cells produce lysins under the influence of the endotoxin, which is the fifth link in the chain, as these lysins have a proteolytic action. This transforms the endotoxin into the soluble exotoxin (albumoses, peptone, nucleo-albumoses). The exotoxin is mesenchymatropic, and this anchors it to the body cells derived from the mesenchyma. These latter cells produce under the influence of the exotoxin a precipitin. This precipitin causes the disintegration of the exotoxin, breaking it up into its elements, polypeptids, amino-acids and purin bases, some of which are insoluble. The combination of them all forms the anaphylatoxin, the ninth link. The anaphylatoxin is not retained but is eliminated, this tenth link completing the chain. Systematic subcutaneous injections of the vaccine start and maintain the chain at work.

**The Roentgen Rays in Diagnosis and Treatment of Pulmonary Tuberculosis.**—Jessen writes from Davos to extol the

advantages of roentgen examination to detect the finer changes in the tuberculous lung from time to time. In treatment, the roentgen rays seem theoretically indicated, but the clinical results have not been such as to encourage radiotherapy as a routine procedure. The danger is that the different parts of the tuberculous process might respond differently, a tendency to healing in some parts being accompanied by aggravation in other parts.

**Zeitschrift für Urologie, Leipzig**

1921, 15, No. 3

- Rupture of Male Urethra Intra Coitum. Flechtenmacher.—p. 73.  
Aspirator for Secretion in Urethra. W. Richter.—p. 74.  
Paraurethral Phlegmons. E. Brack.—p. 76.  
\*Diverticulum in Bladder. K. Keydel.—p. 79.  
Malakoplakia in Bladder: Two Cases. R. Ramcke.—p. 92.

**Symptoms from a Diverticulum of the Bladder.**—Keydel analyzes a number of instructive cases of different types. He regards a diverticulum as a more serious condition than enlargement of the prostate, as a rule, and hence advises operating on the diverticulum rather than on the prostate when the two are associated. It may be difficult to decide to which to ascribe the symptoms observed. The condition is not of acute development, and the toxic action should be combated before attempting any intervention. The outcome, the survival, may depend on whether the patient has recuperated or not from his toxic debility. With a diverticulum, the symptoms vary from time to time, and the relations between the diverticulum and the adjoining organs modify the symptoms, as also the congestion and hyperemia in the diverticulum walls. The imperfectly evacuated bladder presses on the rectum, and tenesmus is entailed. There may be persisting painful sensations and smarting in the bladder and lower abdomen, pains in the kidney, and irritation in the peritoneum.

1921, 15, No. 4

- \*Origin of Tube-Casts. C. Posner.—p. 113.  
Causes of Atony of Ureter. G. Woskressensky.—p. 120.  
Experimental and Clinical Research on Pyelography. Barreau.—p. 134.  
Influence on the Prostate of Roentgen Exposure of Testicles. A. v. Lichtenberg.—p. 144.  
Nephropexy Cures Pyelonephritis in Solitary Wandering Kidney with Miliary Abscesses. B. v. Rihmer.—p. 146.

**Origin of Tube Casts.**—Posner studied the viscosity of urine flowing through glass capillary tubes, and from this and other data concludes that the formation of tube casts is a chemical-colloid process analogous to formation of concretions. It is favored by extra viscosity of the urine, and measures to render the urine more fluid may aid in warding off tube casts. The acidity of the urine also increases the surface tension, and hence alkalies that reduce the acidity are useful in warding off tube casts with acid urine. With contracted kidney, on the other hand, the viscosity is not high, and hence the surface tension is not modified by giving alkalies. In any event they should not be given in large doses, or the production of edema may be favored. The effect of alkaline mineral waters may be of a chemical colloid nature, and combine a diuretic with a surface tension modifying influence. The favorable action of a salt-poor diet may be partly explained on this basis.

1921, 15, No. 5

- \*Internal Secretion and Sexuality. Waldeyer et al.—p. 153.

**Internal Secretion and Sexuality.**—This entire number is devoted to the detailed report of the joint session of the Berlin Medical Society for Sexual Research and Eugenics and the Berlin Urologic Society. Waldeyer described the anatomy of the eight true endocrine glands; of the six with both internal and external secretion; the three that are suspected of an internal secretion but it has not yet been demonstrated (mammary and salivary glands) and the non-glandular bodies to which an internal secretion is credited (spleen, chorioid plexus, myometrial cells, pyrrhol cells, fat bodies, placenta and fetus). Richter pointed out that castration of males entails an infantile, asexual further development. Also that there are genital centers in the brain, especially on the floor of the third ventricle. The internal secretion is an important factor in the psychosexual sphere, but is not the only one. The endocrine hormones influence



the brain, but the brain has also an important influence on internal secretion. In Steinach's experimental modification of the sexual characters, he added, only the sexual characters were modified; the sex itself was never altered. Richter commented on his microscopic findings in the testicles of pseudohermaphrodites, the homosexual, dwarfs, etc., remarking in conclusion that there is no conclusive evidence to date that the interstitial cells of the testicles are important from the morphologic standpoint.

**Testicle Transplants.**—Lichtenstern has now a record of eighteen cases, and in all of them the implanted testicle healed in place and has apparently answered the desired purpose for years to date. In four instances he used normal testicles, and in the others undescended testicles. In eight of the cases the operation was done to cure pure homosexual impulses, and the cure was complete. This success corroborates Steinach's discovery of female elements in the sexual glands of the homosexual persons examined. In treatment of eunuchoidism, transplantation of a testicle from the father seems the preferable technic. Mühsam's experience with three cases confirms that the implanted testicle continues its internal secretion indefinitely. Other communications were on the relation of the prostate to the sexual function, on the chemistry of the internal secretions, and on organotherapy in gynecology, etc.

**Organotherapy in Gynecology.**—Kalledey explained that dysmenorrhea is accompanied by high intracranial pressure and hyperemia in the mucous membrane of the mouth, nose and throat, along with the pains in the lower abdomen and the extreme lassitude. An intravenous injection of ovarian extract banishes all the symptoms in almost every case. Amenorrhea, dysmenorrhea and functional menorrhagia are all the result of ovarian functional insufficiency, and all are benefited by administration of the ovarian hormone, preferably by the vein. He advocates a two weeks' course of injections, every one or two days, suspending for two weeks and then resuming until menstruation is normal. Ovarian treatment plus reclining and forced feeding will usually cure even the most chronic cases of chlorosis. Ovarian treatment is also indicated for the disturbances of the menopause. With metrorrhagia, the correlation of the endocrine glands must be borne in mind, and the extracts of the antagonists utilized, the thyroid, the mammary gland or the pituitary. The organotherapy aims to restore physiologic correlation; this may require its continued administration, or a small amount of the hormone may stimulate the whole endocrine system to harmonious functioning.

### Norsk Magazin for Lægevidenskaben, Christiania

December, 1921, 82, No. 12

\*Rheumatismal Myocarditis. P. F. Holst.—p. 833.

\*Pathologic Condition in Patella. Sinding-Larsen.—p. 856.

\*Acute Dilatation of the Stomach. S. F. Holst.—p. 859.

\*Causes of Heart Disease. T. Ormhaug.—p. 868.

\*Dyspnea. N. B. Koppang.—p. 876.

**Rheumatismal Myocarditis.**—Holst comments on the tendency to become chronic of myocarditis developing in connection with acute rheumatism. Its special anatomic features throw light on myocarditis in general and on the pathogenesis of acute febrile rheumatism. The rheumatismal submiliary nodules found with this myocarditis are never encountered unless there has been preceding febrile rheumatism. No micro-organisms have ever been found in these nodules, and the nodules were found in only four of seven hearts in this category, but in two others there were findings that might have been traces of old nodules. He suggests the possibility that these nodules may be specific to acute rheumatism like the tubercle in tuberculosis. Also that they may be nests where the virus of acute rheumatism hibernates, as it were, and brings on a new attack when roused. The disease seems to be a chronic infection rather than a recurring acute disease, the attacks merely the flaring up of the latent process. Treatment, therefore, should be managed more as we manage syphilis, giving periodical courses of the specific salicylic medication without waiting for an acute attack to develop. Rheumatismal myocarditis may develop without any clinical

manifestations, but there are usually symptoms of pancarditis. Dilatation may soon follow, especially in the young, and it may vary from day to day. Symptoms of mitral insufficiency, enlargement of the liver and tachycardia were the rule, but there was no marked arrhythmia, possibly because the patients were not examined often enough or with methods of precision. His verdict on digitalis in rheumatismal myocarditis is rather unfavorable.

**Hitherto Undescribed Pathologic Condition in the Patella.**—Two otherwise healthy girls of 10 and 11 complained of pain in one knee after jumping or dancing lessons. The roentgen shadows were abnormal, suggesting periostitis from overstrain, and the tibia in one of the girls showed Schlatter's disease. Although the pain was felt only in one knee, roentgenoscopy showed a similar abnormal condition in both patellae. One child was ordered to keep still, and the other had a plaster cast applied for six weeks. By the end of six months, roentgenoscopy showed conditions apparently quite normal. Roentgenograms of both cases are reproduced.

**Acute Dilatation of the Stomach with Arteriomesenteric Occlusion.**—In one of the three fatal cases described, the patient was a newly born babe; the others were men much debilitated by suppurative processes.

**Causes of Heart Disease.**—Ormhaug found a history of acute articular rheumatism in 44.1 per cent. of 288 men and in 57.6 per cent. of 289 women, all with the clinical picture of heart disease. Also in 20.4 per cent. of 250 male and 31.2 per cent. of 237 female cadavers after death from heart disease, and in 32.7 per cent. of 150 male and 42.7 per cent. of 164 female cadavers after death from known valvular defect. He tabulates the total 1,064 classified by the 25 different diseases confirmed by necropsy. Syphilis in the three groups seemed responsible for 12.2 per cent. (men) and 4.2 per cent. (women); 17.6 and 7.6 per cent., and 20.7 and 8.5 per cent. The mitral valve was involved in 210; the tricuspid in 62, and the pulmonary in 2 in the 314 valvular defect cases.

**Dyspnea.**—Koppang explains how the different types of dyspnea give the clue to treatment, the dyspnea being dependent not only on the metabolism in the special respiration center but on the metabolism in other more remote organs.

### Ugeskrift for Læger, Copenhagen

Nov. 10, 1921, 83, No. 45.

\*The Cause of the Exudative Diathesis. S. Monrad.—p. 1461.

**The Exudative Diathesis.**—Monrad prefers to call it the exudative-lymphatic diathesis. He encountered it in 4.5 per cent. of 2,772 hospital patients, and in 6.9 per cent. of 2,934 private patients, 1917-1920. Only 14 of the total 327 children were over 10, confirming that the children outgrow the tendency. It is familial, hereditary and congenital. The skin and mucosa symptoms disappear first; the asthma and hypertrophy of the tonsils may persist for years. The prognosis is good except for the danger of sudden death in the eczema stage and the so-called thymic death. He had a case of the latter, a male infant of 18 months dying suddenly a day or two after herniotomy, and necropsy disclosing nothing abnormal beyond the hyperplasia of the thymus, spleen and intestinal follicles. When an endemic acute infection develops in the hospital, the children of this exudative type are sure to contract it. His research and extensive experience indicate that excluding animal fat from the food hastens the throwing off of the condition, and the children thrive and grow robust. He therefore incriminates animal fat as the factor responsible for the exudative-lymphatic diathesis. The animal fat in some seems to behave like an actual poison. Treatment therefore should aim to exclude cream, butter and animal fat of all kinds, including cod liver oil, while vegetable fats can be freely allowed. The animal fats must be avoided for six months even after apparent recovery, or the symptoms may return. Under the dietetic treatment, adenoid vegetations are liable to subside with the other symptoms of the diathesis. In 68 of the children, operations on adenoids (55) and on the tonsils (13) were not followed by the least improvement. Only when the dietetic treatment was kept up perseveringly was benefit realized.



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## THE THERAPEUTIC EFFECT OF VENESECTION

WITH PARTICULAR REFERENCE TO LOBAR  
PNEUMONIA \*

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AND

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CHICAGO

Perhaps no therapeutic measure of our older practice has fallen into such disrepute and has been so completely discarded as phlebotomy. At one time the therapeutic sheet anchor in every ailment, it is today regarded, as Hoskins<sup>1</sup> in a recent paper states, as one of those methods that "placed the history of therapeutics in the humorous literature of the ages." Even in the restricted field of indications still assigned the measure (cardiac incompetence in arteriosclerosis, pneumonia and organic heart disease; cerebral hemorrhage; sunstroke; eclampsia) a general timidity is apparent and phlebotomy is used only as a final resort. This general disfavor had its origin in the utterly unwarranted and mischievous use of bloodletting for every known ill with which the medical profession of a century ago had to deal. The reaction to the abuse led to a virtually complete abandonment of the measure by the general practitioner.

### CHANGES FOLLOWING VENESECTION

In the restricted use of today, two underlying purposes can be recognized: the one, to relieve mechanically a cardiac dilatation; the other, to deplete the circulation of a certain amount of presumably toxic material. Recent investigation, however, has disclosed certain alterations following venesection which may account for the therapeutic effects not infrequently noted by capable clinicians of the older school as well as by more recent observers. Among these the changes in the coagulation balance and in the leukocytes are, of course, well known; Musser<sup>2</sup> has reviewed in particular the reactive polymorphonuclear leukocytosis, and concludes that it is similar in character to that brought about by bacterial invasion. Drinker<sup>3</sup> regards it as a response of the organism to the foreign proteins swept into the circulation from the tissue fluids.

Other alterations include the increase in the nitrogen excretion, an observation repeatedly confirmed. Tay-

lor and Lewis<sup>4</sup> believe that "the increased nonprotein nitrogen of the blood is the result of an active process on the part of the tissues due either to a setting free of stored amino-acids or to amino-acids derived from the hydrolysis of tissue protein." Lewy and Mendl,<sup>5</sup> in studying this phase of the reaction, reached the conclusion that in normal individuals the hydremia that follows bleeding is associated with a diminution of the noncolloidal nitrogen of the blood, but in febrile individuals a mobilization of tissue (retention) nitrogen is induced which causes an increase in the noncolloidal nitrogen of the blood.

The lipid balance of the blood is altered after bleeding. Milne found that after severe hemorrhage in rabbits a lipemia would result, the cholesterol increasing as well as the total fats. Ellermann and Meulengracht<sup>6</sup> confirmed this observation, and Feigl<sup>7</sup> has recently studied a number of patients after bleeding (operative, ulcer, etc.) in which the increase in the total fats in the blood amounted to more than ten times the normal, the lecithin and cholesterol increasing four or five times. These alterations vary with the amount and rapidity of the bleeding.

The liver metabolism seems altered (mobilization of fibrinogen); its expression is found in the hyperglycemia that regularly follows bleeding.

Hahn and Langer found that repeated bleeding was followed by a rapid increase in the agglutinin curve of immunized animals. Landau and Klinger could not confirm these results, but more recently Jotten and Trommsdorff have published experimental protocols that confirm Hahn and Langer. Jotten finds that if venesection is made when the agglutinin curve has reached its normal maximum, no increase takes place; but if the animals are bled when the antibody curve is not at its maximum, an increase can be determined after bleeding. He found similar effects with non-specific injections (milk, vaccine virus, etc.).

There is a diminution in the alkali reserve following bleeding.

Hoskins, Rowley and Rosser, as well as MacGuigan and Atkinson, have called attention to the splanchnic stimulation which occurs after hemorrhage.

As evidence of the physical alterations in the serum we have recently found that the Kottmann<sup>8</sup> reaction becomes positive after bleeding, that the serum anti-ferment is in most instances diminished, and that the sedimentation time of the red corpuscles in the plasma

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1. Hoskins, R. G.: Some Current Trends in Endocrinology, J. A. M. A. **77**:1459 (Nov. 5) 1921.

2. Musser, J. H., Jr.: Am. J. M. Sc. **162**:40 (July) 1921.

3. Drinker: Diseases of Blood, Oxford Medicine **2**:563, 1920.

4. Taylor, A. E., and Lewis, H. B.: J. Biol. Chem. **22**:71, 1915.

5. Lewy, J., and Mendl, R.: Deutsch. Arch. f. klin. Med. **136**, Nos. 1 and 2, 1921.

6. Ellermann, V., and Meulengracht, E.: Egesk. f. Læger **79**:1287 (Aug. 2) 1917.

7. Feigl, J.: Biochem. Ztschr. **115**:63, 1921.

8. Kottmann, K.: Schweiz. med. Wchnschr. **50**:644, 1920.



is altered. The typical effect on the antiferment curve is shown in the accompanying chart.

The alterations enumerated, particularly the leukocytosis, the coagulation changes, the hyperglycemia, the mobilization of antibodies, and the alteration in the dispersion of the serum colloids (French investigators use the term "colloidoclasia" for the group of reactions found in the serum), all indicate that we must consider bleeding as a form of protein therapy. Whether the suddenly produced hydremia, whether the residual (tissue) nitrogen that is flooded out into the bloodstream, whether the destruction of relatively labile cells (liver cells, splenic endothelium, etc.) or whether the colloidal rearrangement in the plasma itself is to be considered the primary cause in this form of protein therapy is, of course, undetermined. Perhaps several or all of these and other factors are involved.

#### FERMENT-ANTIFERMENT BALANCE

We wish at this time to call attention to another factor that seems to us of importance in the explanation

of the therapeutic effect of venesection in lobar pneumonia. A number of years ago it was pointed out<sup>9</sup> that recovery in lobar pneumonia must involve a dual detoxication: the one a digestive phenomenon in which the lung exudate undergoes rapid lysis, the other an antibacterial mechanism usually coincident or actually dependent on the digestive acceleration. This concept has since been developed by Petersen and Short,<sup>10</sup> Weiss,<sup>11</sup> Blake and Cecil,<sup>12</sup> Thomas and Parker,<sup>13</sup> and particularly by Lord and Nye.<sup>14</sup> The latter have studied in detail the ferment-antiferment balance that exists in the pneumonic exudate and have shown the inhibiting effect of the (plasma) exudate on the autolysis.

Briefly, it may be stated that in the exudate of the consolidated lung a balance exists between the amount of enzyme present (protease and ereptase from disintegrating polymorphonuclear leukocytes) and the antiferment of the plasma and tissue exudate. Early in the disease the leukocytes at the focus are living and have not shed their enzyme content. As they die, the enzymes diffuse into the surrounding mediums. If at any time the enzyme concentration overbalances the inhibition of the tissue fluids, active proteolysis will commence and the crisis ensue. If in place of this increase in the enzyme concentration we can diminish the amount of the antiferment, the same augmentation of proteolysis will be brought about. This may take

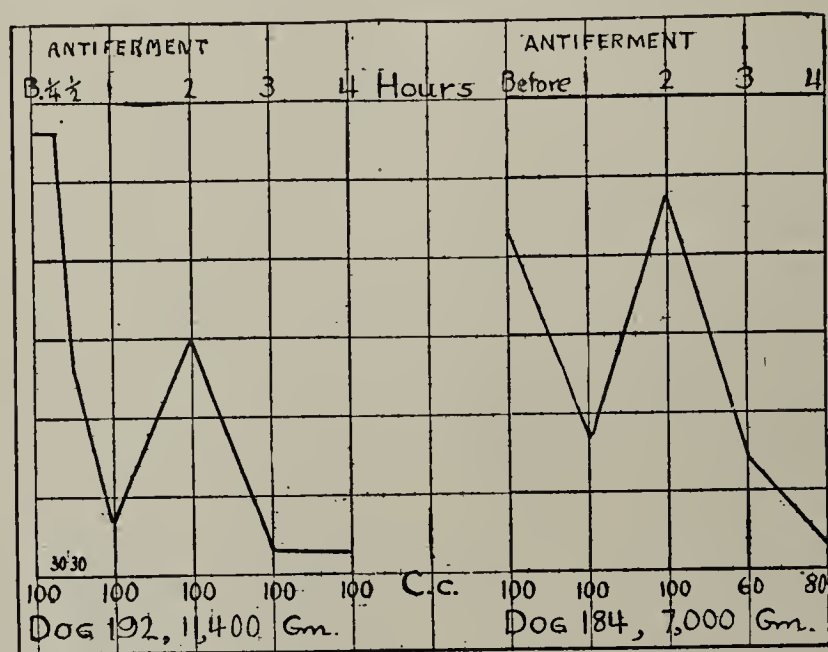
place with increasing acidity of the exudate, or actually diminishing the amount of plasma present in the exudate.

It is at once apparent that venesection may have a direct influence on this balance. The depletion of the fluids in the vascular bed results in a prompt compensation by means of fluids drawn from the tissue spaces. In a pathologic exudate, even though largely isolated from the circulation as the pneumonic focus is, the direction of the current would also be from the exudate to the circulation. The amount of antienzyme would therefore be somewhat diminished. Again, it is to be remembered that the serum after bleeding has less antiferment than normally, i. e., the fluids reaching the focus would have less inhibiting substance than before. So, too, diminution in alkali reserve would tend to increase the acidity of the exudate. We have, then, at least three alterations following phlebotomy that seem of importance in directly influencing the ferment-antiferment balance of the exudate in the direction of acceleration of proteolysis.

In addition to these alterations which have a special importance in lobar pneumonia, we must keep in mind the general plasma-activation, which seems definitely associated with hemorrhage, the therapeutic basis of which we have previously discussed.<sup>15</sup>

We believe it but simple justice to many able clinicians of an older period to stress the fact that venesection at times induced striking therapeutic benefits, that a definite and logical basis exists for the therapeutic effects so achieved, and that even today its proper evaluation and application would

in many instances afford clinical results when our more conservative methods fail.



Effect of repeated bleeding on the antiferment titer of serum of dogs.

15. Petersen, W. F.: Biologic Therapy, XX, The Nonspecific Reaction, J. A. M. A. 76:312 (Jan. 29) 1921.

**Patients Make Furniture and Grow Crops.**—More than \$300 worth of office furniture has been restored for the government by trainees in the crafts shops at St. Elizabeth's Hospital, Washington, D. C., during the last few months. The furniture consisted principally of office desks, tables and hatracks, the substitutes being made in the shops out of material furnished by the government for training former service men now patients at the hospital. As the new pieces are made, the stock furniture is returned for use in other government departments. The trainees also furnished to the hospital last summer more than \$300 worth of truck produce, such as tomatoes, melons, corn, radishes and potatoes. Out of the 800 or more former service men being treated at St. Elizabeth's, about 325 are taking vocational training. Some of the men take only one or two light training courses each day, but more than a hundred of them have advanced to a status at which their mental or nervous condition permits them to spend most of the day in training. Carpentry, auto mechanics, agriculture and poultry raising, concrete setting, weaving, draftsmanship and commercial courses are taught at the hospital.—Field Letter 21, U. S. Veterans' Bureau, Dec. 31, 1921.

9. Jobling, Petersen and Eggstein: J. Exper. Med. 22:568, 1915.

10. Petersen, W. F., and Short, C. A.: J. Infec. Dis. 22:147 (Feb.) 1918.

11. Weiss, C.: Biochemical Studies of Pneumonic Exudates, Arch. Int. Med. 23:395 (March) 1919.

12. Blake, F. G., and Cecil, R. L.: J. Exper. Med. 31:403, 445, 499, 1920.

13. Thomas, H. M., Jr., and Parker, F., Jr.: Results of Antemortem Lung Punctures in Lobar Pneumonia, Their Bearing on the Mechanism of Crisis, Arch. Int. Med. 26:125 (July) 1920.

14. Lord, F. T., and Nye, R. N.: J. Exper. Med. 34:201 (Aug.) 1921.



WHEN TO OPERATE AND WHEN TO  
USE RADIUM ON FIBROIDS OF  
THE UTERUS\*

GEORGE GELLHORN, M.D.

ST. LOUIS

The time has passed when we required extensive statistics and demonstrations of cases to be convinced of the therapeutic value of radium and roentgen rays in fibroids of the uterus. That fact has definitely been established. We know now that radiotherapy and surgery are competing methods in the treatment of uterine fibroids, and it merely remains for us to determine which of these two methods to employ in a given case. Such a determination is obviously of value not only to the specialist who is to administer the treatment, but also to the general practitioner, the family physician, who is usually the first to be consulted by the patient and who wishes to give intelligent advice in conformity with all the latest advances in our science.

## RADIOTHERAPY

In a general way it may be said that the principal field for radiotherapy is in women of 40 or over who have fibroids which do not extend above the umbilicus. The more uniform the enlargement of the uterus, the better is the case suited for this treatment. In other words, the interstitial variety of fibroids of the size mentioned is the ideal one for radiotherapy; but those interstitial fibroids which tend to become submucous or subserous give equally good results. This group, it must be remembered, constitutes proportionally the largest number of cases that come under our observation.

In the second class of patients to be subjected to radiotherapy are the women who are designated as poor surgical risks. These are the patients with marked secondary anemia—and as profuse and protracted menstrual hemorrhages are the foremost symptoms of fibroids, this class is rather large—the patients with cardiac and renal disease, patients with tuberculosis and other respiratory ailments, patients with high blood pressure, and, finally, excessively stout women.

In the third category of patients—fortunately only a small one—in whom radiotherapy is indicated, are those who are opposed to any form of surgical treatment.

Finally, radiotherapy is indicated in women above the age of 40 who have symptomless fibroids. We would, of course, not suggest an operation in these cases, but we may easily remove the tumors by radiotherapy before they give rise to symptoms.

What is accomplished in all these cases by radiotherapy? To begin with, the predominant symptom of hemorrhage is checked in almost all instances. To be more precise, the latest and most extensive statistics teach us that hemorrhage was relieved in 98.4 per cent., and I shall speak later of measures to eliminate even the small remaining 1.6 per cent. of failures. The second effect of radiotherapy is the shrinkage of the tumors. The large statistics by Gauss and Friedrich, which have just been quoted, prove that shrinkage or even complete disappearance of the tumors may be anticipated in from 70 to 80 per cent.

The results accomplished by radiotherapy naturally lead us to inquire how these effects are brought about. The generally accepted view is that radium and roentgen rays affect the ovaries, and by destroying the graafian follicles produce a sort of bloodless castration. The cessation of the hemorrhages, then, is an artificial menopause, and the shrinkage of the tumors corresponds to an age involution. This is undoubtedly true, and most writers maintain that there is no specific effect from either roentgen rays or radium on the cells of the fibroids; if there is any effect from radium different from that of roentgen rays, it is merely a burn which destroys the mucosa but not the muscular and fibrous elements of the uterus.

In contradistinction to this view I hold that, in addition to the effect of radiotherapy by way of the ovaries, there is also a direct and specific influence of actinic rays, in particular the radium. As an illustration, Cases 1 and 2 are contrasted:

CASE 1.—Mrs. H., aged 64, was subjected, thirty or more years ago, to the then popular surgical castration of her normal ovaries as the treatment of her fibroids. I do not know how large the fibroids were at that time, but she still has in her pelvis a mass composed of multiple fibroids almost as large as a man's head.

CASE 2.—Mrs. D., aged 48 years, whose fibroid tumor reached almost to the umbilicus, received, Aug. 19, 1921, an intra-uterine treatment of 1,200 mg. hours of radium, and in addition two series of roentgen-ray treatments. September 17, exactly four weeks after the first treatment, there was not even the slightest vestige of a tumor present, and the uterus presented a perfectly normal appearance in every respect. In the first case, the hemorrhage ceased and the tumor probably decreased somewhat in size in the course of thirty years. In the second case, the tumor disappeared altogether in four short weeks. Does this not indicate some specific effect of the radium and roentgen rays?

In order to insure success and to eliminate failures, the following points must be taken into consideration:

1. *The Proper Selection of Cases.*—This refers to the categories of cases in which this treatment is indicated. If there should be a doubt as to the case belonging to the categories mentioned, or if there should be any question of the case being a fibroid at all, radiotherapy may be either inefficient or even harmful. It is wrong, therefore, says Reifferscheid, for the practitioner to refer gynecologic cases directly to the radiologist for treatment. The gynecologist, instead, should first be consulted so as to decide whether or not the case is suitable for radiotherapy.

2. *Mode of Application.*—Of the two methods of radiotherapy, radium is superior to roentgen-ray treatment. It should be inserted within the uterine cavity and should remain there, on an average, a length of time which would be equal to 1,200 mg. hours. Hardly ever is more than one treatment necessary. The technical details of the mode of application may well be omitted in this paper, which aims only at discussing general principles.

3. *Combination of Radium and Roentgen Rays.*—While at the present state of the apparatus, roentgen rays yield neither as prompt nor as certain results as radium, yet, a few series of roentgen-ray treatments following the radium application may serve to make assurance doubly sure.

4. *Time of Radium Treatment.*—It has been found that the most propitious time for applying radium is soon after a menstruation. The probability is then

\* Read before the Association of Surgeons of St. Louis, Oct. 19, 1921.



much greater that the next menstruation will fail to appear. If, on the other hand, radiotherapy is administered in the second half of the intermenstrual epoch, another menorrhagia is more likely to occur.

The advantages of radiotherapy are in brief:

1. *Clinical Cures*.—These are obtained in what probably constitutes more than 60 per cent. of all cases of fibroids coming under our care.

2. *The Element of Safety*.—In the hands of the expert, this method has no mortality, whereas after operations there is, even in the hands of excellent surgeons, an average mortality of from 3 to 5 per cent.

3. *Morbidity*.—There is an insignificant morbidity after radiotherapy which is steadily growing less as the result of improved technic. At any rate, the patients are spared the mental and physical suffering that any major operation entails.

4. *The Economic Aspect*.—Radium treatment is not inexpensive; but as the patients hardly ever remain in the hospital more than two or three days, the expenses for hospital, nurses and dressings are saved, so that the total expense connected with radium treatment is considerably below that of operative treatment. Then, too, the patients are not kept away from their occupation for any length of time, and, finally, the overcrowded condition of our hospitals is relieved.

#### SURGICAL TREATMENT

The field for surgery in the treatment of fibroids is fairly well defined. All tumors extending above the umbilicus and, likewise, all large pedunculated, subserous or submucous fibroids should be operated on, for in these three classes radiotherapy is likely to produce a necrosis of the tumors. Cervical fibroids are equally unsuited for radiotherapy, and should be removed surgically. The same is true of suppurating, necrotic or gangrenous tumors and those which are undergoing cystic or calcareous degeneration. While the frequency of such secondary changes in fibroids is not very great, they constitute an important group which must be reserved for surgical intervention.

The age incidence in fibroids is a decisive indication for operation. This means that, as a rule, women under 40 should be operated on rather than irradiated. The younger the patient, the more clearly is operation advisable. In such individuals, the preservation of menstruation and the possibility of restoring fertility must be borne in mind, and an attempt should be made to enucleate the tumors and leave the uterus behind.

I had an interesting case of this kind only recently:

CASE 3.—A woman, aged 31, consulted me in regard to her sterility. A surgeon had proposed hysterectomy to her because of multiple fibroids, which enlarged the uterus to about twice the size of a man's fist. I promised her that I would try to save the uterus and succeeded in shelling out four interstitial fibroids and one sessile subserous fibroid. Recovery was uneventful; the patient conceived seven months after the operation, and has since been delivered of a living child.

Even when the uterus cannot be saved and the organ has to be taken out in toto, we may be able to leave the healthy ovaries behind and thus prevent the disturbances of premature menopause which, as is generally known, are most distressing in younger women. There, is, then, in operations in women under 40 no unsexing, which, of course, is unavoidable in radiotherapy.

Fibroids complicated by ovarian tumors or tubal infections are to be subjected to operation.

Finally, an exact diagnosis, not only of an abdominal tumor but, if possible, of the kind of tumor we are dealing with, is necessary. If there is any doubt, operation is preferable to radiotherapy.

#### EITHER RADIOTHERAPY OR OPERATION

Under the two previous headings I have considered the indications for both rival methods as they have been definitely established and accepted by the majority of progressive gynecologists and surgeons. There is yet a third large category in which the indication for one or the other of the two methods is still under discussion, and in which for the time being the personal equation of the attending physician is allowed to play a part. This refers, first of all, to rapidly growing fibroids which for this reason are suspected of sarcomatous degeneration. The frequency of such degeneration varies within considerable limits. Such eminent authorities as Cullen and Lockyer estimate its occurrence as less than 2 per cent. of the cases, while other observers judge it to be as high as 6 per cent. It is quite legitimate to operate on these tumors. On the other hand, it is well known that sarcoma cells are very readily destroyed by radium or roentgen rays, and for this reason he who prefers radiotherapy on account of its greater safety is equally justified, provided he employs in all such suspicious cases at once a very much larger dosage, the so-called sarcoma dose.

Occasionally, fibroids are found associated with a carcinoma of the body of the uterus. What shall be our attitude in such cases? Our inclination will naturally be to perform a panhysterectomy, and this, if I may express a personal opinion, would be my own preference. But if there are contraindications to operation such as asthenia or lesions of other organs, radiotherapy may be administered with equal justification. It is of vital importance to establish the presence of a corpus cancer before treatment is instituted, and this should be done by a preliminary curettage which, indeed, should precede any intra-uterine radium application, even in cases in which there is no suspicion of malignancy. If it is still desired to use radium, the customary dose of 1,200 mg. hours should be increased to 3,000 mg. hours, and the treatment should be repeated within a few weeks.

The last group of cases in which either of the two methods may come in question are those fibroids which, by being incarcerated within the pelvic cavity, encroach heavily on bladder or rectum and interfere seriously with the function of these organs. Our natural inclination again would be to remove the offending tumor as quickly as possible; but there are quite a few very experienced observers—I mention only Doederlein and Reifferscheid—who have noticed a rapid shrinkage from radiotherapy, and for this reason advise making at least an attempt with radium (or roentgen rays), before resorting to operation.

#### CONCLUSION

An outline, such as has been attempted in the preceding pages, has certain drawbacks. It may seem too inflexible, at times too dogmatic. But an outline is just what its name implies—a sketching of broad principles, a résumé of observations and achievements and the lessons derived therefrom. This much is evident, that there is no antagonism between the two methods at our disposal. It is not permissible to divide the advocates of surgery and of radiotherapy into two



hostile camps. With the exception of a limited number of cases, there are well defined fields wherein either one or the other of the two methods gives the better results and hence has to be employed to the exclusion of the other. The man who administers radiotherapy indiscriminately disregards the best interest of his patients as much as the man who adheres exclusively to surgery.

Metropolitan Buliding.

## MYASTHENIA GRAVIS

### A THERAPEUTIC AND CLINICAL STUDY

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Myasthenia gravis, or asthenic bulbar paralysis, is perhaps not so rare a disease as was formerly thought. In 1900, Bramwell and Campbell could find only sixty reported cases. But in 1912, Starr compiled 250, and many cases have been reported since. In addition, it seems, as will be shown from the observations here recorded, that probably mild abortive types of the trouble are not infrequent, and that these ought to be and will eventually be recognized.

The present paper was prepared primarily to call attention to a therapeutic experience in the treatment of myasthenia gravis, and to give evidence of a rather better prognosis than is usually furnished in this disease.

I have noted that when a therapeutic article is presented to neurologists, there occurs a certain sagging of the facial muscles and a look of sorrow that a presumably trained mind should be wasting its energies and perhaps entering on a decline. This reaction might almost be justified in connection with the therapeutics of the disease I am discussing, for it has a natural tendency to remissions, and sometimes a case which seems hopeless will slowly begin to tend toward recovery.

Thus, myasthenia gravis is a disease for which almost any remedy might be made to appear to have some value. As a matter of fact, however, no one who has written on the subject has claimed that he has found anything which does more than appear sometimes to help, and the prognosis is generally stated to be very grave. Starr found that death occurred within six months in 45 per cent of cases compiled by him. Oppenheim states that twenty-six out of thirty-eight cases were fatal. Hun found that among 114 cases, fifty patients died, seven recovered and fifty-seven improved.

My observations cover a period of more than twenty-five years. Some of the patients have died from natural causes or other diseases. It is difficult, therefore, to present my experience in statistical form. However, I can say in general that none of my patients died of the disease while under my observation, and they were under such observation for from one to seventeen years; also that nine of the fourteen lived on for from two to seventeen years.

#### ABSTRACT OF CASES

The course of the disease in my cases can be best shown in the following abbreviated records. The term

"duration" in the records means the period under observation and not necessarily the duration of the disease, or of the patient's life.

CASE 1.—J. W. S., a man, aged 54; 1892-1897; duration, five years; disease began, March, 1892; patient was well and at work, January, 1893; slight return, November, 1894; nearly well, January, 1895; pernicious anemia, January, 1896; died of pernicious anemia, September, 1897, at the time practically recovered from myasthenia gravis.

CASE 2.—H. S. B., a woman, aged 26; 1905-1906; duration, one year; disease began, January, 1905; first seen by me, March, 1906; improved, December, 1906.

CASE 3.—J. J. B., a man, aged 35; 1909-1910; duration, one year; seen by me, January, 1909; about the same, April, 1910.

CASE 4.—R. J. D., a man, aged 48; 1904-1911; duration, seven years; first attack, 1904; second attack, 1907; seen by me, April, 1909; nearly well, January, 1910; continued well as regards myasthenia gravis. He died of cancer in February, 1911.

CASE 5.—J. H. V., a man, aged 65; 1907-1920; duration, thirteen years; first attack, November, 1907; second attack, November, 1910; wrote that he was well, 1912. Died, aged 75, 1920. He did not have myasthenia gravis at time of death.

CASE 6.—A. W. K., a woman, aged 53; 1903-1907; duration, four years; first attack, 1903; second attack, 1905; seen, 1906; greatly improved, January, 1907.

CASE 7.—C. K., a woman, aged 18; 1912-1913; duration, one year. Disease began, October, 1912; had a psychosis, May, 1913; seen, October, 1913; practically well.

CASE 8.—E. K., a woman, aged 50; 1912-1913; duration, one year; disease began, April, 1912; seen, May, 1913, and was then greatly improved.

CASE 9.—J. G., a man, aged 47; 1912-1913; duration, one year; not followed up.

CASE 10.—Mrs. P., aged 33; 1913-1915; duration, two years; first attack, September, 1913; better, March, 1914; well, May, 1914; cancer of breast removed, October, 1914; second attack, March, 1915; well, June, 1915.

CASE 11.—S. P., a man, aged 69; 1920-1921; duration, one year; disease began, December, 1920; better, June, 1921; improved, November, 1921.

CASE 12.—M. L., a man, aged 33; 1906-1912; duration, six years; disease began, 1906; seen by me, 1910; improvement, 1911; recurrence and death, 1917.

CASE 13.—M., a woman, aged 36; duration, seventeen years; first attack, 1903; second attack, 1906; third attack, 1908; fourth attack, 1909; fifth attack, 1913; well, 1920.

CASE 14.—M., a man, aged 19; 1915-1921; duration, six years; first attack, 1915; second attack, 1916; third attack, 1917; seen in fourth attack, March, 1917; well, November, 1917; well at date, November, 1921, except for an occasional diplopia.

It will be seen that I report four recovered; three practically well; four improved; one not improved; one died of cancer; one died of the disease, and one not followed up.

None of the patients died within a year, and the duration under observation, was: one year, five; two years, one; four years, one; five years, one; six years, one; seven years, one; twelve years, one; thirteen years, one; seventeen years, one.

The difference in the course of myasthenia gravis, as shown above, is due, I think, in part to the treatment given the patients. They did not all receive or follow up this treatment, but those who did showed the best results. They were Cases 4, 5, 10, 11, 13 and 14.

Six other patients received treatment irregularly, or discontinued it. The patient who died of the disease received treatment irregularly and was for about half the time treated for cerebral syphilis, which he did not have. He lived six years.



## REPORT OF THREE CASES

The method and result of treatment or the natural course of the disease may be shown in the detailed report of three cases:

CASE 5.—J. H. V., a lawyer, aged 65, came to see me, Nov. 4, 1910. There had been apoplexy in the family; otherwise the history was normal. The patient had been well, active, hardworking, and a good deal of a talker. He had used tobacco, but not alcohol. He had been in the habit of keeping his bowels very freely open, to ward off apoplexy. About three years before I saw him, he had an attack which was called bulbar paralysis and which lasted three or four months. In the summer of 1910 his second attack came on, affecting first the tongue and lips, then the throat. He was of moderate height and weight, but rather spare build. His station and gait were normal. He had had diplopia, but it was not present at the examination, and he moved the eyes in all directions, the pupils being equal and reacting to light and accommodation. There was no ptosis. The lower lip drooped, and he could not close his mouth tightly or hold a cigar in his mouth, or whistle. He protruded the tongue and moved it freely. The palatal reflex was weak, the voice nasal, and he soon tired of talking. He could swallow only soft food, and it sometimes got in his nose, sometimes in the throat. After eating, he had a profuse flow of thick saliva. His grip was weak; in the left hand 40, in the right 60. The knee jerks were equal and not active; there was no Babinski reflex. He had no atrophy, fibrillary tremor or sensory or sphincter trouble. His blood pressure was 180; the urine and the heart were normal. He was placed on treatment. Four weeks later he was taking one-fifth grain (13 mg.) of strychnin sulphate twice a day. Soon after this he began to improve, and in two or three months he was well and back at his work. He continued well for the next ten years, dying at the age of 75.

CASE 4.—R. J. D., a man, aged 48, seen by me in April, 1909, whose father was healthy and whose mother died of cancer of breast, had had malarial fever and typhoid. He had been a moderate drinker and smoker. He had an initial seizure in 1904, in the form of a short attack of diplopia. The second attack began in December, 1907, with trouble in swallowing. This lasted only a week. The third attack began in April, 1908, with difficulty in speaking and swallowing. This disappeared; but a little later he noticed trouble in chewing; his jaw would become weak and would cramp. Then trouble with swallowing developed again, and by September, 1908, he could hardly swallow at all, the food getting in the nose. He was then put on strychnin by his local physician. At first he got worse; but improved when he reached one-quarter grain (16 mg.) once daily. Then strychnin was stopped and he got worse. It was renewed and he improved. He had at this time diplopia and masticatory weakness, so that at one time he could not close his jaws. When I saw him in April, 1909, he could stretch out his lips, but could not whistle; his left lid drooped; the pupils and ocular excursions were normal; the reflexes were normal; there was no fibrillary tremor, atrophy, pain or anesthesia of any kind. His speech was clear, but soon weakened and got thick. He could chew, but soon tired. He could not mount his horse, or even mount a high step. He was then taking one-seventh grain (9 mg.) of strychnin twice a day hypodermically, and had taken ninety-two injections. I continued the strychnin in one-twelfth grain (5.4 mg.) doses twice a day. Urinalysis revealed: high indican; acidity, +; rest-nitrogen increased; purin-nitrogen, low; creatinin, decreased (Dr. T. W. Hastings).

The patient did not improve further for six weeks; then he began to get steadily better, and in January, 1910, he was practically well and continued so until in January, 1911, when he suddenly developed intestinal cancer, from which he died, in February, 1911.

CASE 14.—Mr. F. E. M., aged 19, a student, examined in March, 1917, whose family history was negative, and whose parents were people of average height, was the oldest of four children, who were all well. In childhood he had scarlet fever, measles, diphtheria and appendicitis. In the fall of 1915, after a football game, when he was very tired, he

noticed a drooping of one lid and diplopia. He recovered from this in about three weeks, but it returned in three months. Up to March, 1917, a period of a year and a half, he had four attacks, each lasting several weeks. These attacks at first affected only the left eye, but in February, 1917, the first and second fingers of the left hand began to drop, and the grip in each hand was weak. The patient was tall (6 feet, 2 inches [188 cm.]), muscular and had been in active athletics. He weighed 178 pounds. He had a very smooth face and no upper lateral incisors. The hair distribution was normal, except that the pubic hair was of feminine type. The genitals were normal, the form masculine. There was moderate drooping of the lids, the left more than the right; there was complete ophthalmoplegia externa. He could not move the eyes up or down, in or out, but he had no diplopia. The pupils reacted to light and accommodation. He was tired by mastication and he could not read out loud long, because his tongue grew tired. The facial muscles were normal, and he had no mask or parkinsonian attitude; gait and station were normal; there was no sensory disturbance. He could not at first easily open the closed hands (myotonia) though the grip was 90 and 80. The knee jerks were equal, exaggerated and were not exhaustible. There was no clonus or Babinski reflex. The galvanic and faradic reactions were not myasthenic (they often are not in this disease).

The patient was placed under treatment consisting of rest, elimination and strychnin. Two months later he was taking one-fourth grain (16 mg.) of strychnin twice a day hypodermically. He was better and stronger, the eyes were more open, but still immobile. He could now read out loud and talk without fatigue. The fingers of the left hand still drooped a little on extension. In early June he could move the eyes down a little, and late in June he could move them laterally. In November, 1917, he had gone back to work and was feeling strong and well. His eyes could move in all directions. There was a slight droop to the lids. The blood pressure had been about 150 both when standing and lying during the whole eight months, and the pulse between 90 and 100 standing and between 60 and 70 lying. It is now four years since I saw the patient, but his physician in October, 1921, wrote that he still had some slight trouble with his eye, but was otherwise well and was actively engaged in business.

## SYMPTOMATOLOGY

This paper was meant to be a therapeutic one; but while my cases furnish nothing absolutely new to the symptomatology of the disease, they bring into special prominence the frequency of mild prodromal seizures, the character and length of the remissions, and the often prolonged and favorable course of the malady.

*Prodromal Seizures.*—Fifty per cent. of my patients had prodromal seizures consisting of diplopia or other symptoms of oculomotor weakness, with or without some bulbar weakness, shown in difficulty and fatigue in talking, chewing or swallowing. These attacks lasted usually only two or three months, but in some the patient is left with a residuum for one or two years. One case has been reported of a diplopia followed by the full attack thirteen years later (McEndree). Karplus reports a case in which diplopia occurred yearly for nineteen years; then myasthenia gravis developed.

It seems very likely that attacks like these abortive types, but which never are followed by any serious attack occur, but are not recognized. It may well be that third and sixth nerve palsies, which are seen so often and attributed to colds or casual infection, if studied would be found to have some myasthenic involvement, bulbar or otherwise. I have seen what might be called a myasthenic arm and a myasthenic leg palsy. These are usually considered hysterical. An intensive study of such attacks ought to be made.<sup>1</sup>

1. Some of the other premonitory symptoms that have been noted are headache and a sense of general weakness with vertigo, drowsiness, cardiac arrhythmia and extrasystole.



*Attacks and Remissions.*—After the definite and serious attack, lasting from three months to a year, occurs, there come remissions in which, however, the patient is not perfectly well, but has some diplopia, or tendency to bulbar or general muscular weakness. These remissions may last from one to three years or even longer, and may end in cure.

As illustrating the natural history of the disease, I would state that one patient had five attacks in seventeen years and is well now. Another patient had four attacks in one and one-half years and is well now. Five of my patients had only two attacks.

After a patient has passed through this very serious attack, later attacks are more amenable to treatment. This is my experience, but perhaps not that of others.

*Myasthenic Myotonia.*—A symptom not much referred to is the myotonia that sometimes occurs in the affected muscles. I had a patient who had a facial involvement, and when she smiled, "the smile would not come off." In another patient the flexed hand could not at once be opened, owing to a flexor myotonus. This could not be due to the strychnin, because it occurred before treatment was begun.

*Etiology.*—Most cases occur between 30 and 50. Mine ranged from 17 to 69. Women are a little more subject to the malady than men, but in my cases there were eight men and six women. Two were Jews. The others were native Americans of several generations.

I observed the usual suggestions of some hyperthyroidism, such as a slight exophthalmos or goiter. One case began in and one followed a pregnancy. One patient was very tall and of pituitary type. Thus, the view that there is a pluriglandular involvement finds some confirmation.

*Exciting Causes.*—The case of my patient whose first attack came on after a football game shows that violent muscular exertion is one of the exciting factors. Two of my men patients were great talkers—an abnormal form of activity for man. One patient was a pianist, and the trouble began in the fingers. One case occurred during and one after pregnancy. Two occurred after influenza and one after a fish dinner.

*Diagnosis.*—Myasthenia gravis is a disease which runs singularly true to type, so far as cases heretofore described show. Its onset, course and symptoms are very distinctive and the diagnosis easy, when the disease is established. Hun<sup>2</sup> says: "It is really surprising how accurately it [the disease] is duplicated by the great majority of the reported cases. Greater uniformity is met with in few diseases."

This is my experience. Furthermore, at present, I do not think that the disease can be with certainty diagnosed unless eventually it shows bulbar or eye symptoms, or unless without this the course of the disease shows remission and recurrence.

In one of my cases the disease began in the legs; in another in the hands; later came remissions and eventually in all there was bulbar or ocular involvement. It may be that myasthenia gravis attacks only an arm or leg, or the general locomotor muscular system, and stops at this. It would be interesting if this were established, which it is not. Perhaps it can be if the myasthenic electrical reaction is found. There is also this clinical characteristic: that when the affected muscles are tested by repeated voluntary effort, there rather rapidly develops complete exhaustion. In ordi-

nary fatigue or neurasthenic states, this is not the case. In a neurasthenic arm, for example, the dynamometer is squeezed feebly to, say, 20 pounds (9 kg.); but after twenty trials, there is not much fall, while in a myasthenic arm the dynamometer in twenty trials drops to nothing.

It may be, however, that there are variant phases of myasthenia gravis or diseases which have a cousinship to it. Myasthenia gravis shows itself dominantly in the peripheral motor neuron and the muscles. In this, it is related to epidemic (lethargic) encephalitis, Landry's paralysis, poliomyelitis, paralytic rabies, periodic paralysis, botulism and diphtheritic and lead palsies. But it is in its rare acute form mostly like an acute descending paralysis of the Landry type, reversed.

Cases have been reported which lasted only twenty-one days and eleven days, running a course like an acute descending paralysis.

*Pathology.*—I have had one case of descending paralysis running a fatal course in two days. The disease began as myasthenia gravis often does, with a diplopia followed by paralysis of speech and deglutition, involvement of the arms, and death from respiratory paralysis. It was exactly like an acute *froudroyante* form of myasthenia gravis. Necropsy did not disclose any lesion of the central nervous system. Dr. B. H. Fairbanks has reported to the New York Pathological Society this and two similar cases, but of somewhat longer duration (two or three weeks).

These cases and the history of cancer or some other form of tumor in other cases, and of some thymus abnormality in nearly 50 per cent., lead one to think that myasthenia gravis is due to a selective toxin, and that the poison is endogenous and associated with a new growth or abnormality of the thymus, or other gland of internal secretion. This toxin attacks the peripheral motor neurons and muscles. It affects the special senses and also the involuntary muscular system (heart, intestine), but to a less extent.

The fact that lymphorrhages develop in the muscles is the best established one in its anatomy. This means a defective action of the lymphatic system. It may be reasoned that the fatigue products of muscular activity are not properly carried off as a result of lymphatic defect. The various metabolism studies have not yet led to any enlightenment. The disease is very mysterious, and deserves further intensive study.

The history, bibliography, clinical features and pathology of this disease have been thoroughly presented by various writers.

Oppenheim gives a complete history of the disease in his textbook. Bramwell and Campbell<sup>3</sup> compiled and analyzed all reported cases to 1900. Hun<sup>2</sup> reported cases to 1904. Tilney and Mitchell<sup>4</sup> gave the bibliography to 1907. Starr<sup>5</sup> compiled 250 cases and gave the bibliography to 1912. Rigard<sup>6</sup> gave the bibliography to 1913.

Whatever merit is due to the treatment of myasthenia gravis by massive doses of strychnin belongs to Dr. W. O. Bridges of Omaha, who many years ago sent a patient to me who had been apparently rescued from death (remission developed) by this method of treatment.

53 West Fifty-Third Street.

3. Bramwell and Campbell: *Brain*, 1900.

4. Tilney and Mitchell: *Neurographs* 1, 1907.

5. Starr, M. A.: *J. Nerv. & Ment. Dis.*, 1912.

6. Rigard: *Thèse de Paris*, 1913.

2. Hun, Henry: *Albany M. Ann.*, January, 1904.



## SPINAL DRAINAGE WITHOUT LUMBAR PUNCTURE

A NEW METHOD FOR INCREASING THE PENETRATION OF ARSENIC INTO THE SPINAL FLUID IN THE TREATMENT OF NEURAL SYPHILIS

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Success in the treatment of syphilis depends on obtaining specific medication of the tissues actively involved in the disease process.

The structures most accessible to the direct action of the remedial agents are the first to be rid of the invading organisms and the localized reaction to them. The areas of involvement in the central nervous system are apparently the least accessible to specific therapy because of the anatomic difficulties encountered in getting the drugs directly into these tissues.

Following the work of Gilpin and Earley,<sup>1</sup> attention was called<sup>2</sup> in 1917 to the fact that intensive intravenous treatment with arsphenamin followed by spinal drainage gave us an additional means of introducing arsenic into the subarachnoid space. During the intervening years the clinical results that have followed this method, in a large measure, have been satisfactory. However, a method has not been evolved in which the penetration of arsphenamin into the meninges and spinal fluid has been constant.

### PRODUCTION, CIRCULATION AND ABSORPTION OF THE SPINAL FLUID

The cerebrospinal fluid appears to be derived from two sources: through the choroid plexuses in the cerebral ventricles, and from the perivascular spaces surrounding the central nervous tissues. The fluid formed in the lateral ventricles courses downward through the foramen of Monro to the third ventricle and, with the added fluid from the fourth ventricle, passes into the subarachnoid space through the foramina of Magendie and Luschka.

From numerous observations it seems evident that the spinal fluid is absorbed into the dural sinuses along the arachnoid villi and also along the sheaths of the cranial and spinal nerves, finally entering the lymphatic channels.

### PERMEABILITY OF THE MENINGES TO DRUGS AND BACTERIA

Leri, Orifici, Cruchet and Rotky have all reported the presence of iodid or bromid in the spinal fluid of patients suffering with meningitis who had received these drugs by mouth for a considerable time. Osborne<sup>3</sup> has reported the finding of iodine in appreciable amount in the spinal fluid following intravenous injection of sodium iodid. He also states that the pres-

ence of meningitis increases the permeability of the meninges to iodine compounds in the blood.

Mehrtens<sup>4</sup> was unable to detect iodine in the spinal fluid after simple intravenous injection, but in individuals in whom a previous irritation of the meninges had been established by the injection of horse serum, iodine was demonstrated in the spinal fluid.

Wegeforth and Latham<sup>5</sup> quote five instances in man in which infection of the meninges occurred following the withdrawal of normal spinal fluid during septicemia.

Mehrtens and MacArthur<sup>6</sup> analyzed forty-four specimens of spinal fluid after simple intravenous injection of arsphenamin and obtained a positive test for arsenic in 43 per cent. In twenty-one individuals in whom complete spinal drainage had been done following intravenous injections of arsphenamin there was no increase in the number of arsenic penetrations over those found after simple intravenous injection. In forty subsequent cases when arsphenamin had been given following meningeal irritation, they report 92 per cent. of demonstrable arsenic penetrations into the spinal fluid.

Reiger and Solomon<sup>7</sup> found that arsphenamin injected intravenously appeared in the spinal fluid in only 30 per cent. of the cases.

### CHANGES FOLLOWING THE INJECTION OF HYPERTONIC SALINE SOLUTION

Weed and McKibben<sup>7</sup> were the first to show that intravenous injections of hypertonic saline solution caused an initial rise in the pressure of the cerebrospinal fluid followed immediately by a marked fall in this pressure, often to below zero; also that after these injections there is noted immediately a marked decrease in the size of the brain.

Foley and Putman,<sup>8</sup> under the stimulation of Harvey Cushing, have conducted a brilliant series of experiments on the effect of the ingestion of hypertonic saline solution in animals and man. They have repeated the work of Weed and McKibben and have confirmed their general conclusions. Their original conclusions, in brief, are that, "following the ingestion of hypertonic saline solution in cats, the average fall of cerebrospinal fluid pressure was 258 mm. of water." Following this fall in pressure there is a gradual rise until approximately the normal pressure is again reestablished. "Such changes in cerebrospinal fluid pressure were shown to be independent of changes in arterial or venous blood pressure. The manometer readings (pressure values) obtained after salt injection are not due solely to changes in brain volume and capacity of the cerebrospinal fluid spaces, but primarily represent new ratios between secretion and absorption of spinal fluid."

Foley<sup>9</sup> has more recently shown that the administration of hypertonic solutions causes alterations in the gross currents of the fluid which are incident to exten-

4. Mehrtens, H. G.: The Passage of Drugs from Blood Serum to the Spinal Fluid, California State J. Med. **16**: 306 (June) 1918.

5. Wegeforth, P., and Latham, G.: Lumbar Puncture in Meningitis, Am. J. M. Sc. **158**: 183 (Aug.) 1919.

6. Mehrtens, H. G., and MacArthur, C. G.: Therapy of Neurosyphilis Judged by Arsenic Penetration of Meninges, Arch. Neurol. & Psychiat. **2**: 369-375 (Oct.) 1919.

7. Weed, L. H., and McKibben, P. S.: Pressure Changes in the Cerebrospinal Fluid Following Intravenous Injections of Solutions of Various Concentrations, Am. J. Physiol. **48**: 512-530 (May) 1919.

8. Foley, F. E. B., and Putman, T. J.: The Effect of Salt Ingestion on Cerebrospinal Fluid Pressure and Brain Volume, Am. J. Physiol. **53**: 464-476 (Oct.) 1920.

9. Foley, F. E. B.: Personal communication to the authors.

1. Gilpin, S. F., and Earley, T. B.: Drainage of Cerebrospinal Fluid as a Factor in the Treatment of Nervous Syphilis, J. A. M. A. **66**: 260-262 (Jan. 22) 1916.

2. Corbus, B. C.: Prophylaxis in Cerebrospinal Syphilis, J. A. M. A. **69**: 2082-2089 (Dec. 22) 1917.

3. Osborne, E. D.: Iodine in the Cerebrospinal Fluid, J. A. M. A. **76**: 1384-1387 (May 21) 1921.



sive changes in the mechanism of cerebrospinal fluid absorption. This work is as yet unpublished, and the writer has very kindly furnished us with his conclusions.

Foley<sup>10</sup> studied the effect of the administration of hypertonic saline solution on the patients in the clinic of Dr. Harvey Cushing. By observing the changes in a decompression hernia he was able to show that the injection of salt produces a marked fall of cerebrospinal fluid pressure and a diminution of brain bulk.

The decompression hernia gradually recedes into the skull after an intravenous injection of 15 per cent. saline solution. The absorption of spinal fluid, as evidenced by the recession of the protrusion, is completed in from two to three hours. Reabsorption of spinal fluid and restoration of pressure, as evidenced by the return of the herniation, begins from six to seven hours after the injection.

The explanation for this phenomenon apparently lies in the increased osmotic properties of the blood plasma following the addition of a hypertonic solution. Fluid is drawn rapidly into the blood stream from all available sources: cerebrospinal spaces, the intestinal tract and other body tissues. This continues until the osmotic pressure in the fluid cavities outside the vessels is reduced below that within, and a return to equalization is then gradually accomplished by the replacement of these fluids from the blood, probably by the same channels through which absorption originally occurred.

The more recent work of Foley shows that so great is the upset in the normal relationship of the usual channels of the spinal fluid formation that shortly after the hypertonic solution enters the blood stream a complete reversal of the normal flow of cerebrospinal fluid in the perivascular spaces occurs. Even more interesting is the fact that intraventricular absorption of fluid occurs through the choroid plexuses and ependyma. This gives an indication of the extent to which the normal mechanism is upset, with a resultant rapid withdrawal of fluid into the blood stream.

The spinal fluid is restored from the blood stream, and this began about the sixth hour after 100 c.c. of 15 per cent. saline solution had been injected intravenously in the cases studied by Foley at the Peter Bent Brigham Hospital. How long it takes for a complete restoration of fluid content is not known, but from watching the reformation of a decompression hernia, he concludes that it occurs between seven and ten hours after the injection of the saline solution.

#### CLINICAL APPLICATION

As we were familiar with this work, it occurred to us that this phenomenon offered a possible method for increasing the amount of arsenic that would be carried into the spinal fluid after intravenous injection.

If the arsenic was injected just at the time when the increased restorative formation of spinal fluid was taking place, it seemed logical that a much larger quantity of arsenic should be carried into the subarachnoid spaces with the fluid.

#### TECHNIC

In the plan of treatment adopted, all patients were put to bed at least two hours before the injections were begun.

Admission to the hospital was generally at 8 o'clock on the morning in which treatment was instituted.

Excepting for the general contraindications to the administration of neo-arsphanamin, there were no restrictions in the selection of cases for treatment.

At 10 a. m., 100 c.c. of hypertonic saline solution (15 per cent.), warmed to body temperature, was given intravenously by the gravity method. We prefer the gravity method, as it insures a slow, regular diffusion of the saline.

Immediately following the injection, the patient is conscious of experiencing a "feeling of warmth," which gradually increases, but never to an uncomfortable degree. Slowly the feeling of warmth passes down the back until it reaches the lumbar region, where it seems to be dispersed. The whole sensation lasts about ten minutes.

The pulse is accelerated during the "feeling of warmth," but whether this is due to the saline solution or to the apprehension of the individual we are not able to state. At any rate, within ten or fifteen minutes the patient has regained his equanimity, excepting for an increased thirst and an occasional increased micturition and defecation, and there is no untoward reaction. No food is permitted at midday. At the end of six hours, 0.9 gm. of neo-arsphenamin (Dermatological Research Laboratories) is given intravenously. In all of our cases this dose was well tolerated. In one or two hours, lumbar puncture was performed and from 10 to 15 c.c. of fluid was withdrawn. Careful readings of the spinal fluid pressure were tabulated.

Nourishment was given four hours after the neo-arsphenamin injection. All patients were kept in bed for thirty-six hours after the puncture. Excepting for a slight rise in temperature (which was easily accounted for by the neo-arsphenamin injection), there were no complications or distressing sequelae following this procedure.

The use of fresh, sterile distilled water for the administration both of the saline solution and the neo-arsphenamin is absolutely essential if one wishes to avoid any complications.

#### SUGGESTIONS FOR A TENTATIVE PLAN OF TREATMENT

As we believed in the possible efficiency of this method of treatment, a number of private patients were subjected to the foregoing plan, with certain exceptions.

The patients were subjected to a lumbar puncture. From three to seven days later the following technic was carried out: At 8 a. m. the patient entered the hospital. At 10 a. m., 100 c.c. of hypertonic saline solution (15 per cent.) was administered intravenously. At 4 p. m., 0.9 gm. of neo-arsphenamin was administered intravenously. At 9 p. m. the patient was permitted to go home. Caution was used in keeping the patients in bed the whole time.

The same treatment was carried out for five successive weeks, but at the end of the fifth injection lumbar puncture was performed and the spinal fluid was examined serologically; also a quantitative test for arsenic was made. When more intensive medication is desired, more frequent injections may be given.

It is not necessary from a therapeutic standpoint to perform lumbar puncture and drainage. This is done only when it is desired to study the cerebrospinal fluid serologically and quantitatively for arsenic.

The method of quantitative estimation of arsenic in spinal fluid, as recommended by Mehrtens, was followed with slight variations.

10. Foley, F. E. B.: Clinical Uses of Salt Solution in Conditions of Increased Intracranial Tension, Surg., Gynec. & Obst. **33**: 126-136 (Aug.) 1921.



RESULTS

The twenty-eight patients treated according to this plan, as reported in the accompanying table, all showed definite subarachnoid involvement.

In many of the cases the infection was latent and was discovered only after lumbar puncture with serologic examinations had been made.

All patients had been under treatment before coming under observation for this experiment, and every patient except one (Case 9) gave positive serologic findings at the beginning of treatment.

RESULTS IN TWENTY-EIGHT CASES

Case No.	Diagnosis	Previous Treatment	Amt., C.e.	Pressure, Mm. Hg	Cell Count	Wassermann Reaction	Arsenic per c.e.
1	Cerebrospinal syphilis	Yes	14	8	1	Pos., 1 c.e.; neg., 0.5 c.e.	0.002 mg. per c.e.
2	Latent cerebrospinal syphilis	Yes	21	18	2	Pos., 1 c.e.; weakly pos., 0.5 c.e.	A trace
3	Cerebrospinal syphilis	Yes	21	10	2	Pos., 2 c.e.; neg., 1 c.e.	A trace
4	Tabes.....	Yes	18	16	1	Neg., 2 c.e.	0.01 mg. per c.e.
5	Cerebrospinal syphilis	Yes	37	20	0	Pos., 0.5 c.e.	A trace
6	Cerebrospinal syphilis	Yes	27	10	1	Pos., 2 c.e.; neg., 1 c.e.	0.001 mg. per c.e.
7	Cerebrospinal syphilis	Yes	30	10	1	Pos., 2 c.e.; neg., 1 c.e.	A trace
8	Latent spinal syphilis	Yes	25	10	4	Neg., 2 c.e.	A trace
9	Cerebrospinal syphilis	Yes	34	20	0	Neg., 2 c.e.	A trace
10	Latent spinal syphilis	Yes	25	9	3	Neg., 2 c.e.	A trace
11	Tabes.....	Yes	20	15	10	Pos., 0.5 c.e.	A trace
12	Cerebrospinal syphilis	Yes	20	26	1	Pos., 1 c.e.; weakly pos., 0.5 c.e.	0.0004 mg. per c.e.
13	Latent spinal syphilis	Yes	17	10	38	Pos. with 0.5 c.e.	A trace
14	Cerebrospinal syphilis	Yes	18	10	6	Pos., 1 c.e.; weakly pos., 0.5 c.e.	None found
15	Cerebrospinal syphilis	Yes	15	10	3	Pos., 1 c.e.; weakly pos., 0.5 c.e.	A trace
16	Latent cerebrospinal syphilis	Yes	13	8	2	Pos., 0.5 c.e.	A trace
17	Latent cerebrospinal syphilis	Yes	15	12	37	Pos., 0.5 c.e.	A trace
18	Latent cerebrospinal syphilis	Yes	20	9	7	Neg., 2 c.e.	A trace
19	Tabes.....	Yes	12	26	5	Pos., 1 c.e.; weakly pos., 0.5 c.e.	A trace
20	Cerebrospinal syphilis	Yes	12	20	0	Pos., 2 c.e.; neg., 1 c.e.	0.0003 mg. per c.e.
21	Tabes.....	Yes	17	18	0	Neg., 2 c.e.	0.0002 mg. per c.e.
22	Latent cerebrospinal syphilis	Yes	15	10	5	Pos., 1 c.e.; neg., 0.5 c.e.	A trace
23	Cerebrospinal syphilis	Yes	12	26	3	Pos., 0.5 c.e.	0.002 mg. per c.e.
24	Cerebrospinal syphilis	Yes	12	18	6	Neg., 2 c.e.	0.003 mg. per c.e.
25	Latent cerebrospinal syphilis	Yes	15	16	0	Pos., 1 c.e.; neg., 0.5 c.e.	None found
26	Latent cerebrospinal syphilis	Yes	24	10	9	Pos., 1 c.e.; neg., 0.5 c.e.	0.0004 mg. per c.e.
27	Tabes.....	Yes	26	16	2	Pos., 0.5 c.e.	Trace
28	Cerebrospinal syphilis	Yes	24	10	1	Pos., 0.5 c.e.	0.002 mg. per c.e.

Some of the patients obtained their first negative serologic findings following this form of therapy.

Careful manometer readings were made in each patient, but in every instance it was within normal (from 8 to 18 mm. of mercury) limits or slightly higher.

Arsenic was found in the spinal fluid in all but two patients (93 per cent). The amount of arsenic varied from a slight trace to 0.01 mg. per cubic centimeter.

CONCLUSIONS

1. The ideal time for intravenous injection of remedial agents is during the period of increased fluid formation by the choroid plexus and perivascular spaces. The active circulation of the spinal fluid along normal channels should result in a more uniform

diffusion of the drug throughout the spinal canal as compared with the various forms of intraspinal therapy.

2. This method is simple and painless, and is devoid of all possible post-therapeutic complications and reactions.

3. The intravenous injection of freshly distilled, sterile hypertonic saline solution (15 per cent.) is followed by definite transitory symptoms.

4. The administration intravenously of neo-arsphenamin dissolved in freshly distilled sterile water at the end of six hours is likewise followed by no distressing sequelae.

5. The spinal fluid pressure taken at the end of eight hours is within normal limits.

6. Arsenic penetrations following this method are as constant as, or better than, any method that has been suggested up to the present time.

NEPHRITIS AND URINARY CALCULI  
AFTER PRODUCTION OF CHRONIC  
FOCI OF INFECTION

PRELIMINARY REPORT \*

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AND

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During the course of numerous experiments on the localization of bacteria from various diseases, instances of extremely specific effects were noted. Some of these observations suggested that certain chronic diseases not generally believed to be due to infection might be reproduced if a more or less continuous supply of bacteria could be furnished through a focus of infection, and if the elective localizing power and the property to incite certain specific reactions could be maintained: two requirements which are difficult to fulfil when bacteria are grown on artificial mediums. Acting on these ideas, we performed a series of experiments in which the pulps of teeth in dogs were removed and the pulp chambers infected with freshly isolated bacteria from various diseases. We shall herewith describe briefly the method of conducting the experiments and report on results obtained in two diseases, nephritis and nephrolithiasis.

Eighteen vigorous, well nourished dogs were selected. Catheterized specimens of urine were normal in all. Roentgenograms of the kidney region, in the experiments on nephrolithiasis, were negative when the experiment was begun. During devitalization and infection of the teeth, the animals were covered with a sterile sheet, and kept under ether anesthesia by the intratracheal method. A rubber dam isolated the teeth to be worked on, the two lower cuspids in four dogs, and the four cuspids in ten. The teeth were scrubbed, sterilized with alcohol and tincture of iodine, and then cut off with sterile bone nippers midway between the incisal edge and the gum margin. The pulps were carefully removed with sterile broaches and, after the hemorrhage had ceased, the bacteria in dense suspension were introduced into the pulp chambers with fine capillary glass pipets. The canals were then sealed with impervious dental cement. These animals, and the control animals whose teeth were not infected, were

\* From the Division of Experimental Bacteriology, the Mayo Foundation.



placed under hygienic conditions and fed a balanced diet of dog biscuit and meat. Catheterized specimens of urine were examined at intervals in all experiments and, in addition, roentgenograms were made of the kidney region in the experiment on nephrolithiasis.

One kidney was removed from each dog in from fifty-one to 104 days after infection of the teeth, to afford opportunity to compare the findings in the kidneys removed with the findings in the other kidneys at necropsy.

In the experiments on nephritis, the teeth of four dogs were devitalized and infected with a staphylococcus from the nose and tonsils of a patient with advanced nephritis. This strain had a marked affinity for the kidneys of rabbits, and produced pronounced lesions on intravenous injection.

Two sets of experiments on nephrolithiasis were performed, the first on two dogs, the second on twelve dogs. In the dogs in the first experiment, and in four dogs in the second experiment, the teeth were infected with streptococci isolated repeatedly from the urine of a patient with typical attacks of renal colic due to stones. The teeth of four other dogs in the second experiment were infected, as controls, with a mixture of streptococci from arthritis; and as additional controls, four dogs whose teeth were not infected were observed.

The duration of the experiments on nephritis ranged from sixty-three to 115 days: in the series on nephrolithiasis, from eleven to 123 days in the six dogs infected with the nephrolithiasis strain, from five to 120 days in the four infected with the arthritis strains, and from fourteen to 120 days in the controls in which the teeth were not infected. The four dogs in the experiments on nephritis developed lesions in the parenchyma of the kidneys. In three the lesions were more pronounced in the kidney examined at necropsy; in the other dog the reverse was true, and healing was well advanced. The lesions in the kidneys were essentially focal in character, often widely disseminated, and in some instances a large part of the parenchyma of the kidney was involved. The location and type of cellular infiltration and other changes resembled closely those of acute interstitial nephritis, which occurs often with infectious diseases. In one of these dogs marked cystitis and pyelitis, with secondary infection, were found, and in the adherent membranous exudate calcareous deposits had occurred.

The staphylococcus was isolated at the end of the experiment from the focus and the kidneys of the dogs. It manifested elective localizing power for the kidneys of rabbits when injected intravenously. It was demonstrated in the lesions, and proved absent in the normal portion of the kidney.

Striking as the findings in the kidneys were, the general picture in the dogs was somewhat different from that of patients with advanced nephritis. The dogs lost markedly in weight, they had no edema, and the urine contained relatively little albumin and few casts. However, the character of the lesions indicated that, if the experiments had been of longer duration, the picture might have become more like that of well advanced nephritis.

Five of the six dogs infected with the streptococcus from the urine of the patient with nephrolithiasis developed calculi; the sixth dog died too soon for stones to form. Calculi were found in both kidneys in four dogs. The size varied from small concretions to stones measuring 3 by 7 mm. ( $\frac{1}{8}$  to  $\frac{3}{32}$  inch) and was roughly

proportional to the duration of the experiment. The findings in these dogs resembled those in patients in this condition. The stones were hard, angular and rough, and in chemical composition similar to those in nephrolithiasis in man. The evidence of infection of the urinary tract, and the lesions in the kidney were slight, except where obstruction in the ureter had occurred from impacted stone.

The causal relationship between the calculi and the streptococcus inoculated into the teeth seems established. The organism was isolated from the kidneys, from some of the stones, and from the teeth of the dogs, and its elective affinity for the medulla of the kidneys in rabbits on intravenous injection was demonstrated; it was found in the lesions of collecting tubules where crystallization and stone formation were beginning. None of the four dogs in which the teeth were infected with streptococci from arthritis developed stone, nor did any of the four additional control dogs which were kept under the same conditions, but whose teeth were not infected. The urine in all of these eight dogs remained normal, and the kidneys had no focal lesions.

Stones of the character obtained in these experiments were not found in another series of fourteen dogs which were kept under similar conditions and whose teeth were devitalized and infected with strains other than those from nephrolithiasis and nephritis, nor in a single instance in the examination of more than 500 dogs in connection with other experiments.

It is not clear why the four dogs infected with the streptococcus of arthritis failed to develop arthritis. There was active infection around the teeth in all instances, and the staphylococcus from the pulp chamber in one of the dogs inoculated four months previously retained its affinity for the joints of rabbits on intravenous injection. It would seem, therefore, that the joints of these dogs were not affected because of high resistance of these structures to invasion by this organism during the relatively short duration of the experiment, and not to encapsulation or loss of specific localizing power.

The experimentally produced foci of infection, aside from being the source of the organisms which localized electively, appeared to have a marked general deleterious effect. The dogs lost markedly in weight, lost much hair, and became susceptible to intercurrent infection. An active process was found in the devitalized and infected teeth at the end of the experiments. The findings around the teeth were similar to those following the artificial devitalization of teeth in man. The infected teeth became discolored, but remained firmly in place in the alveolar sockets; the infection caused rarefaction and absorption of bone in the periapical region, without swelling, pain or tenderness. The character of the cellular infiltration and the distribution of the bacteria of well formed granulomas were also strikingly similar.

The details of these experiments and further results along this line will be published elsewhere.

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**Administration of the Hospital.**—A new era in the hospital world is opening. The day of self-made workers is passing. Those of the coming generation who have many advantages given them from the summing up of pioneer experience should value the interdependence of the hospital in all its internal aspects and also as a community health center, that it may be administered as an institution in the best sense of the word. —N. E. Cadmus and M. Le Jeune, *Hospital Social Service* 36:352 (May) 1921.



## A CONTINUOUS KNOTTED LOOP SUTURE

ITS FIELD OF APPLICATION

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The suture described in this paper was first used to draw together the margins of the wound after breast amputation.<sup>1</sup> Its advantage is that by its use as a relaxation suture the cutting pull or tension on each side of the wound is distributed among several points instead of being concentrated at one point.

In the closure of wounds, the margins of which are widely separated, as in those in which there is

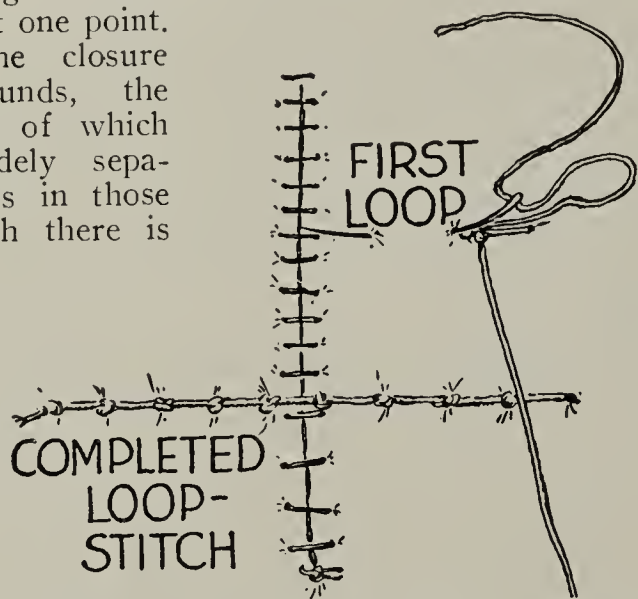


Fig. 1.—Method of introducing running knotted loop suture.

an extensive skin defect, sutures which will bring together the wound edges, or skin margins, and hold them coapted, resisting the sometimes unavoidable tension without cutting out, are obviously helpful.

For the purpose of relaxing the tissues immediately along the wound margin, heavy interrupted sutures are usually passed at a distance of 1 inch (2.5 cm.) or more from the wound line on each side, and these, to some extent, take the strain from the coaptation sutures.

Such relaxation sutures, however, do not differ essentially from the coaptation sutures applied closely along the wound margin. Their slight advantage consists in the fact that they are usually of heavier material and, passing through the skin at a greater distance from the wound, the likelihood of their cutting out is lessened, since they may cut for a considerable distance without splitting the skin quite to the

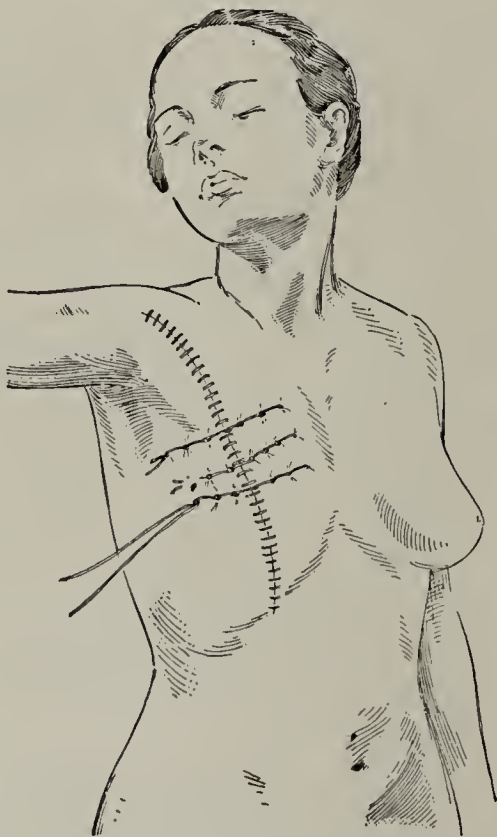


Fig. 2.—Running knotted loop suture relieving tension in breast amputation wound.

wound edge. If an ordinary continuous suture breaks at any point, the wound margins must fall apart, unless the closure is otherwise reinforced. Here dependence is placed on a single strand. Infection, if it should

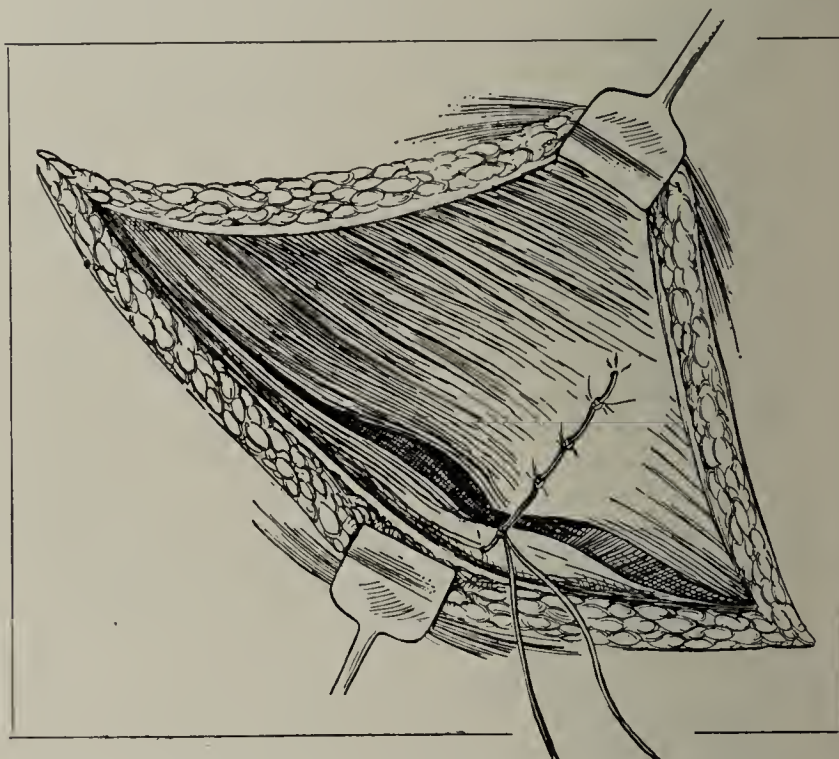


Fig. 3.—Continuous knotted loop suture approximating conjoined tendon and Poupart's ligament relaxing tension.

occur, tends to travel along a continuous suture. These perhaps somewhat captious objections do not apply so clearly to interrupted sutures.

By most surgeons it is felt that accurate approximation of wound edges, particularly after operations for malignant disease, is very desirable. Until more is known of the origin and nature of cancer, the lurking possibilities of a granulating surface with its embryonal cell elements will occasion uneasiness until healed over. Even skin grafts with their active cell proliferation can hardly have the confidence that is given to normal skin. The practice of approximating the wound edges by separating the skin from its attachments over a large area with consequent diminution of blood supply is not infrequently followed by sloughing, which greatly increases the difficulties which militate against primary covering of the defect.

Clearly, it should be the maxim of every surgeon to have no thought of the covering of the defect while engaged in the radical removal of every vestige of malignant or suspected tissue. The manner of repairing the defect is a matter of no importance until the operation proper is complete. When a thorough operation, however, has been completed, at least a part of the defect can always be covered by precise coaptation of wound margins without unsafe tension.

The running loop suture shown in Figures 1 and 2 holds the margins together more firmly than any relaxation suture with which I am familiar; moreover, it

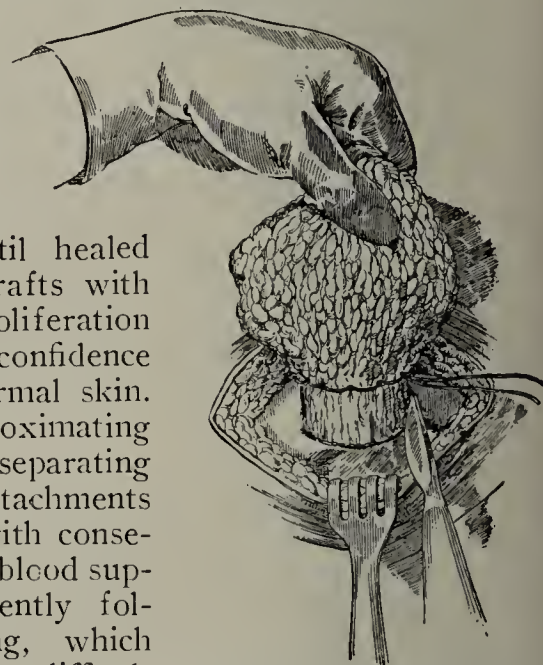


Fig. 4.—Running knotted loop suture used to control bleeding before abscission of omentum.

1. Eastman, J. R.: The Approximation of Widely Separated Wound Margins, J. A. M. A. 55:2283 (Dec. 31) 1910.



will not cut out unless the pull is very great indeed, for here the tension is distributed over many points instead of two, as in the case of ordinary relaxation sutures. In the case of the running loop suture shown in Figure 1 there are nine loops; therefore the tension is divided among ten points, and if several sutures of this character are used to reinforce the coaptation sutures, the wound margins, for example after a breast amputation, may be brought together under tension without subsequent separation and without cutting out of the sutures.

In breast surgery these relaxation sutures can be applied best after the wound edges have been coapted in the customary manner. They are introduced in much the same manner as a sewing machine applies the chain stitch, but differ from a chain stitch in that each loop is secured by a "hard" knot before the next loop is taken.

Beginning about  $2\frac{1}{2}$  inches (6.3 cm.) from the wound margin, the needle is passed under the skin in the direction of the wound edge and brought out about 1 cm. ( $\frac{3}{8}$  inch) nearer the wound edge than it entered. The long suture is drawn through to a point near its middle and tied with a reef or hard knot, as if one

through the hole under the knot for the second loop, and the long ends are tied again over the opening at which the needle emerges. The loops are carried across the wound line, and as many are taken on the opposite side as the tension that is to be overcome makes necessary.

It is customary practice to apply two or three such knotted chain sutures after breast amputations if there is considerable traction on the coaptation sutures. Three, about 1 inch (2.5 cm.) apart, placed where the traction is usually greatest, that is, near the middle of the wound line, usually suffice.

The knotted loop suture may be utilized in drawing the internal oblique and transversalis muscles to Poupart's ligament in cases of very wide inguinal hernia (Fig. 3). Likewise

the conjoined tendon may be drawn and held to Poupart's ligament if several loops of the chain stitch are applied across it. Whereas an ordinary suture in hernia with wide separation often simply splits off a narrow ribbon from the edge where the needle perforates the inter-



Fig. 5.—Knotted loop suture used to control hemorrhage in mesentery before resection of intestine.



Fig. 6.—Simple over and over suture for control of bleeding of mucous membrane in gastro-enterostomy.

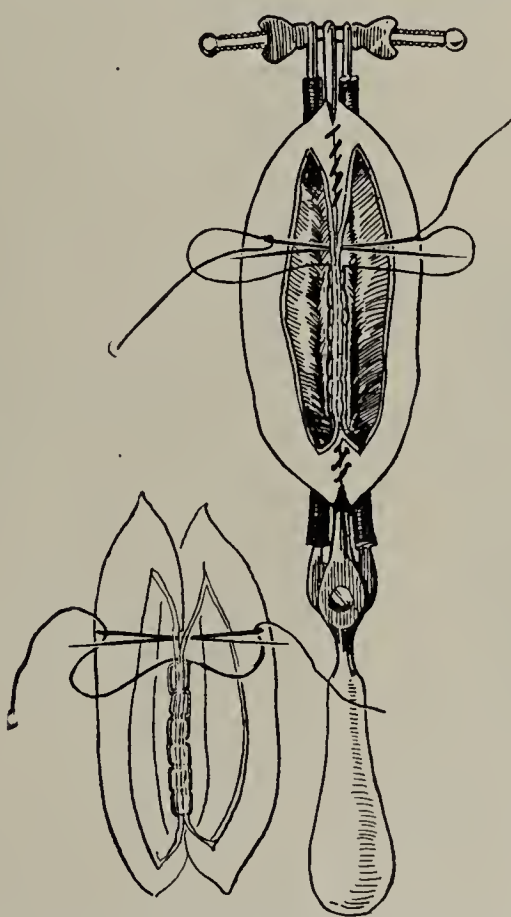


Fig. 7.—Cobbler's stitch in gastro-enterostomy.

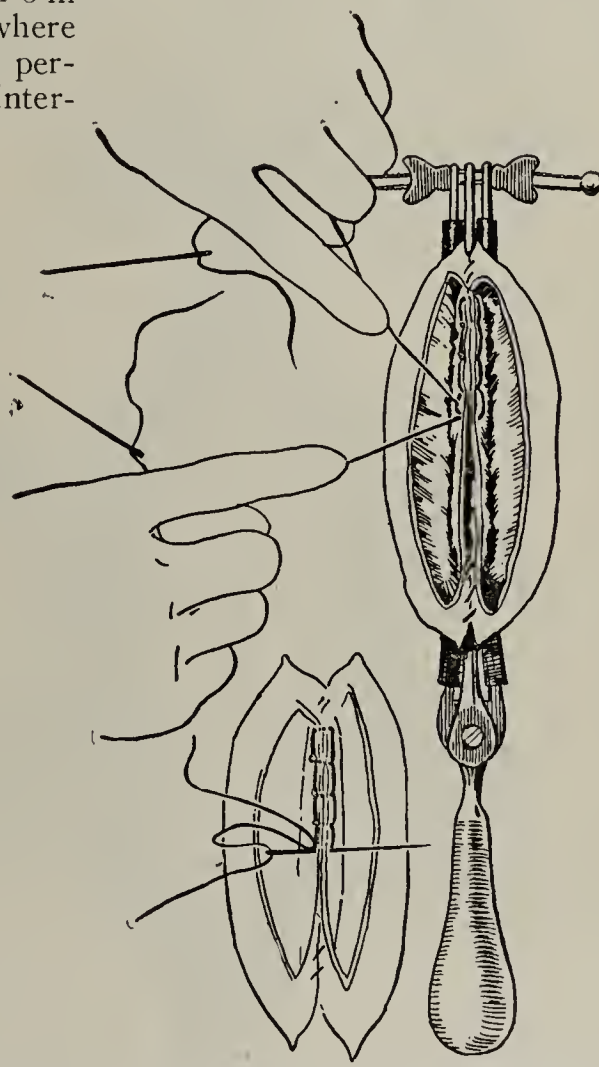


Fig. 8.—Author's running knotted loop suture for control of bleeding mucous membrane in gastro-enterostomy.

were tying off a blood vessel, the knot falling over the aperture of exit or the opening nearer the wound line. In other words, the suture is passed under the skin for 1 cm. ( $\frac{3}{8}$  inch), and both ends are tied over the opening next to the wound. The needle is then passed back

nal oblique and transversalis muscles, the knotted loop suture will pull over the whole muscle mass without injury.

The splitting of the conjoined tendon for the purpose of relaxation, and the division of the rectus sheath



with or without transplantation of the belly of the rectus, while they are helpful practices in some cases, may be dispensed with often, if the knotted loop suture here described is used.

The continuous knotted loop suture serves admirably to tie off and secure the blood vessels in a mass of omentum before its abscission (Fig. 4). Here it is just as efficacious as a series of interlocking ligatures embracing the entire thickness and width of the omentum, and can be introduced in about one-third the time consumed in applying the ordinary interlocking loops. A similar use of the continuous knotted loop suture consists in its application to secure the blood vessels of the mesentery before resection of the V-shaped piece of mesentery along with a segment of intestine in resection of the intestine (Fig. 5). The continuous knotted loop hemostatic suture traverses the entire length of the V-shaped incision. It provides perfect hemostasis, and its introduction in the mesentery is very simple and expeditious.

I have used the suture a number of times for the through and through suture or hemostatic suture of the mucous membrane in gastro-enterostomy. Most surgeons at this time have abandoned the simple over and over running suture of catgut as the hemostatic suture in this operation, preferring for this use the cobbler's or harness maker's suture. The author's knotted loop suture will accomplish all that is accomplished by the cobbler's stitch; it will give even greater security against bleeding, and it is introduced more quickly and without the annoyance that is caused by using the suture with a needle at each end (Figs. 6, 7 and 8).

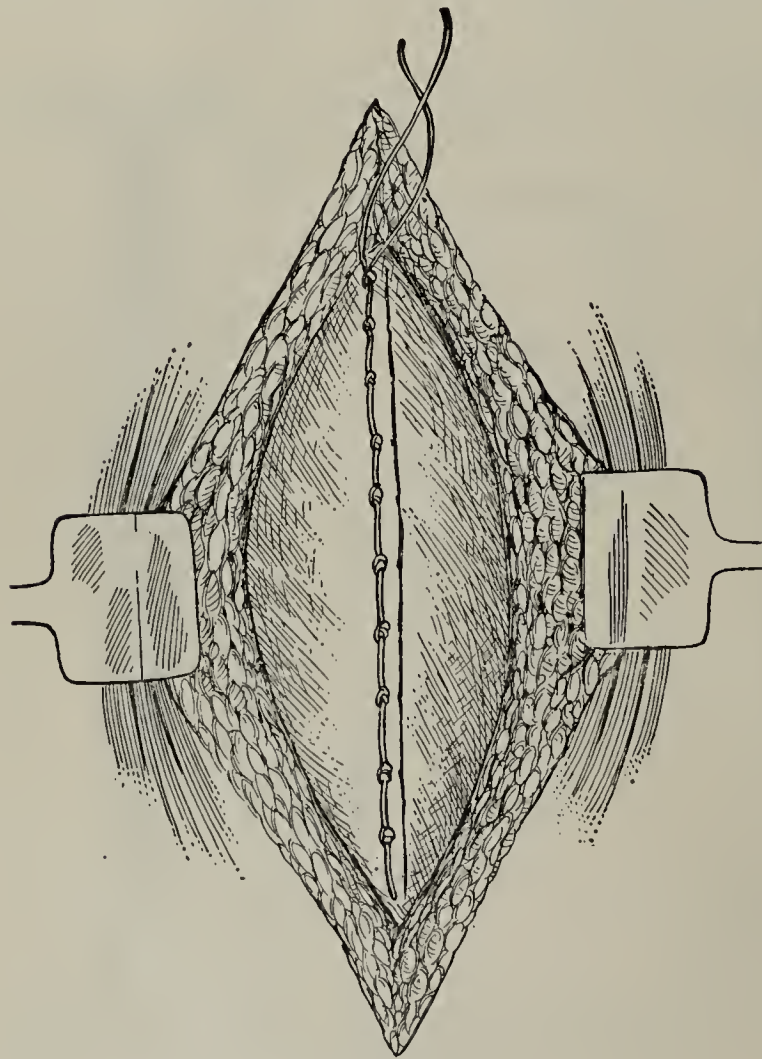


Fig. 9.—Knotted loop suture closing fascia in abdominal wound.

In closing the fascia of abdominal wounds, one hardly dares to trust to the ordinary continuous single strand suture, which, if it breaks at one point, permits opening of the entire length of the fascia wound. Here the knotted loop suture gives all the security of

interrupted sutures, and is applied almost as quickly as a continuous suture (Fig. 9). It may be used likewise to sew down the overhanging apron of fascia in the Mayo operation for umbilical hernia (Fig. 10). It is,

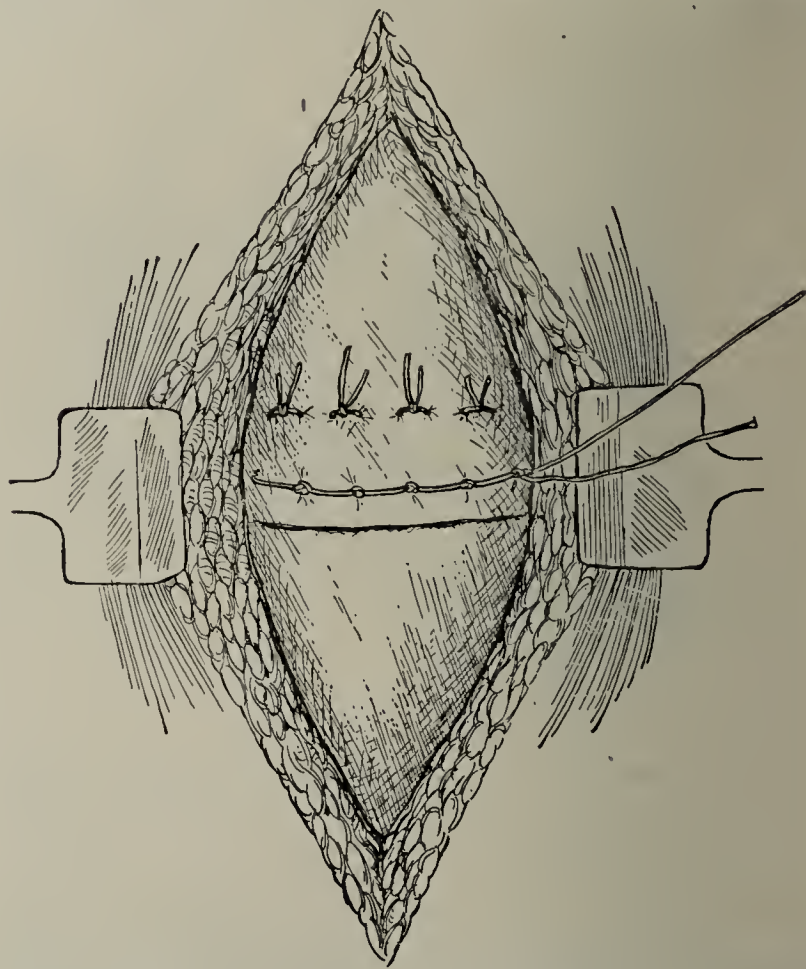


Fig. 10.—Continuous knotted loop suture sewing down overhanging apron of fascia in Mayo operation for umbilical hernia.

of course, applied after the stout mattress sutures have been tied. If one desires to use a circular hemostatic suture to provide a local area of ischemia in the scalp before operations on the cranium, in order that the horseshoe incision within this area may be bloodless, the knotted loop suture fits this purpose admirably, giving better control of hemorrhage than the drop-back continuous chain stitch used by Heidenhain for this purpose (Fig. 11). It is not always prudent to use such a suture to provide this ischemia of the scalp before operating. In some cases it will be found that at the close of the operation when such a suture is removed, an additional twenty minutes or half hour must be consumed in tying every tiny bleeding vessel of the scalp; whereas, if mouse-tooth forceps had been applied at the outset, and left in place during the operation, there would be little time consumed in ligating vessels. However, if it is desired to get into the cranial cavity quickly and without bleeding, the use of the circular continuous knotted loop hemostatic suture, with a soft jawed rubber covered clamp applied across the base of the flap, will obviate the annoyance of scalp bleeding.

Another use of the knotted loop suture is made in tying off the broad ligament as in subtotal abdominal hysterectomy (Fig. 12). In those cases in which it is desirable to use the clamp method and tie off the broad ligament with several loops of catgut, the single running knotted loop suture can be applied very quickly and securely, the first loop embracing the artery of the round ligament and the ovarian artery, and the last loop securing the uterine artery.

In the Langenbeck or similar flap operations there will be much less likelihood of separation of the wound margins and consequent failure of union if the mat-



tress coaptation sutures, after being reinforced by a simple running suture, are further supported by a continuous relaxation suture passing round the free edge of the anterior palatine arch<sup>2</sup> (Fig. 13).

The anterior part of the soft palate for a distance backward of 8 or 10 mm. ( $\frac{9}{32}$  or  $\frac{3}{8}$  inch) from the edge of the hard palate contains practically no muscular fibers, being composed almost entirely of palatine aponeurosis. Therefore the anterior portion is much less movable than the rest of the soft palate. The tensor palati acts on this part of the palate, but as this is usually divided when the Langenbeck flaps are dissected up, it is not an important factor in causing separation of the wound margins. The posterior and large part of the soft palate contains muscular fibers in abundance and is freely movable, being the portion on which most of the palatine muscles act. The supporting or relaxation suture referred to follows the course of the palatoglossus muscle or constrictor isthmi faucium. As a rule, the use of this arch suture obviates the division of the levatores palati and palatopharyngei muscles. This affords a decided advantage, since the section of these muscles reduces the blood supply to the flaps and can have only a harmful effect on subsequent phonation.

The running knotted suture is introduced by passing a small curved needle bearing the long linen or hemp thread through the edge of the anterior palatine arch on one side near its base—that is, near the side of the tongue. The thread is drawn through to its middle and secured with a reef knot leaving the tail of the suture long. At a distance of 3 or 4 mm. ( $\frac{1}{8}$  or  $\frac{5}{32}$  inch) from the first or outermost knot the needle is again passed through the edge of the arch; the tail of the suture is taken up, and another reef knot tied. This process is continued around the anterior palatine

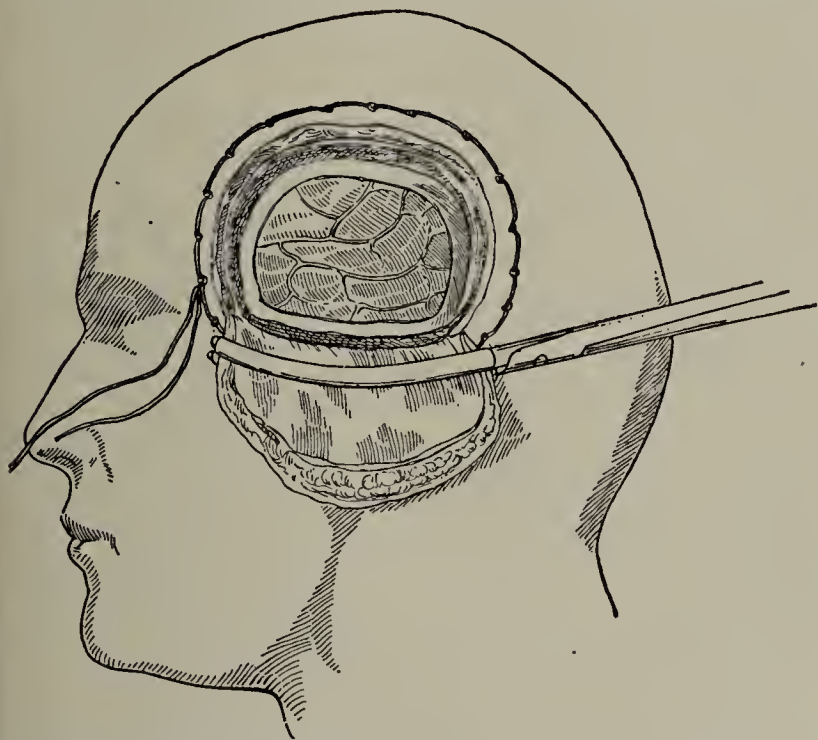


Fig. 11.—Circular running knotted loop suture to provide area of ischemia in cranial operations.

arch to its base on its opposite side, the suture crossing in front of the base of the uvula.

Such a suture immobilizing the anterior palatine arch reinforces the coaptation sutures against the traction incident to deglutition. In cases in which there has been failure of union in the anterior part of the soft palate, the use of the arch suture described has established union of the posterior part of the soft palate, followed

promptly by closure through granulation of the forward defect. Such a suture is much more secure than the mattress suture for the reason that tension is dis-

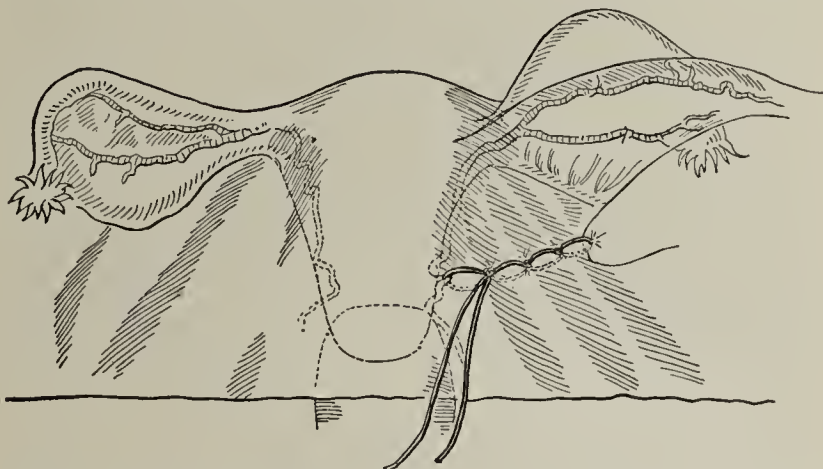


Fig. 12.—Running knotted loop suture used to tie off the broad ligament in subtotal hysterectomy.

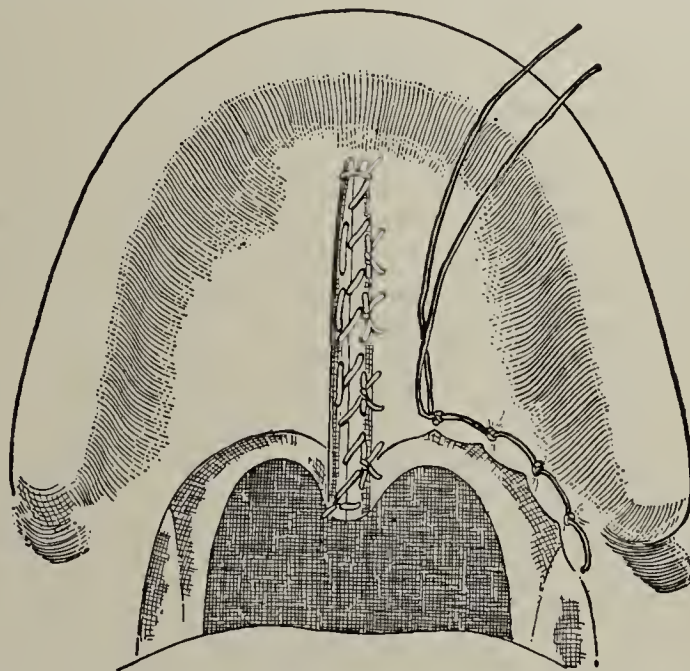


Fig. 13.—Running knotted loop relaxing tension in operation for cleft palate.

tributed over eight or ten points instead of but two, and the danger of cutting out is proportionally lessened.

331 North Delaware Street.

## DERMATOMYOSITIS, WITH REPORT OF TWO CASES \*

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We may define dermatomyositis as an acute, subacute or chronic disease of unknown origin, characterized by a gradual onset, with vague and indefinite prodromes, followed by edema, dermatitis and a multiple muscle inflammation.

The disease is generally ushered in with symptoms of malaise, anorexia, or pains in the extremities, and those in the prime of life and in the most vigorous health are usually affected. These symptoms may be of several days' or up to three weeks' duration. At onset, the pain is vague and is usually accompanied by rigidity in the extremities and back. Soon it is more definitely located in the muscles, which may be attacked successively in different locations until the whole mus-

2. Described in *Lancet*, Aug. 1, 1914.

\* Read before the Hartford County Medical Association, Nov. 1, 1921.



culature may be implicated. Later the pain increases in severity, being spontaneous in origin or occurring on voluntary motion. It is drawing, tearing or boring in type, causing the patient finally to become bedridden. About this time, the muscles become exquisitely sensitive to touch, and occasionally troublesome contractures are observed.

With the fever, edema appears which is not symmetrical in appearance and may invade the entire body and extremities. It is usually first seen above the eyelids or elsewhere on the face, and it produces an immobile cast of countenance. It is always observed in the extremities, the proximal parts being especially prone to involvement, while the wrist and ankle joints are usually spared. The edema may be either hard or soft in character, and may be localized over the affected parts or spread to surrounding areas.

An early symptom is a dermatitis, which is most protean in type, the eruption in different cases resembling an erythema, a pseudo-erysipelas, an urticaria, a roseola, an eczema, or an inflammation resembling erythema nodosum. It may invade the entire body or remain localized. Rarely, it occurs late in the disease. Whenever it is seen, however, it is almost always noted over the diseased muscles, and on disappearing may leave either no trace or a patch of pigment. In exceptional instances, the eruption may successively present two different types.

Fever is usually noted early in the disease, and is of moderate severity, intermittent or remittent in type. Profuse perspiration and an enlarged spleen are also usually present, and stomatitis or angina may be noted early or late in the affection. The involvement of the muscles of respiration and deglutition explains the number of fatal cases due to bronchopneumonia or suffocation. Paresthesia, as revealed by the feeling of formication, has been observed in four cases and, in the later stages of the disease, peculiar cramplike pains may be of frequent occurrence. The knee jerks and the electrical reactions may be diminished. The urine may be normal or may contain albumin with hyaline and granular casts. The duration of acute cases is from one to two weeks, the subacute from two to eight months, and the chronic forms from a year and a half to two years.

If, in the diagnosis of suspected cases, the edema, dermatitis and the progressive involvement of groups of muscles are borne in mind, a proper differentiation can readily be made. It is interesting to note that in one case scleroderma had previously been diagnosed, while another later proved to be a typical example of this condition. In a series of twenty-eight cases which I studied some years ago, seventeen had a fatal outcome; so the prognosis is grave. If the muscles of respiration and deglutition are involved, death may ensue from suffocation or bronchopneumonia. If the heart muscle becomes implicated, death invariably results.

Rest in bed, to cause the inflammation of the muscles to subside, is the main indication in treatment. Thermomassage at the onset or later, followed by massage, gymnastic exercises and electrotherapy, has been recommended by Oppenheim. Acetylsalicylic acid, the salicylates or morphin may be required for the pain, according to its intensity.

The subjoined case histories present two examples of this affection which I have seen recently:

#### REPORT OF CASES

CASE 1.—R. G. P., a girl, aged 3½ years, seen by me in Middletown, Oct. 24, 1920, in consultation with Dr. James T. Mitchell, complained of soreness throughout the body. She had had measles and impetigo contagiosa. September 5, some redness under both eyes and edema of the eyelids were observed by a physician, who diagnosed the condition as ivy poison and gave her treatment for it. September 18, she was first seen by Dr. Mitchell, who noted a dermatitis under her eyes and around her mouth. She also had some edema of the eyelids and face, which subsequently was transitory, coming and going with marked irregularity. Soon two blebs on the inner malleoli of both lower extremities developed, and a marked edema of the thighs was observed. Shortly thereafter, an eruption, bleblike in character, traveled up both lower extremities and to a lesser extent appeared on the back. Next, the arms exhibited marked edema, and muscle soreness was complained of when the patient was moved. About this time the two blebs on both inner malleoli opened spontaneously and discharged some seropus. October 17, a systolic heart murmur was detected. The bowels had been moved daily by medication. The urine was somewhat diminished in output, but otherwise was normal. The appetite was good. There had been no fever until September 24, and at no time had it been high. The muscle soreness had only occasionally been complained of until the patient went to bed, October 1. After this, the soreness became more marked, and during the last week of illness it was intense, on the slightest motion.

The patient was well built and well nourished, with a large patch of erythema about both eyes and the forehead; the face was markedly swollen and edematous, both eyes being partly closed. The thorax also was slightly swollen, but the lungs were negative. The heart was enlarged 3 mm. (one-eighth inch). No thrill was detected at the apex; but a well defined systolic murmur was here audible, and was heard, though less audibly to the back and upward to the base. The pulmonary second sound was slightly accentuated. The pulse was 160, regular in force and rhythm, and of good volume and tension. The abdomen was negative, but the arms were much swollen and edematous, except at the wrists. The legs were in like condition from the thighs down to the ankles. The ankles, however, were free and normal in appearance. The patient subsequently developed an attack of bronchopneumonia, and died, November 4.

CASE 2.—J. M., a woman, aged 45, seen by me in Middletown, Jan. 8, 1921, in consultation with Dr. James Murphy, had been admitted to the Middlesex Hospital, Dec. 24, 1920, complaining then, as also when I saw her, of stiffness and soreness in the arms and legs. The family history was unimportant; the patient had been remarkably healthy. She had had influenza in a mild form two years before. She had been married twenty-five years, and had had three children, two dying in infancy. She also had had two stillbirths, without any apparent cause. Two weeks before admission to the hospital she had caught cold, and on the following day had found that she could not move. She complained of marked soreness in the arms and legs, especially on palpation. The extremities soon became swollen and edematous, the arms apparently being first affected, the left sooner than the right. After two to three days, a papular eruption, which soon became vesicular and vanished, appeared over the abdomen. The bowels had been moved by medication daily.

The patient was stout and well built. The pupils were equal, but reacted sluggishly to light and accommodation. The tongue was coated with a thick white fur, and the teeth were in bad condition. The lungs showed a well defined area of bronchopneumonia at the left base. The heart was slightly dilated and revealed a soft systolic murmur over its area, loudest at the apex. The pulse was 100, regular in force and rhythm, and of good volume and tension. The extremities were markedly swollen and edematous. They were also extremely sensitive to pressure and on the slightest movement. The reflexes were absent. December 28, blood examination revealed: hemoglobin, 90 per cent.; red blood corpuscles, 4,450,000; leukocytes 9,500. A differential count gave: polymorphonuclears, 68 per cent.; lymphocytes, 28 per cent.; large mononuclears and transitionals, 3 per cent.; eosinophils,



1 per cent. Six days later, the leukocytes were 9,300, but no other change was noted. The Wassermann reaction was negative. The urine was negative, save for a trace of albumin. The renal function was 35 per cent. for the first hour, and 12.5 per cent. for the second hour, making a total of 47.5 per cent. Jan. 9, 1921, she complained of difficulty in swallowing. This symptom was more marked on the day following, when she became markedly cyanosed, and died suddenly by suffocation. During her stay in the hospital, the temperature varied from 100.8 to 101.6 F., until the last three days, when it steadily rose, being 106 F. shortly before death.

#### CONCLUSIONS

Dermatomyositis has previously been somewhat overlooked, but is a disease readily recognized if the definite symptoms of edema, dermatitis and a multiple muscle inflammation are properly considered.

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### THE RELATIONSHIP BETWEEN XEROPHTHALMIA AND FAT-SOLUBLE A\*

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This problem was taken up to determine, if possible, the relationship between the fat-soluble A vitamin and xerophthalmia, as well as other features present in the disease which might be etiologic factors in producing this condition.

Since the disease was first noted, many workers have attacked this problem from several different angles. The results obtained have varied in the extreme; thus, Emmet claims to have produced xerophthalmia in 120 out of 122 rats on the fat-soluble A free diet, or 98 per cent. Osborne and Mendel produced the condition in sixty-nine out of 136 rats, or approximately 50 per cent. Stephenson and Clark were successful to the extent of 28 per cent., and question the condition as a true deficiency disease. There have been many other observers whose results lay in between those above, some of whom apparently felt that the main factor in the disease was not the lack of fat-soluble A. Bulley summarizes his work by stating that, with the avoidance of initial infection, experimental animals can be kept almost entirely free of this so-called deficiency disease whether fat-soluble A be present or absent, and that it is dangerous to draw conclusions as to the fat-soluble A content of any diet from the appearance of xerophthalmia.

Wason, in a study of the pathology of the condition, states that no fundamental data concerning the etiology of ophthalmia in rats on deficient diets have been found by anatomic studies. Evidence by many observers leads to the belief that the condition primarily cannot be due to bacteria or to the degree of cachexia. Rats under the same hygienic conditions and on the same diet exhibit corneal changes, if at all, at varying intervals of time and degree; and in some cases considerable time elapses between the inception of the disease in the two eyes of an animal. She draws an analogy between the specificity of chloroform for liver cells, of mercury for the epithelium of the tubules of the kidney, of tetanus toxin for the nervous system, and of the absence of fat-soluble A to corneal lesions.

Along somewhat similar lines, except that the observations were on human beings, Black believes that xerophthalmia and dystrophy in young children is caused by deprivation of fat-soluble A, as is shown in

Denmark, where margarin was substituted for butter. Wells has made similar observations in Roumania. Hess and Unger state, with regard to rickets, that fat-soluble A is not the controlling factor, as infants develop this condition while on full diet, and that the danger to infants of a diet deficient in fat-soluble A is slight, provided it includes sufficient calories, and is otherwise complete. They further cite five infants, aged from 5 to 12 months, fed on a diet deficient in fat-soluble A for eight or nine months, who showed no anemia or eye or bone changes, and whose growth did not suffer. Their inference is that a very small amount of vitamin suffices human needs, and that deficiency has to be maintained for a period of years to bring about harmful results.

In my work, two groups of rats were used, the first fed on the standard ration of 18 per cent. protein (casein in which the fat had been extracted by means of alcohol, two washings, and ether, three washings) plus the other ingredients, salt mixture 5, cornstarch 100, autoclaved lard 30, yeast extract (Fleischmann's yeast extracted with alcohol and autoclaved, 5 c.c., and agar agar, 5 gm.). The rats were placed in cages so constructed of tin and wire netting that "relative" asepsis was possible, the cages being cleaned often.

The second group of rats was fed on a somewhat modified diet, as it was felt that possibly a small amount of fat-soluble A might have found its way into the food because of the method of preparing the casein. On this account the protein was reduced in amount from 18 to 9 per cent. for half of this group, and to 6 per cent. for the remainder. The amount of carbohydrate was increased 25 per cent. to see whether it had any bearing on the condition. The other ingredients in the food were used in the same proportion as in the first group. Two and sometimes three rats were placed in each cage.

The majority of the rats in the first group increased in weight for some weeks; then a small number began to lose weight and a few remained stationary, while the remainder, especially the heavier rats, gained in weight slowly—in fact, they seemed to thrive on this diet. In this group of sixty-four, five developed sore eyes, one case of which was monocular. The ocular condition developed not sooner than the sixth, and as late as the eleventh week. In all cases the body weight had begun to decline, and the rats were in such a weakened condition that soon after, from three to ten days, death ensued. Treatment of the eye by irrigation (mercuric chlorid, 1:3,000, protargol, 2 per cent.) did little to arrest the condition.

A somewhat similar result was obtained in the second group except that all rats lost weight more rapidly than those in the first group, and of the thirty-eight, six developed sore eyes. Two of these cases were monocular, and four were binocular. The rats succumbed much more quickly to this diet, in fact, 30 per cent. died after the first three weeks; but a few (six) lived on at a stationary weight despite the dietetic deficiency, showing no signs of xerophthalmia throughout the test.

As soon as the ocular condition began to manifest itself, smears and cultures were made with the result that the organism present was found to be a large coccus, not unlike an attenuated staphylococcus. Attempts were made to transfer from the diseased rats' eyes to those on the same diet, and in the cases of monocular disease from one eye to the other with no result. The eyes of the diseased rats were removed, placed in formaldehyd solution, and later sectioned and stained. The cornea was the only tissue showing

\* From Hull Physiological Laboratory, University of Chicago.



marked changes, and those consisted of infiltration of lymphocytes into the epithelium, Bowman's membrane and in some cases the interstitial layer.

After such nearly negative results as I obtained, and after summarizing the results of others, I am moved to ask these questions:

Is there a definite relationship of fat-soluble A to xerophthalmia, and is it the controlling factor as some would have us believe, or is the lack of fat-soluble A only an "accessory after the fact"? If the first assumption is true, then why not the ability to produce the disease readily and in all cases? If the latter assumption is true, what is the real underlying factor causing the disease? It is admitted that certain conditions are usually necessary, i. e., the low protein diet and secondary infection; but even with these present the disease does not develop in the greater majority of instances. Further, it has been noted by several observers, as by myself, that the disease at times involves only one eye, and that inoculation of the sound eye with the discharge from the other fails to incite the condition. Can the lack of sufficient fat-soluble A, then, be responsible for such an apparently inconsistent result?

Somewhat akin to the work and results on animals are the observations on children who have developed dystrophy, rickets or phlyctenular disease. As has been noted, these conditions apparently are cured by means of food containing sufficient fat-soluble A in some cases, while in others the lack of fat-soluble A in the diet even over a long period has no effect. In the same category are the underfed and ill nourished children of the ghetto, some of whom develop phlyctenular disease, while brothers or sisters in the same family and living under the same condition fail to show any manifestation. It may be added that, from my personal experience in a large clinic, many of these cases are stubborn, responding very slowly if at all to increase of fat-soluble A in milk and the curtailment of carbohydrates.

What, then, can be the factor or factors which cause a disease which manifests itself only at times under the same condition? Is it that there is an hereditary predisposition or idiosyncrasy?

This possibility was suggested to me by Prof. A. J. Carlson during the progress of this work. Guyer's experimental work on hereditary eye defects may be cited wherein he has transmitted through many generations certain specific ocular anomalies. The most significant fact from a biologic standpoint is that specific antibodies can induce specific modification in the germ cell, and the whole question hinges on whether changes in an animal's tissue will induce the formation of antibodies or kindred active substances in its own body. It is rational to assume that changes in various parts of the body may occasionally influence the representatives of such parts in the germ cells borne by that body. Therefore is it not within the limits of reason to assume, in the face of evidence pro and con relative to the etiologic factor or factors in xerophthalmia, that hereditary predisposition is the base, and that lack of sufficient fat-soluble A or low protein diet, combined with infection, will bring about the disease? If this assumption is true, most of the anomalous or erratic manifestations can be explained under it.

#### SUMMARY

1. The lack of the fat-soluble A vitamin produces xerophthalmia in a variable percentage of experimental animals.

2. Since lack of this vitamin in combination with a low grade infection does not induce the disease in all animals, there is obviously another factor, or factors, not yet worked out.

3. Hereditary predisposition might explain the widely variable and anomalous results obtained by workers in this field.

## CHAULMOOGRA OIL IN THE TREATMENT OF TUBERCULOUS LARYNGITIS

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Chaulmoogra oil has been used with considerable success in the treatment of leprosy, and recently experiments have been made on tuberculous animals; but to the best of my knowledge, it has not been tried on the laryngeal lesions of human subjects. My attention was first called to this oil as a possible remedy in the treatment of tuberculous laryngitis by Dr. John I. Fanz.

Chaulmoogra oil treatment was begun, Feb. 4, 1921, at the Department for Diseases of the Chest of the Jefferson Hospital and at the Henry Phipps Institute of the University of Pennsylvania. This report gives the results of sixty cases treated over a period of eight months. The treatment has been conducted more to learn the effects on the pathologic lesions of the larynx and the symptoms than on the tubercle bacillus itself, for laboratory studies have shown that this oil is not a tubercle bacillicide.

Chaulmoogra oil gave promising results from the beginning in cases in which there were dysphagia and pain in the throat. Other oils used proved simply emollient; while chaulmoogra oil, in the majority of cases, exerted an analgesic action on the larynx which became more complete after repeated treatments. While improvement in the lesions is slower than was hoped for, yet cases treated with chaulmoogra oil have responded as rapidly as those treated with other drugs, and the treatment is much more easily borne. Preliminary cocainization has not been necessary, and there has been no pain or discomfort in the throat afterward, but rather a pleasing sensation of warmth in the throat and chest. In the cases in which intratracheal injections were made, sputum was rendered more fluid and was expelled with greater ease. Dryness of the throat, which frequently is present in tuberculous laryngitis, was improved but slightly in the majority of cases.

At first the oil was applied by means of a cotton tipped applicator saturated with a 10 per cent. solution in liquid petrolatum directly to the laryngeal surface. Following this there was no pain or discomfort except a slight momentary cough. Later the strength was increased rapidly up to the pure drug.

Chaulmoogra oil works best by intratracheal and intralaryngeal injection. One cubic centimeter of the oil, of the strength desired, usually 10 or 20 per cent. in liquid petrolatum or olive oil, is drawn up in a Luer syringe armed with a metal eustachian catheter. While the patient holds the tip of the tongue, wrapped in a paper napkin, between the index finger and the thumb



of the right hand, the syringe tip is introduced, guided by the throat mirror, into the pharynx (not the larynx) above and behind the epiglottis, care being taken not to touch any portion of the mouth or throat. Two thirds of the contents of the syringe is discharged, drop by drop, into the trachea while the patient breathes quietly. The remainder is then dropped on the cords while the patient phonates. In this way, cough following injection is very slight and often absent. When present, it occurs within five minutes after the injection and lasts for a minute or two.

#### REPORT OF CASES

The two cases here reported are fairly typical as to results, and are cited because the laryngeal lesions were extensive, and prognosis for a cure and for relief from dysphagia was very unfavorable.

CASE 1.—A man, aged 58, complained of severe cough, marked hoarseness and pain on swallowing, especially for liquids. Physical examination revealed advanced pulmonary tuberculosis. The sputum contained tubercle bacilli; the Wassermann test was negative. The epiglottis was negative; the vocal cords ulcerated in the posterior two thirds; there were marked infiltration and extensive shallow ulceration of the ventricular bands; the interarytenoid fold was thickened and covered with large papillary excrescences; the arytenoids were infiltrated and about three times their natural size. The patient was bedfast.

Treatment from Sept. 20, 1920, to Jan. 31, 1921, consisted of applications of formaldehyd solution and lactic acid in ascending strengths, iodoform, iodine in glycerin, and argyrol. The tuberculous outgrowths on the interarytenoid fold were removed twice with a laryngeal punch, but recurred both times. Improvement was very slight. When the chaulmoogra oil treatment was started, February 4, subjective symptoms were relieved almost at once. The distressing cough, due to the difficulty in raising tenacious sputum, was relieved after the first treatment and the sputum rendered more fluid. In less than a week the pain was gone and has never recurred. In three months' time the ulcerations disappeared. The vegetations on the interarytenoid fold slowly diminished in size and finally disappeared, until at the present time the infiltrated tissues are greatly reduced in size and the mucosa is smooth and clean. Hoarseness is still present, but greatly improved. The patient left the hospital three months ago and is being treated twice a week in the dispensary, practically an arrested case.

The second case illustrates the chief value of the oil, namely, relief of dysphagia.

CASE 2.—A woman, aged 34, complained of constant pain in the throat and excruciating dysphagia. Physical examination revealed far advanced pulmonary tuberculosis. The sputum contained tubercle bacilli; the Wassermann test was negative. The lesions in the larynx were most marked on the epiglottis and the arytenoids. The interior of the larynx could not be observed because of the size of the epiglottis, which was of the turban variety with a large ulceration extending backward and involving the left arytenoid. Prognosis for a cure (pulmonary) was hopeless, and the most we could hope for was to relieve the pain and dysphagia, which began in December, 1920. The patient was admitted to the hospital dispensary, Jan. 14, 1921. Local applications of the usual drugs were made, and anesthetic lozenges were used. Improvement was unappreciable, the pain and dysphagia remaining the same. February 8, 5 per cent. chaulmoogra oil in liquid petrolatum was applied locally to the larynx. Three days later, the patient could swallow more easily, although the constant pain still remained. Thirteen days after the initial treatment the pain and dysphagia were so much improved that she was eating and relishing her meals. One month later pain, dysphagia and dryness of the throat were absent. Neither cocaine nor morphine was used at any time. By the middle of March, the interior of the larynx could be seen, showing marked infiltrations of the ventricular bands

and the interarytenoid fold; the ulcerations on these structures were very shallow. Edema of the epiglottis was greatly reduced, although the large ulceration, while healthier in appearance, was still of a fairly good size. There had been a slight gain in weight. Cough was less and the sputum reduced in quantity and very easily raised. Later she developed a large superficial ulceration of the pharynx involving the right tonsil and the right side of the uvula, which has proved rebellious to treatment. The laryngeal lesions, after reaching a certain point, remained stationary for a time, while the pulmonary condition became more grave. The arrest of improvement was attributed in part to the beginning of pregnancy with associated gastric disturbances. At the present time the patient is losing ground, although the laryngeal lesions remain almost stationary.

Considering the extent, severity and location of the throat and laryngeal lesions, it is remarkable that pain and dysphagia have been abolished. Chaulmoogra oil has been used three times a week, and occasionally a period of four to six days elapsed between treatments, but at no time did pain or dysphagia return.

#### CONCLUSIONS

1. The chief value of chaulmoogra oil is in the relief of pain and dysphagia.
2. The relief is continuous, in contradistinction to that produced by cocaine.
3. The treatment is not unpleasant or distressing, is without untoward reactions in the larynx, and can be used without previous cocaineization.
4. Improvement, while not all that could be desired, seems better than that obtained with other drugs.

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### ACETYLSALICYLIC ACID IN SODIUM CITRATE SOLUTION \*

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Acetylsalicylic acid ("aspirin") is dispensed in dry condition because it is easily decomposed in the presence of moisture; also it is insoluble in water. However, articles have appeared recently in both medical and pharmaceutical literature claiming that acetylsalicylic acid may be dispensed *in solution* by aid of sodium citrate; also that the acetylsalicylic acid would not be decomposed. For instance, the following, which was probably abstracted from some American pharmaceutical publication, appeared in the *Prescriber*:<sup>1</sup>

Acetylsalicylic acid (aspirin) is practically insoluble in water, and though soluble in alcohol such a solution is not generally suitable for administration. It is therefore usually given in tablets or cachets. Solution may be effected by addition of sodium bicarbonate, but as the resulting solution is merely a mixture of sodium acetate and sodium salicylate, this method is not admissible. It is said that sodium citrate will dissolve acetylsalicylic acid without dissociation: for each grain of aspirin 4 grains of sodium citrate should be added. Such a solution, flavored with syrup of lemon, is suitable for administration to children.

The usual test for decomposition of acetylsalicylic acid is the detection of the freed salicylic acid by means of ferric chlorid solution. It occurred to me, therefore, that possibly such a test was used as a basis of the contention of the nondecomposition of acetylsalicylic acid in sodium citrate solution. If so, the seemingly negative reaction obtained may be misinterpreted, because citric acid, and citrates, interfere with the sensitiveness

\* From the Chemical Laboratory of the American Medical Association.  
1. Solvent for Acetyl-Salicylic Acid, *The Prescriber*, June, 1921, p. 247.

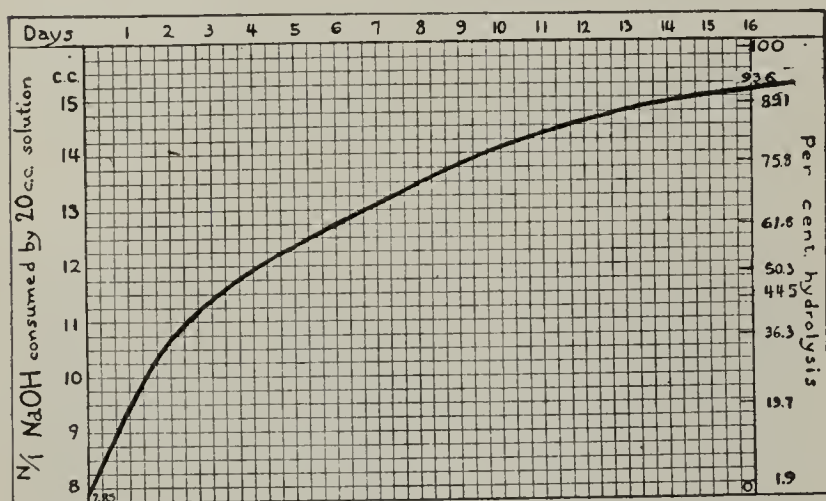


of the test, and hence it would not be reliable in the case at hand. To test this hypothesis, a solution was made up and the rate of hydrolysis determined by titrating with normal alkali during stated intervals. The solution was prepared by dissolving about 18 gm. of pure acetylsalicylic acid and 72 gm. of sodium citrate in 240 c.c. of water; after standing three hours it was filtered, and 20 c.c. used for the individual determinations. One teaspoonful of such a solution would represent about 5 grains of acetylsalicylic acid. The results of the titration will be found in the accompanying table. The solution was maintained at room temperature.

## RESULTS OF TITRATION

Interval of Time	C.c. of N/1 NaOH Consumed by 20 c.c. of Solution
3 hours .....	8.0
1 day .....	9.4
2 days .....	10.7
3 days .....	11.35
3½ days .....	11.80
6 days .....	12.70
9 days .....	13.80
14 days .....	14.85
17 days .....	15.20
Complete hydrolysis .....	15.70

As will be noted in the accompanying chart, acetylsalicylic acid is hydrolyzed fairly rapidly in sodium citrate solution, over 50 per cent. decomposed in four days, and 75 per cent. in nine days. Thus, a patient taking such a mixture which was 9 or more days old



Hydrolysis of acetylsalicylic acid in sodium citrate solution.

would be getting essentially the same ingredients as if sodium acetate and sodium salicylate had been used in place of the acetylsalicylic acid.

Obviously, the assertion that acetylsalicylic acid is not broken down to form salicylic acid and acetic acid (or their salts) is not based on scientific work.

The hydrogen ion concentration of the citrate solution alone was  $p_H = 9.0$ ; after addition of acetylsalicylic acid, it was  $p_H = 5.4$ ; after seventeen days it was  $p_H = 4.6$ . Thus it may be seen that the solution is appreciably acid, sufficient to decompose hexamethylenamin, with which it has been recommended to be dispensed.

Very recently 1 part of potassium citrate has been suggested in place of 4 parts of sodium citrate. Such a solution would hydrolyze, if anything, faster than one made with a higher concentration of the sodium salt.

## CONCLUSION

It has been claimed that acetylsalicylic acid may be dispensed in a solution of sodium citrate without decomposition of the acetylsalicylic acid. The experi-

ments here reported show that this is incorrect; that after four days the acetylsalicylic acid is broken down to the extent of 50 per cent.; after nine days, to 75 per cent., and that in seventeen days it is almost completely hydrolyzed.

BACILLUS WELCHII IN A PUBLIC  
WATER SUPPLY

AS A POSSIBLE CAUSE OF INTESTINAL DISEASE

HERBERT B. LARNER, S.B.

Health Officer  
MONTCLAIR, N. J.

The Montclair Board of Health, through the public press and by means of printed handbills, Feb. 15, 1921, issued a warning to the citizens of the town advising that all water obtained from the public supply be boiled before being used for drinking purposes. The facts that led to the issuance of this notice are worthy of scientific record, as it was the first time, so far as I can discover, that such a notice has been issued under similar circumstances.

The water served to Montclair and several neighboring municipalities is obtained from the highly polluted Passaic River at Little Falls, N. J., sufficient reason in itself, according to the late William T. Sedgwick, to condemn the water on grounds of common decency if for no other reason. At Little Falls the water is subjected to treatment by rapid sand filtration and liquid chlorin, in a purification plant that has been approved by eminent sanitary engineers. From this plant, the water is pumped to a small reservoir, which provides very little storage, and is finally fed by gravity to the town of Montclair, a municipality of about 30,000 inhabitants.

## RESULTS OF ANALYSES

Daily bacteriologic analyses of the town water were begun, Nov. 29, 1920, in the newly acquired laboratory of the board of health under my direction. The Treasury Department method was adopted with the slight modification of incubating the lactose broth fermentation tubes seventy-two hours at 37.5 C. instead of forty-eight hours. No gas production was evident in any of the tubes inoculated with 10 cubic centimeter samples of water at the expiration of twenty-four hours' incubation and only in a very few at the end of forty-eight hours. When, however, the tubes were held for seventy-two hours at 37.5 C., a striking change was noted. In the majority of the tubes a rapid evolution of gas was evident in amounts varying from 50 to 100 per cent., accompanied by foaming and a very pronounced odor of butyric acid. Transferring a loopful of the culture to a Petri dish, and pouring an Endo plate about one-fourth inch (6 mm.) deep and then incubating for twenty-four hours at 37.5 C. resulted in the formation of bright red colonies, surrounded by bubbles of gas in the deeper portion of the plate. Frequently, gas formation was such as to tear the medium to pieces. Fishing a colony from the deep part of the plate and transferring to a tube of sterile whole milk, recently boiled to drive off dissolved oxygen, and then incubating for twenty-four hours at 37.5 C., resulted invariably in the production of the "stormy fermentation" so characteristic of the organism known as *Bacillus welchii*, which the organism under consideration was finally decided to be.



In view of the unsatisfactory state of knowledge concerning the pathogenicity of this organism, as found in water supplies, the board of health hesitated to take any action which might unnecessarily alarm the people, and it therefore appeared advisable to await developments, especially since there was no telling how long the organisms had been present in the water and had been consumed with no ill effects so far as known.

A specimen of feces from a sick person was submitted by a physician, Feb. 9, 1921, for laboratory examination. The patient was a child, aged 8 years, and the diagnosis much in doubt. The clinical symptoms as described by the physician were "considerable fever, exhaustion, gas production in the intestines but no diarrhea, stools watery and containing much mucus, and with an extremely foul, sour odor." A bacteriologic examination revealed only a few *B. coli*, they having been almost completely displaced by an organism that was present in tremendous numbers and which was similar to, if not identical with, the organism we had been finding almost daily in our water supply. The organism found in the feces under examination fermented lactose broth medium with the production of gas varying in amount from 75 to 100 per cent., accompanied by a strong odor of butyric acid. When Endo plates were poured, gas was produced in the deeper parts of the plates after twenty-four hours' incubation in such quantities as to tear the medium to pieces. Inoculated into sterile whole milk, the typical "stormy fermentation" characteristic of *Bacillus welchii* was produced.

#### INTESTINAL DISTURBANCES

On inquiry among the medical profession, of thirty physicians interviewed, seventeen had seen 187 cases of intestinal disorder within the preceding few weeks. Not all of the cases presented the same symptoms, nor were they confined to any particular age group or section of town. The symptoms included fever, vomiting, diarrhea, intestinal fermentation and headache. One physician, on being interviewed, reported fifty cases; and another, who reported twelve, volunteered the information that the town water was responsible, although he had no means of knowing that our suspicions were directed toward the water supply at this time. Asked his reason for such a belief, he replied that all of his cases "cleared up in two or three days after they were put on boiled water but without any additional treatment." After carefully considering the facts presented above in connection with the laboratory results obtained, the board of health, as a matter of precaution, issued the boiling notice already referred to, and this action has given rise to considerable discussion in engineering and medical circles.

It is recognized, of course, that the facts as already stated do not by any means constitute satisfactory evidence that the organism *Bacillus welchii* caused the cases reported, and yet it is extremely significant that those cases which occurred in February, 1921, had many points in common with approximately 2,000 cases of intestinal disease which occurred in Montclair in January, 1918.

At that time, entirely without warning, the people of Montclair were supplied with unfiltered water which had received only chlorin treatment. This procedure was necessitated because of the fact that a federal order required that Jersey City be supplied with an additional quantity of water. The total amount of water required of the Little Falls plant therefore exceeded its maximum filtering capacity, with the result that unfiltered water was used.

Immediately following the introduction of this supply into the mains, the 2,000 cases of intestinal disease already referred to occurred with explosive violence. None of the cases terminated fatally; indeed, many of them were not sufficiently severe to require medical attention, and not a single case of typhoid accompanied them. Laboratory analyses made of the town water at that time disclosed large numbers of *Bacillus welchii*, however, which, being of a more resistant nature than *Bacillus coli*, had survived chlorination. At the time there were persons who scouted the contention of Dr. Charles E. North and others that the cases were of bacterial origin, and in its place advanced the theory that increased pressure in the pipes had caused the stirring up of organic matter contained therein, which was the responsible agent. There can be little doubt in the minds of most of those who are conversant with the facts of this epidemic that a micro-organism of more than ordinary resistance was the causative agent; and it would seem to be a not unreasonable suggestion that *B. welchii* might well be the one concerned.

#### RÔLE OF BACILLUS WELCHII

In connection with the 187 cases of intestinal disturbance that were reported early in 1921, additional facts have recently been brought forward which have strengthened my belief in the *B. welchii* theory.

In a paper read before the Associated Physicians of Montclair, March 8, 1921, entitled, "Cases Illustrating the Gas Bacillus Infection in Children," Dr. Elizabeth Mercelis considered the case records of five children selected from a large practice. The cases under consideration had been treated at different times during the period 1918 to 1921. In all of the cases the presence in the stools of large numbers of an organism which is referred to as the "gas bacillus," but which had many points in common with *B. welchii*, was conclusively demonstrated by laboratory tests. Efforts directed toward the elimination of this organism invariably resulted in rapid recovery; and when relapses occurred, an increase in number was found to have resulted. In summarizing her remarks, Dr. Mercelis says:

I have selected these five cases as illustrative of very different clinical conditions, dependent apparently on the same causative agent.

The patients vary in age from 1 month to 6 years, and in home environment from that of the most squalid Italian tenement to that of our best homes. The infection is therefore independent of insanitary conditions.

CASE 1.—A frail infant, without marked gastro-intestinal manifestations, but so unable to withstand the irritative products resulting from bacterial growth that it was practically moribund when treatment began.

CASE 2.—Resembling an acute autointoxication, as from any other cause.

CASES 3 and 4.—Subacute in type, insidious and increasing ill health rather than any specific outbreak.

CASE 5.—This pointed to severe reaction of the nervous system dependent upon irritative products in the intestinal tract.

At the same meeting, Dr. James T. Hanan of Montclair considered gas bacillus infection in adults. After a review of thirty-eight case records of persons suffering from various disorders of uncertain character, but in whose intestines excessive numbers of the gas bacillus were present, Dr. Hanan stated that treatment directed toward the elimination of the organisms invariably resulted in the patient's recovery. He also expressed the opinion that many subacute and chronic



illnesses are the result of overgrowths of *B. welchii* in the intestines.

A number of arguments have been advanced in opposition to the suggestion that the town water was the cause of the cases reported in February, 1921. It has been stated that *B. welchii* is frequently found in milk, and that an infected milk supply might have been the cause. Admitting this possibility, however, would not weaken our contention, since the real point at issue is whether or not *B. welchii* does harm to the human system irrespective of whether it is present in water, milk or, in fact, in any food. The excellent typhoid rate of Montclair has been cited as being indicative of a safe water supply. It is suggested in this connection that statistics and especially typhoid rates do not always tell the whole story. Not a single case of typhoid followed the 2,000 intestinal cases that occurred in 1918. The typhoid rate for that epidemic is therefore zero, yet there is no doubt in my mind that the unfiltered water was the cause of the outbreak. It is urged that the wide distribution of *B. welchii* in water supplies argues against the organism being the cause of intestinal disease. I consider this fact, if true, a good argument in favor of the guilt of the organism, however, as hardly a year passes that we do not get reports, from various parts of the country, of outbreaks of intestinal disease the cause of which is in doubt, although the evidence frequently points to water. Some waterworks men have expressed the opinion that *B. welchii* has no sanitary significance. It seems to me, however, that such persons are treading on rather thin ice when they assert that an organism acknowledged to be a frequent inhabitant of the intestinal tract has no sanitary significance when found in water supplies. It has been argued that the small number of cases reported in 1921 disproves the contention that the town water was responsible, since, in the 1918 epidemic, nearly 2,000 cases were reported, and since our laboratory tests for January and February, 1921, showed the presence of *B. welchii* almost continuously. In answer to this it must be stated that the organisms were much more numerous in the water in 1917-1918 owing to the failure of the water company to filter the water. That a group of people by continued use of a polluted water may build up an immunity to it is not improbable, and that an increase in pollution may break down the acquired immunity of a certain percentage of the group is also quite within the bounds of possibility.

That the Montclair case is not the only one in which a municipal water supply has been considered unsatisfactory because of the presence of *B. welchii* is evidenced by the testimony of D. D. Jackson in 1909 in *Mayor and Aldermen of Jersey City v. Jersey City Water Supply Company* in chancery of New Jersey. Jackson developed a presumptive test for *B. welchii* and demonstrated this organism in considerable numbers in the Jersey City water. As a result of investigations which he made, Jackson testified that in his opinion the presence of *B. welchii*, or, as he called it in his testimony, *Bacillus enteriditis-sporogenes*, indicated pollution and rendered the water unpotable.

#### WATER PURIFICATION

While the filtration and chlorination of public water supplies has effected a gratifying decrease in the typhoid rate of the country, it would be a great mistake to feel that the last word has been said on the subject of water purification. The reduction of typhoid fever should not be permitted to obscure the issue so far as other water-borne diseases are con-

cerned, and it is becoming more and more evident as outbreaks of intestinal disease are studied that investigation of this subject offers a fertile field for activities. There is no doubt that many of the leading waterworks engineers appreciate this fact, as the following quotations taken from the *Engineering News-Record* indicate:

Mr. Theodore Horton, chief of the Bureau of Engineering of New York State says:

The more I study outbreaks of gastro-enteritis the more I am convinced that most of them, at least, are water-borne. Whether it is infection by *B. welchii* or some other bacterium, or infection by a protozoan, or whether the trouble is due to irritation from physical, chemical or organic substances I do not know, but I am inclined to think that a specific organism is the cause.

Mr. J. W. Ellms, a sanitary engineer in charge of the water filtration plant at Cleveland, and a waterworks man of international reputation, says:

My confidence in public water supplies that have been chlorinated only has been shaken considerably of late. The *B. coli* test does not seem to tell the whole story of pollution, and we may yet be forced to extend routine work for the isolation of bacilli found in polluted waters. Typhoid fever is rather heavily leaned on in judging a public water supply, which is, of course, quite proper; but I believe that we must also give a great deal more weight to other intestinal troubles, especially gastro-intestinal troubles in infants.

Mr. W. H. Dittoe, chief sanitary engineer of the Ohio State Board of Health says:

We believe no gas formers should be found in 10 c.c. of filtered or ground waters. We do not consider it necessary to differentiate between *B. coli* and *B. welchii*, as either form would cause gas in broth incubation and indicate an unsatisfactory water.

Samuel C. Prescott, professor of industrial microbiology at the Massachusetts Institute of Technology, Cambridge, says:

I am strongly of the opinion that heavy infection of water with *B. welchii* may give more or less serious intestinal troubles, such as we had in Cambridge for a day or two in 1920.

If it is finally concluded that the Welch bacillus is an undesirable organism in water supplies, we shall have to revise our ideas considerably as to what constitutes a potable water. The inability of chlorin in the usual amounts effectively to destroy the spores of the organism, as already conclusively demonstrated in the water supply of Montclair, indicates that for the complete removal of the organism we must look to the construction of more effective filters, since the Little Falls filters are conceded to be as good as any that are being constructed at the present time, and assuming that they are being operated to the best possible advantage. In lieu of more efficient filtration, we must draw the line at using a water supply which contains the organisms in such numbers as to render their removal impossible by such filters as are in use today and with chlorin treatment in addition.

It is unfortunate that certain engineers and water plant operators have apparently, with very slight knowledge of the matter, dismissed the charges against *B. welchii* with statements to the effect that the organism is harmless, and with a promptness which does not indicate an open mind in the matter.

Engineers and water plant operators have, as a general rule, no qualifications which would enable them to



determine whether or not *B. welchii* is harmful. The question of the pathogenicity of the organism is entirely a medical one; and until qualified experts, having medical training, have thoroughly studied the effects of the organism on the human body and have decided the question one way or the other, we should be extremely cautious, in my opinion, about accepting as potable a water which contains the organisms in any such quantities as they have been demonstrated in the water served to Montclair.

## Clinical Notes, Suggestions, and New Instruments

### A GUINEA-PIG, RAPID METHOD FOR THE DIAGNOSIS OF TUBERCULOSIS\*

H. R. MILLER, M.D., NEW YORK

This method for demonstrating tubercle bacilli in pure culture is applicable, diagnostically, for specimens (sputum, urine, etc.) which may contain the usual nonacid fast microorganisms as a secondary contamination; it serves, also, as an effective means of differentiation between tubercle bacilli and acid fast bacilli nonpathogenic in character.

The specimen in question is first treated with a small quantity of weak alkali, enough to make a thin, rather nonviscid fluid if tenacious sputum is used, for instance. If urine is to be examined, its thoroughly centrifuged sediment is treated with alkali. Alkalis, such as weak antiformin or 3 or 4 per cent. sodium hydroxid, are employed. From thirty to sixty minutes later, after one drop of a 1 per cent. phenolphthalein solution as an indicator, normal acid is added cautiously until a neutral point is reached. To this practically neutral, sterile solution, dye (gentian violet) is added in approximately 1:3,000 or 1:5,000 dilution.

A 20 or 22 gage needle is thrust into the liver of a guinea-pig. This is not difficult. The median line very close to the flare of the ribs or a point bisecting the right hypochondrium may be chosen as a site for the injection. Regular respiratory oscillations of the needle indicate that it is lodged in the liver. From 1 to 1.5 c.c. of the dye-colored, neutralized solution is now injected. All manipulations should be done aseptically. Guinea-pigs are readily inoculated in this manner; they require no anesthesia and, apparently, show little if any discomfort. From twelve to sixteen days later, they are examined postmortem. Macroscopically there is, as a rule, distinct evidence of tuberculosis in the liver and spleen. If there is any doubt as to the nature of the lesion, a portion of the liver is sectioned and treated with Ziehl-Neelson stain. Tubercle bacilli are then readily observed lying in scattered, discrete areas of newly formed cells (endothelial).

We have carried out this procedure in eighteen guinea-pigs. Tubercle bacilli in the stained section of the liver were noted as early as eleven days after injection. Earlier than this time we have, as yet, made no examinations. Evans, Bowman and Winternitz,<sup>1</sup> however, injecting pure cultures of tubercle bacilli intravenously into guinea-pigs, found in the livers of these animals, as soon as thirty-six hours after inoculation, tubercle bacilli and lesions which they interpret as tubercle formation. We plan later an attempt to introduce intravenously specimens for diagnosis, treated by preliminary alkalization, neutralization, and the use of dye. At this time we wish to report that we have used this method in eighteen guinea-pigs, employing sputums from tuberculous patients, all containing tubercle bacilli in varying amounts. Tubercle bacilli were demonstrated in the livers of these eighteen guinea-pigs.

The method outlined will possess clinical practical value only if it will serve to demonstrate tubercle bacilli in the

guinea-pig after inoculation from specimens in which tubercle bacilli could not be discovered during prolonged and diligent search; it is, therefore, offered for clinical criticism.

Since this work was carried out we came upon the reference of Oppenheimer,<sup>2</sup> who carried out intrahepatic inoculation for the diagnosis of tuberculosis. Many of his animals, however, developed mixed infections. This difficulty is avoided by the preliminary alkalization, neutralization and the use of dye—procedures which have proved practical and reliable in the hands of Petroff for the growth and cultivation of tubercle bacilli.

266 West End Avenue.

### THE PREPARATION OF FOOD ALLERGENS IN TABLET FORM FOR THE INTRACUTANEOUS TEST

BRYCE W. FONTAINE, M.D., MEMPHIS, TENN.

Most writers agree that the intracutaneous administration of food allergens is superior to the older cutaneous method. I. Chandler Walker, however, still adheres to the cutaneous test.

Duke's<sup>1</sup> recent article on food allergy as a cause of abdominal pain is interesting, and his technic practical. His directions, however, are rather indefinite as to accuracy in the amount of allergens used. In following his method of measuring 0.1 mg. of the allergen used, one is likely to get from one half to twice the amount desired.

With a view to obviating this possible inaccuracy, it occurred to me that the allergens could be accurately weighed and put up in water-soluble tablets, each weighing one-half grain. With the assistance of Mr. Karl Wood, a pharmaceutical chemist of this city, I have been enabled to put my idea into a tangible and practical form.

This tablet, in addition to the allergen or allergens, contains sufficient sodium chlorid and sodium sulphate to make an isotonic salt solution when dissolved in 0.1 c.c. of warm water. The bulk of the tablet consists of sodium sulphate, as it is considered one of the best excipients for use in the preparation of hypodermic tablets.

I have grouped eight closely related allergens in one tablet in the following manner: In each tablet there is 0.1 mg. of each of eight allergens, and sufficient sodium chlorid and sodium sulphate to make a tablet weighing one-half grain, and making an isotonic salt solution when dissolved in 0.1 c.c. of warm water. A second set of tablets is made as above, but each tablet contains only one allergen, with sodium chlorid and sodium sulphate. A third set of tablets contains only sodium chlorid and sodium sulphate, weighing one-half grain and making an isotonic salt solution when dissolved in 0.1 c.c. of warm water.

The idea of grouping the allergens in order to avoid so many injections was suggested to me in a recent conversation with Duke; and, in attempting to develop the technic, the idea of the tablet occurred to me. Duke suggests in his technic the use of a Luer tuberculin syringe, with a needle of 27 or 28 gage.

In carrying out the test, one of the tablets containing only sodium chlorid and sodium sulphate should be dissolved in 0.1 c.c. of warm water, and given intracutaneously, as a control. Then one of the tablets containing the combined allergens should be dissolved in 0.1 c.c. of warm water, and be given intracutaneously. If a reaction occurs, the allergens should be given separately, by using the tablets containing the single allergens comprising the group in the combined tablet. These individual allergens are injected, one at a time, until the specific allergen is indicated by the appearance of a positive reaction. The readings in these reactions can be taken as in the cutaneous tests. A positive reaction usually appears as early as twenty minutes, and sometimes persists for twenty-four hours.

The chief advantage in the use of these tablets is the absolute uniformity in the dosage of the allergen, thereby assur-

\* From the Department of Bacteriology, Columbia University College of Physicians and Surgeons.

1. Evans, Bowman and Winternitz: J. Exper. Med. 19: 283, 1914.

2. Oppenheimer, R.: Ztschr. f. Urol., 1911, supplement, pp. 122-125; Deutsch. Gesellsch. f. Gynäk., 1911.

1. Duke, W. W.: Food Allergy as a Cause of Abdominal Pain, Arch. Int. Med. 28: 151 (Aug.) 1921.



ing accurate and reliable results. These tablets give an unvarying and accurate quantity of the allergen in an isotonic salt solution. They are stable and should keep indefinitely. The cost is negligible, and they can be made by any competent pharmacist.

There is no doubt that the intracutaneous method of using these tests is of much greater value than the cutaneous method, and in adopting a simple, reliable uniform technic, I believe they can be made a valuable aid in our routine work.

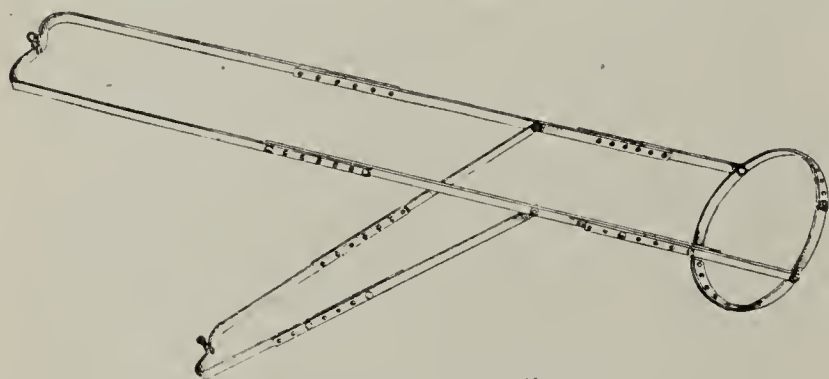
A very serious objection to the older method has been the numerous positive reactions obtained. This error might have been due to the fact that excessive quantities of the allergens were used.

1109 Central Bank Building.

#### A UNIVERSAL THOMAS SPLINT

FREDERICK C. WARNSHUIS, M.D., GRAND RAPIDS, MICH.

The value of a Thomas splint in the treatment of fractured femurs, tibias and fibulas is universally recognized. Considerable difficulty has been experienced in keeping on hand



Universal Thomas splint.

splints of proper sizes. Even though one may have a dozen assorted sizes, there are occasions when not one of them is suitable.

To remedy the condition I have had made a universal Thomas splint as represented in the illustration. Its features are:

1. It is adjustable to almost any sized limb, because: (a) the ring is adjustable and can be enlarged or decreased in size; (b) the distance from the ring to the knee can be increased or decreased; (c) the length from the knee to the ankle can be decreased or increased, and (d) the extension bar can be lengthened or shortened.
2. An ordinary screw-driver is all that is required.
3. The ring may be readily padded to the proper size.
4. It is collapsible and can be carried in a compact space.
5. It has the hinged extension, permitting passive motion of the knee joint at all times.
6. It obviates the necessity of having a large number of Thomas splints on hand.
7. If plated, it will not rust.

#### POISONING BY SHOE DYE

R. E. CLOUD, M.D., ENSLEY, BIRMINGHAM, ALA.

Nellie M., aged 3 years, had her shoes dyed at 5 o'clock in the afternoon. At 8 the same evening, the mother noticed some blueness of the lips, and at 8:30, when I saw her, her appearance was alarming; the face and hands were very pale, and the lips and finger nails markedly cyanotic. The child was irritable and behaved as if tired. The pulse was 134, heart action regular but agitated, and there was a systolic murmur, heard all over the precordium. The temperature apparently was not elevated, and there were no respiratory or gastro-intestinal symptoms. The eyes, mouth and throat were negative except for cyanosis of the lips and tongue. During examination, the odor from the freshly dyed shoes was very noticeable. With fresh air and rest in bed during the night, the cyanosis gradually cleared up, and the next morning the appearance and condition of the child showed nothing abnormal. When seen again a week later she was perfectly well, and there had been no return of the cyanosis.

#### REPORT OF CASE OF TWIST OF FALLOPIAN TUBE\*

GAYLORD T. BLOOMER, M.D., DETROIT

On account of its apparent rarity, this case seems sufficiently interesting to report, since careful search of the literature<sup>1</sup> to date reveals only twelve reported cases.

##### REPORT OF CASE

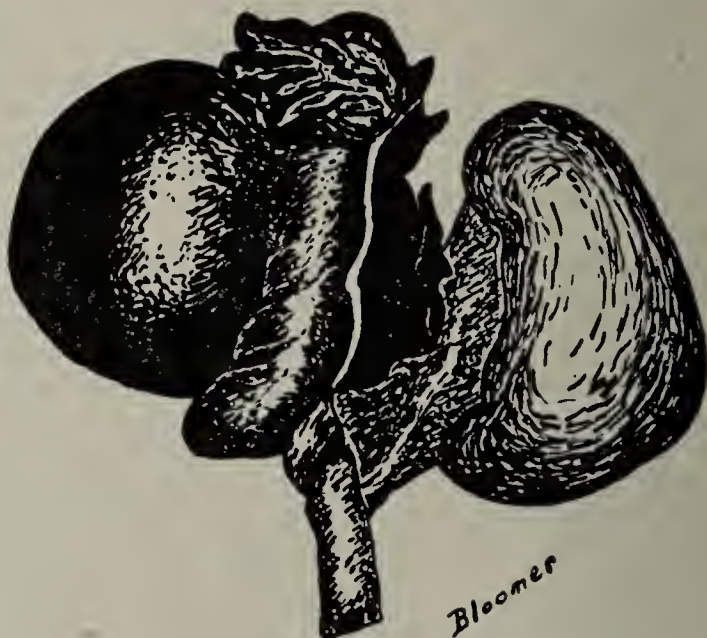
*History.*—Mrs. W., aged 33, white, married, was admitted to the service of Dr. Max Ballin, Nov. 6, 1921, complaining of excruciating abdominal pain of five hours' duration. The family and past histories were unimportant. She had had three children and no miscarriages. There was nothing in the past history to suggest any previous pelvic inflammation.

*Present Illness.*—Three days previous to admission she began having a constant dull aching pain across the lumbar region of the back. The following day the pain was more severe. Shortly before noon of the third day she was suddenly seized with agonizing cramps in the left lower quadrant of the abdomen, 2 inches (5 cm.) above the middle of Poupart's ligament. The pain was so severe that the administration of 1 grain (0.065 gm.) of morphin was necessary in the course of four hours. The pain was sharply localized to an area 1½ inches (3.8 cm.) in diameter, with some radiation down the inside of the left thigh as far as the knee. At no time was there any nausea or vomiting. The bowels moved well following an enema at noon.

The last menstrual period was normal and completed two days before the onset of the attack. The menstrual period prior to that also was normal.

*Examination.*—The patient looked very ill. The general examination was negative. The abdomen was level and tympanitic. There was an area of rigidity localized around the small area which was the site of the pain. Vaginal examination was negative on account of general tender rigidity, but we were sure there was no large cyst.

The temperature was 99.2 F.; pulse, 90; respiration, 20. Blood examination revealed 7,400 leukocytes with 78 per cent. polymorphonuclears. The urine was negative. Roentgen-ray examination detected no stones in the urinary tract.



Hydrosalpinx with twisted tube; ovary attached.

On account of the uncertainty of the diagnosis and in view of the patient's good general condition, it was decided to delay operation till morning. The pain was less severe during the night, while the patient's condition remained unchanged. Vaginal examination again revealed only tenderness in the left vault. We were unable to make an absolute diagnosis before operation. At first we favored ureteral calculus, but this was ruled out by the negative roentgen-ray

\* From the Second Surgical Division of Harper Hospital.

1. Whitehouse: Acute Torsion of Hydrosalpinx, Birmingham M. Rev. 81: 53, 1917, one case. Dearborn: Torsion of Hydrosalpinx, Boston M. & S. J. 184: 12 (Jan. 6) 1921, one case. Roeder, C. A.: Hydrosalpinx with Twisted Pedicle, J. A. M. A. 76: 515 (Feb. 19) 1921, one case, with bibliography of remaining nine cases.



and urinary findings. The two conditions then most favored were a small ovarian cyst with twisted pedicle or an unbroken ectopic pregnancy, although the possibility of a hydrosalpinx with twisted pedicle was considered.

**Operation and Result.**—A low median incision, 3 inches (7.5 cm.) long was made. The abdomen contained no blood or free fluid. The left tube carried in its fimbriated end a dark bluish mass 1 inch (2.5 cm.) in diameter. Proximal to this swelling there was a twist through 360 degrees around the long axis of the tube. The mass resembled an early unbroken tubal pregnancy, except for the torsion of the tube. The meso-ovarium and mesosalpinx were quite long. The right adnexa were normal. The appendix was sharply kinked in its middle, with a very short meso-appendix. Left salpingo-oophorectomy was done, along with routine appendectomy.

The convalescence was rapid and uneventful.

Pathologic examination revealed an hydropic tube with twisted pedicle. The wall was gangrenous and filled with gelatinous fluid. Microscopically, the specimen showed a cystic tube of old hydrosalpinx lined by columnar epithelium; the tube was filled with blood and had a gangrenous wall from torsion.

#### COMMENT

Judged from the literature, hydrosalpinx with torsion of its pedicle is quite rare. This rarity is doubtless explained by the presence of adhesions usually accompanying hydrosalpinx, rendering torsion impossible. None of the reported cases were diagnosed prior to operation, the most frequent diagnosis in right-sided cases being appendicitis, and ectopic pregnancy or ovarian cyst with twisted pedicle in left-sided cases.

In most of the cases, nausea and vomiting have been prominent symptoms, but our patient had neither nausea nor vomiting. The outstanding symptom was sharply localized excruciating pain, accompanied by a localized area of tender rigidity.

From questioning several other surgeons, we have formed an impression that this condition is much more frequent than reported, being considered unbroken tubal pregnancy when found, and not closely examined for torsion or presence of an ovum.

#### CAROTINEMIA IN AN ADULT

CAROLINE MCGILL, PH.D., M.D., BUTTE, MONT.

Head and Johnson,<sup>1</sup> in their report of a case of carotinemia in an adult, have given an excellent report of the condition with review of the literature, so that repetition is unnecessary.

#### REPORT OF CASE

Mrs. J. P. W., aged 43, housewife, first seen in June, 1920, was in the manic stage of a mild manic-depressive psychosis with history of previous attacks. She had been under the care of a chiropractor for two months, who had assured the family that by diet and his manipulations she would be cured. Her diet had been milk, raw lemons and about a dozen raw carrots a day. Needless to say, there was no change in her psychosis. The patient's family had noticed a yellow tingeing to the skin for several weeks, and stated that it had been getting progressively worse. The skin of the whole body surface was a most intense yellow, more marked on the palms and soles. The sclerae were not involved. Nowhere was there the brownish tinge seen in cases of long standing jaundice. The urine contained no bile pigments. The blood serum was bright yellow; at no time did it give reactions for bile.

Carrots were withdrawn, and the patient put on a well-balanced diet. She was observed frequently until October, 1920. There was a rapid fading of the color, and in about a month the skin was normal except on the palms and soles, where some discoloration was still present when the patient was last seen.

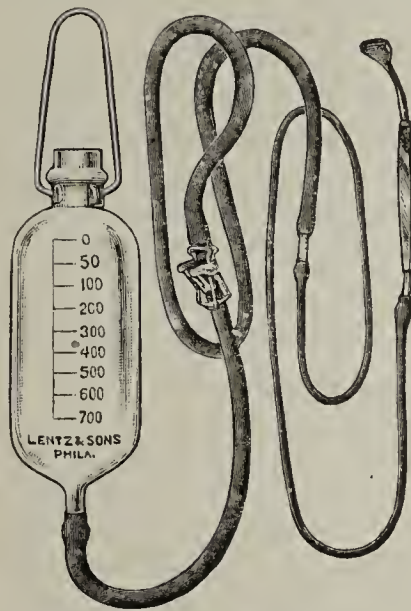
Murray Hospital.

1. Head, G. D., and Johnson, R. A.: Carotinemia: Report of a Case in an Adult, *Arch. Int. Med.* 28: 268 (Sept.) 1921.

#### HYDROSTATIC EYE DOUCHE

L. WEBSTER FOX, M.D., PHILADELPHIA

Thorough irrigation of the retrotarsal fold of the upper eyelid is one of the important essentials in cataract or any other operation requiring a corneal incision. With the nozzle of this irrigator one can easily flush the whole of the conjunctival culdesac and the globe. After the flat nozzle has been inserted under the upper lid it can be raised; this action stretches the eyelid and takes out all the minute folds of the conjunctiva, allowing the fluid to wash away any lurking enemy that may have found lodgment, a future focus of infection.



Hydrostatic eye douche.

The irrigator is made of sterling silver, gold plated, as I have found these metals the better suited for the various mercuric chlorid solutions in use. Gold plating is employed because various

experiments have proved that pathogenic germs will not grow on gold leaf. I am not unmindful of sterilization of instruments by dilute alcohol and heat.

303 South Seventeenth Street.

#### A CASE OF GENERAL DERMATITIS DUE TO THE EXTERNAL USE OF ORTHOFORM

JACOB ROSENBLUM, M.D., PH.D., PITTSBURGH

It is not generally known that the external application of orthoform can lead to an alarming generalized dermatitis. Orthoform (methyl-para-amido-meta-oxybenzoic ester) when applied externally in a 5 per cent. ointment to a patient suffering from anal pruritus produced an extremely acute and generalized dermatitis. The scalp and face were involved. The dermatitis was accompanied by marked edema of the tissues. This edema was most marked in the face, resembling the marked edema in glomerular nephritis. The only mention of this condition occurring after the use of orthoform that I could find is that of Bastedo.<sup>1</sup> He states that he has seen a spreading dermatitis of the fingers and hands after the use of an orthoform ointment. It occurred twice in the same person, and he thought it no doubt was due to idiosyncrasy.

I was able to produce the condition twice in my patient, the second occurrence of the dermatitis being more severe than the first. It would be interesting to know whether drugs similar to orthoform, such as anesthesin (the ethyl ester of para-amido-benzoic acid) and propaesin (para-amido-benzoic acid-propyl ester), are capable of producing dermatitis in certain cases.

5070 Jenkins Arcade.

1. Bastedo: *Materia Medica, Pharmacology and Therapeutics*, Ed. 2, 1918, p. 424.

**Importance of Breast Feeding.**—The younger the baby the greater the necessity of breast milk, if that baby is to live and grow into health. A recent investigation made by the Children's Bureau shows that of certain babies who had been exclusively breast-fed during the first six months of life, only a little more than 2 per cent. died during the first year of life, while the proportion of babies dying who had been artificially fed during the same period was about six times as great. It is plain that, as has been often said, "every mouthful of breast milk is important to the baby," and that in the first six months it is the principal safeguard of life.—*Bulletin, Children's Bureau.*



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JANUARY 28, 1922

## PALEOPATHOLOGY

As a master at one and the same time of pathology, archeology and anthropology, Rudolf Virchow was undoubtedly the first significant contributor to our knowledge of the pathologic changes that are to be found in the remains of our early ancestors. To this field of study, christened paleopathology by the late Sir Marc Armand Ruffer, numerous observers in different parts of the world have from time to time added their contributions. In this country, Dr. Ales Hrdlicka has described pathologic changes observed by him in his numerous explorations and studies of the aborigines of this hemisphere, and Prof. Roy L. Moodie of the University of Illinois has investigated not only pathologic but also bacteriologic specimens of early geologic times, finding bacteria in the Mesozoic era and, among other things, a pathologic lesion of the tail of a dinosaur. For the most part, the pathology of past ages has been revealed to us through osseous lesions, but the science of paleopathology received a great impetus when the Egyptian government placed large amounts of mummified material in the hands of such capable students as Ruffer, G. Elliott Smith and F. Wood Jones at Cairo. This came about at the time when the building of the great Assuan dam promised the inundation of areas of Egypt containing important burial places, the material from which was excavated to prevent its destruction, and thus made available for investigation.

After having spent some years in the study of this and other Egyptian material, Sir Armand Ruffer had planned to retire from active duty in 1919 and devote himself to the publishing of his observations, but lost his life at sea while returning from a mission to Saloniki in 1917. Fortunately, not all his work is lost to science, for his scientific colleague and widow, Lady Ruffer, has recently published an imposing volume of his studies.<sup>1</sup> He devised methods for successful microscopic study of the soft tissues of these mummies, which made it possible to learn of other diseases than those that could be revealed by examination of the

bones. Although the Egyptian embalmers had no such supernatural skill as tradition ascribes to them, relying mostly on the dry climate and the hot, sandy soil to preserve the subjects of their art, they were skilful in eviscerating their clients, leaving little of most of the important organs for study. Fortunately, not all bodies were embalmed, and so considerable visceral material has been obtained, preserved only by the desiccation of the Egyptian climate.

For any medical man, the story of the pathology of Egypt is nothing less than fascinating. We learn that the inhabitants of the Nile Valley, the cradle of history, suffered from arthritis deformans as far back as their pathology can be followed, and to a far greater degree and at a much earlier age than we now see this disease. The enthusiast on focal infection will be delighted to know that periodontal infection was rife among these arthritics, who hobbled to their graves a few thousands of years since. Even the cave bears, and a crocodile who basked in the sun some 900,000 years ago, had arthritis deformans with ankylosis of the vertebrae. The demonstration that a hump backed priest of Ammon, 1,000 years B. C., owed his hump to Pott's disease shows how little 3,000 years have altered the behavior of tuberculosis. Pneumonia is demonstrated in these old bodies, with bacteria still in a stainable condition. An osteosarcoma is identified in a skeleton of 250 A. D. Bilharziasis attacked the urinary tract commonly in the early days of Egypt, which country is still noted for the frequency of this parasitic disease. Lesions closely-resembling smallpox can still be recognized and studied by modern microscopic methods in these old mummies. Arteriosclerosis was common and severe in those days, when tobacco, excessive meat eating, modern strenuousness, and such things that nowadays are blamed for this condition certainly did not exist. Egyptian art has much reference to the dwarfs and other deformed persons of that day, which shows that achondroplasia has occurred for at least 5,000 years, that rickets has probably existed for the same period, and that the deformities characteristic of Pott's disease and of talipes equinovarus were put on record about 4,000 years ago.

For the historian, this sort of investigative work will be certainly of value, for it adds much to the picture of life in bygone times. It reveals the fact that men were commonly stiff and old by the time they had reached 50 years, and that the good old days were not so good from the sanitarian's standpoint. And we find that royalty was of very common clay, with extremely bad teeth and gums, queens bald of head, and even, we blush to say it, princesses with nits in their hair. Syphilis has not yet been demonstrated in early Egyptian bodies, a fact which may have influenced the sociology of the day. Food habits varied from time to time and in different classes, as shown by the degree of wearing down of the teeth, but at no time did there

1. Ruffer, M. A.: *Studies in the Palaeopathology of Egypt*, Chicago, University of Chicago Press, 1921; reviewed, this issue, p. 301.



exist those prehistoric dentists of whom all popular histories of Egypt relate, although they certainly were sorely needed.

Some studies of mummy material have also been made from the chemical standpoint. Abderhalden<sup>2</sup> found that the tissues of mummies were still well enough preserved after 3,000 years to yield amino-acids when hydrolyzed, and to have undergone autolysis since death, so that free amino-acids, cholesterol and fatty acids were present in the muscles. The brain of recent mummies still contains cholesterol, but it is greatly reduced in amount in very old specimens, according to Muir,<sup>3</sup> although much of the phosphorus remains. Active enzymes have been described in the muscle of mummies,<sup>4</sup> and it was found by Hansemann<sup>5</sup> that the proteins were so little altered in a mummy 5,000 years old that they gave the specific precipitin reaction. A glimpse at Egyptian therapeutics is offered by Johnsson,<sup>6</sup> who, in mummies of the same vintage, found that the intestines contained relics of grain, and epithelial cells of a common plant, the trichodesma, which is a household remedy to this day in certain countries for intestinal irritations and catarrhal conditions of the air passages. This was accompanied in some cases by mouse bones, recalling the Chinese pharmacopeia. Although fractures seem to have sometimes been skilfully cared for, and many persons in many climes survived trephining, nevertheless it seems that therapeutics has altered more than disease during the last fifty centuries.

#### IS WATER CHLORINATION EFFECTIVE AGAINST ALL WATER-BORNE DISEASE?

An important question is raised by the article on "Bacillus Welchii in a Public Water Supply as a Possible Cause of Intestinal Disease," published elsewhere in this issue.<sup>7</sup> As is well known, the method of chlorin treatment of water is now used widely in this country, possibly 0.5 per cent. of the total population being supplied with water treated by the chlorin method. The verdict of sanitarians as to its efficiency has been almost uniformly favorable. Chlorination of water supplies has been, indeed, remarkably successful in doing away with the danger of water-borne typhoid. If it is true, however, that the spores of certain pathogenic organisms are so resistant to chlorin that they survive its action in numbers large enough to cause extensive outbreaks of intestinal disease, it is plain that dependence on the chlorin treatment of highly polluted waters is to some degree unjustifiable. Cambridge, Mass., and some other communities appear to have suffered like

Montclair from outbreaks of enteritis attributed to chlorinated water supplies.

Several perplexing problems are involved. In the first place, is the practice warranted of attempting by chlorination of a heavily sewage contaminated water to obtain a supply fit for human consumption? To this question the answer will be almost universally negative. Experienced waterworks engineers, as well as health officers and sanitarians generally, regard such a practice as dangerous and eminently undesirable. It is true that, in an emergency, chlorin treatment of a dilute sewage may be the only safeguard available; but, as a matter of routine practice, chlorinated sewage will find few defendants. It is today well recognized that, if the source of the public water supply is contaminated with a large amount of sewage, preliminary treatment by filtration or some other process should precede chlorination.

A second question, and one of great practical importance, is whether the ordinary *Bacillus coli* test for water contamination is insufficient. If it is a fact that the spores of *Bacillus welchii* or some closely similar anaerobic organism can withstand chlorin treatment, would it not be desirable to add tests for such organisms to the standard methods of water examination, particularly where chlorinated waters are concerned? This question was discussed by a number of the leading experts in sanitary water analysis in this country a few months ago in the columns of the *Engineering News-Record*,<sup>8</sup> and the answer was almost unanimously in the negative. Sir Alexander Houston has recently published a critical analysis of the available data, and has expressed the feeling that the importance of the "stormy fermenters" in connection with gastro-intestinal disorders caused by water supplies has been unduly magnified. Scientific questions, however, never reach their final solution by a majority vote or by the verdict of any authority, however eminent and experienced.

The plain fact is that the evidence is quite inadequate for a scientific decision. The significance of the "stormy fermenters" in chlorinated water supplies is not known. It must be admitted also that the nature and classification of these anaerobic organisms, apparently somewhat hastily denominated *Bacillus welchii*, remain to be determined. It certainly should not be too readily assumed that these anaerobic bacteria in water supplies are the cause of gastro-intestinal disturbances. As is well known, feeding experiments with *Bacillus welchii* both on monkeys and on man himself have not given conclusive evidence of pathogenic power.

Both the practical and the scientific aspects of water-borne outbreaks of gastro-intestinal disease make this a particularly attractive, albeit difficult problem for investigation.

2. Abderhalden: *Ztschr. f. physiol. Chem.* 72: 15, 1911.

3. Muir: *J. Path. & Bacteriol.* 18: 179, 1913.

4. Sehart: *Berl. klin. Wchnschr.* 41: 497, 1904.

5. Hansemann: *München. med. Wchnschr.* 30: 572, 1904.

6. Johnsson: *Ugesk. f. Læger* 82: 326, 1920.

7. Larner, H. B.: *Bacillus Welchii in a Public Water Supply as a Possible Cause of Intestinal Disease*, this issue, page 276.

8. *Engineering News-Record* 86: 929, 1921.



## ALASTRIM

Acute specific fever resembling a mild form of smallpox in many of its symptoms and exanthematous features has been observed in various parts of the world, and has been designated by a number of names, such as varioloid, varicella, Kaffir milkpox, Amaas, Sanaga smallpox, West Indian modified smallpox, and perhaps most consistently as alastrim, a name of Brazilian origin. The justification for calling attention to the debated subject at this time lies in the fact that quite recently an epidemic of alastrim occurred in the island of Jamaica, to which it is supposed to have been spread from Cuba or South America. In September, 1920, the number of cases in the city of Kingston alone was variously estimated at from 400 to 700.

Alastrim differs from variola vera in the relative mildness of its course. A recent observer of the Jamaican epidemic points out that the effort to distinguish accurately between the two diseases is the more difficult because of the extraordinary variation in severity in what has in various epidemics been regarded as true smallpox. Mild cases of smallpox often show, however, only a few scattered pocks and a slight fever, while in alastrim the initial fever is high and the body is covered with pocks often broadly confluent; and yet the patients are not especially ill, the liability to second infection is slight, and the mortality is trifling. The prognosis in alastrim is good; records of more than a quarter of a million cases have shown a mortality below 2 per cent.

One of the mooted points in regard to the identity of alastrim concerns the possible efficacy of the vaccination against smallpox to protect the subject against the related disease. Several investigators have concluded that Jenner's vaccination is protective in either case.<sup>1</sup> In a recent report of the Jamaican epidemic, MacCallum and Moody<sup>2</sup> point out that "an effective protection must be held to be evidence of their extremely close relationship, while any failure to protect might be regarded as an indication that alastrim is a different disease, since the great effectiveness of vaccination as a protection against smallpox is attested by the experience of more than a century, and is absolutely established in spite of the recurrent outcry of ignorant people who attempt to interfere with the use of this great triumph of preventive medicine." MacCallum and Moody recognize the difficulty of forming a precise idea of the efficacy of vaccination in protecting against alastrim. They conclude, however, that since among the actual cases of the disease there were so few patients that presented indubitable evidence of having been recently vaccinated, and since the escape of those successfully vaccinated is so well attested in large numbers of cases, it seems necessary

to believe that vaccination is an extremely effective protection. Furthermore, as the alastrim form of disease is as easily communicable as the most severe smallpox, no consideration should excuse neglect of prompt vaccination and revaccination as well as proper quarantining, even though the death rate is low.

So long as it is impossible to state with certainty what the etiologic relations between smallpox and cowpox or vaccinia are, there is no anomaly in treating alastrim as an independent though somewhat related disease. The oft reported existence of long-continued epidemics of so-called mild forms of smallpox in various regions, including the United States and Canada, further justifies a careful consideration of the possibility that the less severe affection with low mortality may in fact be identical with alastrim rather than another of the exanthems. MacCallum has done excellent service in directing attention anew to this question.

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 INSTITUTIONAL DIETARY PROBLEMS AND  
THE MEATLESS DIET

Dietetics often encounters, in both private homes and public institutions, practical difficulties which are occasioned by the economic status, customs, prejudices, location and religious dictates of the patients rather than by purely scientific motives. Any physician who is engaged in practice among communities which include a conglomeration of races will recognize the validity of this statement. Foods that are specifically prescribed by the dietitian may be promptly proscribed by him for whom they are ordered. To one religious sect the eating of the flesh of animals becomes a religious impossibility. Others object on humanitarian or esthetic principles to such a dietary practice. Still others, following the literal interpretation of the Mosaic law, accept a dietetic ritual which forbids the mixing of meat and milk and their derivatives, and likewise directs that all implements and containers used for milk must be kept uncontaminated by any meat product, and vice versa.

Despite what we may think of the merits or disadvantages of edible flesh and its products, it becomes necessary in many institutions to cater to the varying needs of persons in terms of something more than mere scientific propriety. When a diversity of patients of differing religious faiths or culinary cults are involved, this sometimes necessitates special diet kitchens for such specific demands. In many instances the difficulty of added expense and effort would be solved if meat were entirely omitted from the regimen. Before committing themselves to such a policy, the authorities of the Beth Israel Hospital, New York, addressed themselves to a number of prominent students of nutrition in this country. The question presented concerned the possibility of preparing a well balanced meatless diet which would include all the essentials for nutrition; in

1. Castellani, A., and Chalmers, A. J.: *Manual of Tropical Medicine*, London, 1919, p. 1491.

2. MacCallum, W. G., and Moody, L. M.: *Alastrim in Jamaica*, *Am. J. Hyg.* 1: 388 (July) 1921.



other words, the suitability of the so-called lactovegetarian diet was made the subject of professional inquiry. The consensus of opinion obtained from F. G. Benedict, R. H. Chittenden, W. J. Gies, Graham Lusk, Lafayette B. Mendel, E. V. McCollum and V. C. Vaughan indicated no hesitation whatever in the conclusion that meat is not indispensable for human well-being.<sup>1</sup>

This decision, attesting the belief that no disadvantage would accrue to an institution which found it advisable to adopt a lactovegetarian regimen for its patients, if circumstances rendered this plan advantageous for other than physiologic reasons, may be helpful in many situations. It should not be interpreted, however, as a rejection of the claims of meat for a place in the dietary or as a judgment against flesh products. "The regard in which meat is held is probably largely due to its peculiar texture and to certain substances found in its juices which give it a pronounced and agreeable flavor and exert a stimulating effect upon appetite and digestion."<sup>2</sup> The road to good nutrition is not single tracked.

## Current Comment

### THE VALUE OF CASE REPORTS

Rudolf Virchow once said that medical literature was sprinkled with case reports like fly specks. This and similar comments by others have caused many to feel that the reporting of single cases is an unworthy sort of procedure, more indicative of a desire for publicity than the wish to contribute to medical knowledge. Such a derogatory attitude is anything but just. Many of the most important contributions to medical science are in the form of case reports. The only way we can learn about rare conditions is by the accumulation of data provided by each of the several persons who have observed instances of them. No one case gives the whole picture, but when we have accumulated enough separate views we can reconstruct a working model of the process. The success with which this can be done depends largely on the accuracy and clearness of each of the several exposures. Some of the most interesting items in medical literature are case reports, and the well written report of an unusual case is always good reading. It requires much skill and judgment to select the essentials, and even more to discard the valueless items, to assay and interpret the existing literature. The preparation of a case for report is the best possible stimulus for accuracy and thoroughness in clinical and laboratory study. To be able to write a good case report is an art. Furthermore, since our knowledge of all diseases that occur infrequently must be built up from such isolated observations, it is an obligation to medical science to report each and every such case. Were this always done, and well done, we should know much more concerning the frequency of

rare diseases, their manifestations, course and treatment, and there would be less occasion to puzzle about obscure pathologic conditions.

### THE SEAT OF IMMUNITY AND SUSCEPTIBILITY TO TUMORS

Experimental investigations of tumor growth have indicated that probably there are factors which tend to produce immunity to certain types of neoplasms, as well as conditions that afford greater susceptibility to them. It is obviously of importance to know where the inhibitory or predisposing influences or components of the organism are located in the body. If they are present in the tissue fluids and the circulating blood, there is some prospect not only of employing them to modify the incidence or growth of tumors, but also of discovering what is the nature of the substances that lend refractoriness or susceptibility to the host. Evidence has already been furnished to show that the intraperitoneal injection of blood from immune animals into susceptible ones is without retarding influence on the growth of tumors in the latter.<sup>1</sup> Recently Kross<sup>2</sup> has studied the possible effects of parabiosis between refractory and susceptible animals whereby, through surgical union, they are brought into very intimate biologic relationship. "Immune substances," if they exist free to circulate, ought in this way to be able to be transferred from one partner in the couple to the other. The various surgically united animals were inoculated with tumors, but there was no departure from the results characteristic of the transplantable neoplasms employed. Even a parabiotic union failed to increase the susceptibility of the immune or decrease the immunity of the susceptible. Wherever the regulating factors may reside, they are evidently not easily transported in the organism.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARKANSAS

**Hospital News.**—The Senate has passed a bill, introduced by Senator Robinson, granting to the Leon Levi Memorial Hospital Association two lots for the construction of hospital buildings on the government reservation at Hot Springs.

### CALIFORNIA

**Fined for Unlicensed Practice.**—It is reported that Takeo Yanagawa, a Japanese of Oakland, was recently fined \$500 following conviction on the charge of practicing medicine without a license.

### CONNECTICUT

**Gift to Yale Medical School.**—An anonymous pledge of \$100,000 has been received for the establishment in the school of medicine of the William H. Carmalt Professorship Fund.

### FLORIDA

**Central Florida Medical Society.**—In an effort to coordinate the members of the county medical societies in the fifth

1. Frank, L. J.: The Meatless Diet, *Mod. Hosp.* 17:429 (Nov.) 1921.

2. Rose, Mary S.: Feeding the Family, New York, the Macmillan Company, 1916.

1. Kross, I.: *J. Cancer Res.* 6:25 (Jan.) 1921.

2. Kross, I.: Parabiosis and Tumor Growth, *J. Cancer Res.* 6:121 (April) 1921.



and eighth councilor districts of the state medical association, the Central Florida Medical Society was recently organized at Ocala. The following officers were elected: president, Dr. Henry C. Dozier, Ocala; vice presidents, Marion County, Dr. James H. Walters, Ocala; Alachua County, Dr. Matthews H. DePass, Gainesville; Sumter County, Dr. Henry S. Cherry, Center Hill.; Citrus County, Dr. P. J. Hadson, and secretary-treasurer, Dr. Robert D. Ferguson, Reddick.

### ILLINOIS

**Trichinosis and Leprosy Reported.**—Three cases of trichinosis and one case of leprosy were reported to the state department of public health during the first weeks of January. The trichinosis cases occurred in DuPage, Hancock and Livingston counties, while the case of leprosy occurred in Rockford.

**Moth Collection to be Sold.**—Dr. William Barnes, Decatur, plans to sell his private collection of butterflies and moths, said to be the largest and most valuable private collection in the United States, to the Smithsonian Institute, and to give the money to the Macon County Hospital. The collection contains more than 10,000 varieties of *Lepidoptera*.

**New County Medical Society.**—At a meeting of physicians of Ford County held at Paxton, January 10, the Ford County Medical Society was organized as a branch of the Illinois State Medical Society. The following officers were elected: president, Dr. Samuel M. Wylie, Paxton; vice president, Dr. Robert N. Lane, Gibson City, and secretary-treasurer, Dr. Walter L. Cottingham, Paxton.

**Quarantine Rule Violated.**—The state department of health announces the occurrence of a number of violations of the recently modified quarantine ruling, which was designed to apply only in cities where a full-time health commissioner was employed as the director of an efficient department of health, and where other specific conditions were met. Under no circumstances is the adoption of modified quarantine regulations permitted without first obtaining written authority from the state director of public health.

**Decrease in Cost of Diagnostic Laboratory Tests.**—The cost of making diagnostic examinations of specimens in the laboratories of the state department of public health has decreased more than 81 per cent. since 1906. The average cost of each test made in 1906 was \$1.23, whereas the average cost for each test made during the six months ending Dec. 3, 1921, was only 23 cents. In 1906 there was a total of 2,370 specimens examined at a total cost of \$2,939, as compared with 54,002 for the six months ending Dec. 21, 1921, at a cost of \$12,865.

### Chicago

**The Robert Koch Society for the Study of Tuberculosis.**—The forty-third annual meeting of the society was held, January 23, at the City Club, under the presidency of Dr. Max Biesenthal.

**Fire at Loyola University School of Medicine.**—The damage caused by a fire, January 9, believed to have been started by crossed electric wires, to instruments and specimens in Loyola University School of Medicine, is estimated at \$50,000.

**Superior Court Judge Rules on Vaccination.**—Recently Judge David of the superior court handed down a decision relative to compulsory vaccination in schools. The decision is important and his instructions to the jury are reproduced in part in the Department of Social and Industrial Medicine in this issue of THE JOURNAL.

**Right of Way for Physicians.**—By displaying on the radiator of their cars a sign which may be obtained at the city clerk's office, physicians may obtain the right of way, wherever possible, at bridges, processions or public gatherings.

**Venereal Disease Institute.**—Arrangements have been made for a venereal disease institute to be held in Chicago, March 13-18, under the auspices of the U. S. Public Health Service and directed by the Illinois State Department of Public Health. Physicians, social workers and other interested persons are invited to attend. Programs and registration cards may be obtained from the Illinois State Department of Health, Springfield.

### INDIANA

**Physician Becomes Mayor.**—Dr. John C. Quick was installed mayor of Muncie, January 1.

**State Board of Medical Registration and Examination.**—The board at its semiannual meeting, January 10, reelected the following officers: Dr. William A. Spurgeon, Muncie,

president; Dr. Eldrige M. Shanklin, Hammond, vice president; Dr. William T. Gott, Crawfordsville, secretary, and Dr. Paul R. Tindall, Shelbyville, treasurer. There will be no January examination for the licensing of physicians.

**Indiana Academy of Ophthalmology and Oto-Laryngology.**—At a meeting of the Indiana Academy of Ophthalmology and Oto-Laryngology, held at Indianapolis, January 19-20, the following officers were elected for the ensuing year: president, Dr. Delbert O. Kearby, Indianapolis; first vice president, Dr. Henry C. Knapp, Vincennes; second vice president, Dr. John W. Carmack, Indianapolis, and secretary-treasurer, Dr. Bernard J. Larkin, Indianapolis.

### IOWA

**Sioux Valley Eye and Ear Academy.**—The eighteenth semi-annual session of the academy was held at Sioux City, January 24, under the presidency of Dr. Frank I. Putnam, Sioux Falls, S. D.

### MARYLAND

**Personal.**—Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, Baltimore, has been awarded the Distinguished Service Medal for services rendered during the World War. Dr. Smith was instrumental in bringing to Surgeon-General Gorgas' office many practical ideas which helped the Medical Corps meet many of its problems during the emergency.

**Clinics at Medical Meetings.**—The Baltimore City Medical Society has announced an innovation to its regular meetings. During the present year a number of clinical nights will be held, at which time interesting cases will be reported or presented before the society by the various members. Dr. Thomas B. Fletcher is president and Dr. Frank S. Lynn secretary of the society.

**Baltimore Second in Drug Addicts Arrests.**—Two hundred and twenty drug addicts were arrested in the Baltimore area during five months in 1921, according to a report by the narcotic division of the Internal Revenue Bureau, which credits Baltimore with the second highest number of arrests. In the Little Rock, Ark., area, which leads in the number of arrests, 166 convictions were obtained after 364 arrests.

**School Health Work to Be Organized.**—Dr. C. Hampson Jones, health commissioner, has been authorized to begin the organization of his force of assistants for medical work in the public schools of Baltimore. He is to appoint at once three women physicians and three additional men physicians at \$1,000 each a year for the physical examination of pupils in the high schools, and a part-time psychiatrist, at \$1,800 a year, to examine children who are defective and not proficient in their studies. This official is to work in the schools two hours daily for five days a week during the school year. Later, six more women physicians and six men physicians at \$100 a month for three months will be engaged.

**Movement for Hospital for Tuberculous Colored Patients.**—Dr. Samuel J. Fort, deputy state health officer for southern Maryland, has started a movement in his section, particularly in Charles County, for the proper care of colored tuberculous patients, and has received from a citizen of that county the offer of 25 acres of land as a site for a hospital. One hospital of colored tuberculous patients is to be constructed by the state on a 100 acre site near Henryton, Carroll County; but, in the opinion of Dr. John S. Fulton, secretary of the state department of health, one hospital for such a purpose is only a beginning, and the establishment of an additional hospital should be encouraged. No definite action has been taken.

**Officers of Baltimore County Medical Association.**—The following officers were elected at the meeting of the Baltimore County Medical Association, January 18, at the Medical and Chirurgical Faculty Building, Baltimore: Dr. George S. M. Kieffer, Morrell Park, president; Dr. Albert L. Wilkinson, Raspeburg, vice president, and Dr. William A. Bridges, Towson, secretary and treasurer. Dr. Henry A. Naylor, the retiring president of the Association, made a plea for a general hospital for Baltimore County, capable of relieving the city institutions of the excess burden of the county's work. The cost of such a hospital was estimated at from \$200,000 to \$300,000. General approval of the plan was expressed.

### MASSACHUSETTS

**Parlor Meetings on Mental Hygiene.**—Under the auspices of the National Committee and the Massachusetts Society for Mental Hygiene, a series of parlor meetings will be held. It is planned to bring before the public the prevalence of



mental diseases and the need for action, and it is expected that the movement will become nation-wide. In Massachusetts alone, in 1921, more than 20,000 patients were treated in state hospitals for mental diseases, at a cost to the state of not less than \$7,000,000.

#### MINNESOTA

**Hennepin County Medical Society.**—At the meeting of the society held at Minneapolis, January 1, Dr. Arthur E. Benjamin was elected president, to succeed Dr. George D. Head; Dr. Axel E. Hedback was made first vice president; Dr. James S. Reynolds, second vice president; Dr. Rae T. La Vake, secretary and treasurer, and Dr. Fred L. Adair, librarian.

#### MISSOURI

**Hospital News.**—President Harding has signed an executive order for the building of a soldiers' hospital at Jefferson Barracks, St. Louis, which, it is estimated, will cost \$1,000,000.

**Medical Lectures for the Laity.**—The second annual series of special lectures on medical and surgical subjects by faculty members of the Washington University Medical School, St. Louis, began, January 8. There are to be ten lectures, the last one being scheduled for March 12. They are to be held in the auditorium of the school of medicine building and are free to the public, for whose information the lectures are given.

#### NEVADA

**Personal.**—Dr. Sidney K. Morrison, Reno, is recovering from sepsis caused by puncturing the skin on his hand with a needle during an operation.

#### NEW JERSEY

**Trade Union Plans Sanatorium.**—The Trades Union Anti-tuberculosis Association, Newark, for a number of years has undertaken the free care of industrial workers who are members of the industrial association. The union is now considering a plan to raise \$25,000 for a country home, where adult tuberculous patients as well as children will receive treatment.

#### NEW YORK

**Woman Physician to Be Health Officer.**—Dr. Maryland E. Burns has been made health officer of Glen Cove, L. I., to succeed Dr. Joseph B. Conolly. Dr. Burns, who is only 24 years old, is a graduate of both law and medicine.

**Testimonial Dinner to Dr. Pilgrim.**—Dr. Charles Winfield Pilgrim, New York City, who retired from the chairmanship of the state hospital commission, December 12, after forty years' continuous service, was given a testimonial dinner, December 8. One hundred and fifteen state hospital associates were present. Dr. Pilgrim was presented with a silver service.

**Legislative News.**—A bill has been introduced into the state legislature providing medical service for pupils attending all the public schools of the state. The proposed service will include the services of physicians, surgeons and dentists for the purpose of ascertaining the existence of diseases or physical defects and to give advice for the correction and prevention of such diseases and defects and provide treatment for them.

**"New York Medical Week."**—The first issue has just appeared of a new periodical, entitled *The New York Medical Week* which is to be published under the auspices of the Medical Society of the County of New York, and to present the activities of the medical organizations of Greater New York. It is hoped to have the periodical act as a forum for general discussions and to announce each week meetings which are to be held, and information relative to legislation and other current topics. It is announced that subscribers may depend without question on every statement given in the advertising pages, all advertisements answering to the requirements of the Council on Pharmacy and Chemistry of the American Medical Association.

#### New York City

**Harvey Society Lecture.**—Mr. Joseph Barcoft, F.R.S., fellow, Kings College, Cambridge, England, will deliver the sixth Harvey Society lecture at the New York Academy of Medicine, February 11, on the subject of "The Raison d'Être of the Red Corpuscle."

**Association for the Prevention and Relief of Heart Disease.**—At the last quarterly meeting of the board of governors of the association, Dr. T. Stuart Hart was elected president; Dr. Robert H. Halsey, vice president; Dr. William P. St. Laurence, secretary, and Mr. Ray Morris, treasurer.

**Middleton Goldsmith Lecture.**—The Middleton Goldsmith Lecture of the New York Pathological Society will be delivered at the New York Academy of Medicine, Friday evening, February 3, at 8:30 o'clock, by Prof. Thomas Hunt Morgan of Columbia University. His subject will be "Some Possible Bearing of Genetics on Pathology."

**Immunizing Children Against Diphtheria.**—Dr. William H. Park, in charge of the bureau of laboratories of the health department, states that during 1921, with the aid of the American Red Cross, 145,000 children received immunizing treatment against diphtheria, and that from the latter half of 1920 to the latter part of 1921, there has been a decrease of 1,852 cases of diphtheria and of 155 deaths from this disease. Dr. Park points out that the cost of 10,722 cases of diphtheria in the first six months of 1921 and 611 funerals was \$581,825, while the cost of immunizing 1,000,000 children against diphtheria would be but \$250,000.

#### OREGON

**New Officer for the State Board of Health.**—At the annual meeting of the state board of health, January 10, Dr. Charles J. Smith, Portland, was elected president of the board to succeed Dr. Willis B. Morse. Dr. John H. Rosenberg, Prineville, was elected vice president and Dr. Frederick D. Stricker, Portland, reelected secretary-treasurer and state health officer.

#### PENNSYLVANIA

**Smallpox in Pittsburgh.**—City health officials announce that precautionary measures are being taken to prevent the spread of smallpox. Six cases of the disease have been reported in the last three weeks from the Woods Run district.

**Hospital News.**—The contract has been awarded for the construction of the new Robert H. Crozer Hospital at a cost of \$205,500. An endowment fund of \$200,000 for the hospital was left in the will of Mr. Crozer. The building will be constructed on the Chester Hospital grounds and will be a separate institution.

**Meeting of the Medical Examiners' Association.**—The annual meeting and dinner of the Medical Examiners' Association was held, January 13, in Philadelphia. The following officers were elected for the ensuing year: president, Dr. John L. Redman; treasurer, Dr. Howard M. Kuehner, and secretary, Dr. William H. Carpenter.

**Medical Club of Philadelphia.**—At the annual meeting of the club held, January 20, the following officers were elected for the ensuing year: president, Dr. Ernest Laplace; first vice president, Dr. Seth MacCuen Smith; second vice president, Dr. Alexander MacAlister; secretary, Dr. William S. Wray; treasurer, Dr. Lewis H. Adler, Jr., and governor, Dr. Francis X. Dercum.

**Philadelphia Association of Industrial Medicine.**—At the meeting of the association held recently, the following officers were elected for 1922: president, Dr. Lorne E. Hastings, J. G. Brill Company; vice president, Dr. Alma M. Hinman, Bell Telephone Company; secretary, Dr. Katherin Starkey, Bell Telephone Company, and treasurer, Dr. Earl H. Ingram, Cramp's Shipbuilding Company.

#### Philadelphia

**Lecture Course on Preventive Medicine.**—The first course of lectures on preventive medicine under the Anna Howard Shaw Memorial Foundation was begun at the Woman's Medical College of Pennsylvania, January 17, and will continue each Tuesday until March 21. The lectures are free to the public.

#### TENNESSEE

**Hospital News.**—Funds have been secured for a new \$200,000 hospital at Corinth.

#### TEXAS

**Personal.**—Dr. Manton M. Carrick, Austin, has resigned as president of the state board of health of Texas, effective, January 20.

#### VERMONT

**Conference of State Medical Society and Public Health Workers.**—As a result of the discussion in the house of



delegates at the annual meeting of the Vermont State Medical Society held in October, 1921, as to the conduct of public health work in the state, a meeting was called, January 11, in Burlington to which were invited the workers and representatives of the different public health branches for a general discussion of the question. Dr. Schuyler W. Hammond, Rutland, spoke on "Some Socialistic Tendencies of Medicine"; Dr. Clarence H. Beecher, Burlington, discussed the relation of the general practitioner toward the public health worker, and Edward J. Rogers, Pittsford, spoke on the "Tuberculosis Problem." Dr. Beecher emphasized six points as means likely to improve relations between the medical profession and the public health worker: (1) central control of all public health activities by the state board of health; (2) determined opposition to paternalism in medicine; (3) careful discrimination between public health work and private practice; (4) a committee from the constituent county societies of the state medical society to cooperate with the board of health; (5) necessity of keeping in mind that public opinion is the final arbiter in all health matters, and (6) the fact that the general practitioner is the most widespread public health worker. It was proposed that a public health council should be made up of one representative from each organization or society doing public health or welfare work in Vermont, including the executive department, the state board of health, the state board of charities and probation, director of state institutions, state medical society, Vermont Tuberculosis Association, American Red Cross and the Children's Aid Society, and that a committee of seven be appointed to draw up plans for such a public health council and report at the next meeting of the state medical society.

#### VIRGINIA

**Hospital News.**—Mount Sinai Hospital, Norfolk, was dedicated and thrown open to the public, Dec. 29, 1921.

#### WEST VIRGINIA

**Hospital News.**—The citizens of Morgantown have inaugurated a campaign for a community hospital.

**Gift to Medical School.**—The West Virginia University School of Medicine, Morgantown, will benefit from the gift of 1,900 acres of rich coal land recently made by I. C. White to the state university.

#### WISCONSIN

**New Building for Medical School.**—Marquette University School of Medicine, Milwaukee, has announced the purchase of a three-story brick building for use of the departments of physiology and pharmacology of the medical school.

**Law Suggested to Compel Fireproof Hospitals.**—The Wisconsin State Industrial Commission is considering the advisability of amending the state building code to require all hospitals hereafter constructed to be of fireproof material. The commission is sending a circular letter to physicians and surgeons in the state, in which it asks for an expression of opinion as to the advisability of the change.

#### PHILIPPINE ISLANDS

**National Conference on Infant Mortality and Public Welfare.**—The first national Conference on Infant Mortality and Public Welfare, was held, Dec. 6-10, 1921, at Manila. More than a thousand members from the various islands attended this meeting. Among the speakers were: Dr. José Fabella, public welfare commissioner; Dr. Fernando Calderon, dean, College of Medicine and Surgery, University of the Philippines; Dr. Rebecca Parish, Mary J. Johnston Hospital; Dr. José Albert, professor of pediatrics, University of the Philippines; Dr. Joaquin Quintos, professor of pediatrics, University of St. Thomas, Manila; Dr. Camelo Peñaflor, Philippine Island Antituberculosis Society, and Dr. Vicente de Jesus, director of the Philippine Health Service. A garden party was given, December 6, by Governor-General and Mrs. Leonard Wood at the Malacanan Palace.

#### CANADA

**Ambulance for Belleville.**—The graduate nurses of the city of Belleville are procuring an up-to-date ambulance for the use of the city, and a grant of \$500 toward the purchase has been recommended by the city council.

**Fees on Maternity Cases.**—The Edmonton Medical Association has fixed a minimum fee of \$25, and the Calgary, Alta., Medical Association has fixed a minimum fee of \$35,

with mileage added, for all maternity cases. In view of the fact that numerous families are unable to meet these charges the Mount Vernon, Alta., Board of Health, asks that the government fix a minimum fee of \$20, with a stated mileage charge for over ten miles, and that the government contribute \$10, in each case, plus mileage.

**Liquor Prescription Controversy.**—In connection with the liquor prescription controversy, a conference between the medical men and the attorney general's department, Ontario, will be held shortly. Many suggestions have been forwarded by medical men, and they will be taken up and discussed at the conference. Dr. F. Marlow stated recently that the attitude of the board of license commissioners is simply a slander on the profession, and that the profession had reached the point at which it does not propose to stand such slanders any longer. Dr. Marlow presses the fact, admitted in legislative circles, that there is no legislation fixing the number of prescriptions that a physician may issue, but it is left to the arbitrary ruling of the license board, which has been gradually reducing the maximum. The attitude of the license board on that point is that the alternative of calling in the individual physician personally and interviewing him is not as practical as the fixing of a maximum.

#### GENERAL

**Rockefeller Institute Anniversary.**—The Rockefeller Institute for Medical Research celebrated the twentieth anniversary of its foundation, January 20. The speakers were: Dr. William H. Welch, board of scientific directors, and John D. Rockefeller, Jr., board of trustees.

**Dr. Work May Become Postmaster General.**—It is reported that Dr. Hubert Work, President of the American Medical Association and now first assistant postmaster general, may be named postmaster general to succeed Will H. Hays, who is to resign to become the head of the motion picture industry of the country.

**Child Labor Day.**—The annual observation of Child Labor Day will be held, January 29. Reports from the U. S. Department of Labor, Children's Bureau, state that practically every child in the Texas cotton belt of 10 years of age or over is employed in the fields, hoeing, plowing and harrowing, for ten or twelve hours a day. Teachers report that half of the children who should have been in school by September did not register until November or later. Illiteracy on the part of father or mother was reported for from 7 to 9 per cent. of the white families and about a third of the colored families visited.

**Infant Mortality Rates.**—Record low rates of infant mortality are reported by the bureau of the census in fifty-one cities of the United States, based on estimates for 1921. For the group of fifty-one cities, the infant mortality rate is 74 per thousand births, as against a rate of 90 in 1920, for forty-four cities. The lowest infant mortality rate, 47 per thousand births, appears for the cities of Portland, Ore., St. Paul and Seattle, and the highest rate, 11 per thousand, for Fall River, Mass. The greatest decrease since 1920 appears for Lowell, Mass., with a rate of 90 for 1921, against a rate of 135 for 1920. No city shows a higher rate for 1921 than for 1920, though Albany and Salt Lake City maintain the same rates for the two years, 77 and 72, respectively.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Jewish Maternity Hospital, Philadelphia, \$60,000, ultimately, from the estate of the late Henry Jacobs.

Misericordia Hospital, Philadelphia, and three other Catholic institutions to share equally, \$31,500, from the estate of the late William H. Gunn.

Pennsylvania Hospital, Philadelphia, \$15,000, by the will of Edward W. Coates.

Worcester Hahnemann Hospital, \$10,000, for free beds; the Hospital Cottages for Children, Baldwinville, Mass., \$5,000; Worcester Y. M. C. A., \$1,000, for the sick bed fund; the Memorial Hospital, Worcester, and the Home for Aged Women, Worcester, each \$1,000, by the will of Abbie A. Bigelow.

Lenox Hill Hospital, New York, and the New York Association for the Blind, each \$5,000, by the will of Ida Barth Iden.

Memorial Hospital, Orange, N. J., \$2,000, by the will of Mrs. Calista S. Mayhew of South Orange.

St. Luke's Hospital, South Bethlehem, Pa., fifty shares of Penn Securities stock, the income of which to go to charity patients of the institution, by Martin D. Kern of Allentown.

#### LATIN AMERICA

**Plague at Brazil.**—An epidemic of plague has broken out at Maranhão. In addition to personnel, the public health department sent antiplague vaccine and serum, disinfecting apparatus and other sanitary material.



**Medical Press Congress in Cuba.**—At the recent congress of the Cuban Medical Press, the following officers were elected: president, Dr. J. F. Arteaga; vice presidents, Drs. C. M. Piñeiro, A. González Curquejo, F. Hart, E. R. Aragón and G. Aróstegui; secretary, Dr. S. Ramos. The several sessions were well attended and the closing speech was delivered by Dr. Juan Guiteras, secretary of public health and beneficence.

**Sanitary Legislation at El Salvador.**—For the first time in the history of El Salvador, the federal constitution contains several provisions relating to public health. They were inserted by Dr. Eduardo Alvarez, one of the division chiefs of the department of public health. The present director of public health is Dr. L. V. Velasco, under whose direction the department was recently reorganized into six sections. The sanitary code has also been amended.

**Personal.**—Prof. G. Dumas of Paris spent a month recently at Santiago, Chile, where he aided in organizing the chair for an annual five month course of lectures by a French professor, mentioned elsewhere.—Dr. J. A. Presno of Havana, founder and director of the *Revista de Medicina y Cirugía* has been given the decoration of the Légion d'Honneur. The cablegram announcing this was received the day of the opening of the Cuban medical congress, of which he was president.—Dr. Miguel Villavicencio, a prominent Peruvian physician and his wife are about to return to their country after spending several weeks in this country on their return trip from Europe.

#### FOREIGN

**Seventh Centennial of University of Padua.**—Festivities are being planned for this spring in honor of the founding of the University of Padua in 1222. Professor Lucatello, the rector of the university, is in charge of the arrangements.

**Personal.**—Prof. R. Bárány of Upsala was invited to address the Utrecht branch of the Netherlands Medical Association. His topic was the vestibular apparatus and the cerebellum. A second lecture, on the organization of the movements of the eyes, was delivered by request at Amsterdam.

**Merger of Two German Periodicals.**—The *Berliner klinische Wochenschrift* and the *Therapeutische Halbsmonatshefte* have been united to form the *Klinische Wochenschrift*, which enters on its first year this month. It is published by J. Springer of Berlin, and Posner is the editor in chief, as of the weekly predecessor.

**Japanese Donation to Vienna University.**—The *Wiener klinische Wochenschrift* relates that the Japanese ambassador at Vienna has presented the sum of 6,500,000 crowns to the rector of the university as a personal donation to relieve the financial straits of the university, in tribute to the scientific work being done there in spite of the unfavorable circumstances.

**Prophylaxis of Goiter.**—At the recent congress of the Italian Neurologic Society a committee was appointed to study ways for systematic application on a large scale of means to ward off cretinism and goiter in the Italian Alps. The committee consists of three members, Professor and Senator L. Bianchi, Professor Lugaro and Professor Cerletti, working in cooperation with Prof. E. Levi, chief of the Italian Hygiene Institute.

**Scandinavian Neurology Congress.**—The *Ugeskrift for Læger* publishes an appeal signed by two of the leading neurologists in each of the four Scandinavian countries for the organization of the neurologists of the northland. It is proposed to hold a meeting, Aug. 30 and 31, 1922, at Copenhagen to found the Scandinavian Neurologic Society. Dr. Viggo Christiansen, Lille Strandvej 18, Hellerup, Denmark, is the moving spirit in organizing the August meeting.

**International Congress for Sexual Reform on Scientific Basis.**—At the first congress of this nature, held at Berlin in September, as already mentioned, it was decided to hold the next meeting at Rome, in June, 1922. The committee of organization includes Prof. A. Mieli of Rome, Magnus Hirschfeld of Berlin, Havelock Ellis of England and Rutgers of Holland. Prof. A. Mieli is acting as secretary at present. His address is via Casalmonferrato 33, Rome.

**A French Chair in the University of Santiago, Chile.**—Arrangements have been made between the governments of Chile and France by which a course of lectures by a French professor will be delivered at the University of Santiago, the two governments sharing the expense. The *Presse Médicale* of Paris says that a similar arrangement is already in force

with the universities of Bucharest and Madrid. The course at Santiago will cover five months, from April to August. Dr. G. Dumas, professor of psychology at the Sorbonne, Paris, has been in Santiago to complete the arrangement, and the medical faculty elected him an honorary member.

#### Deaths in Other Countries

Dr. Reginald Farrar, department of Epidemics Commission of the League of Nations, died in Moscow, December 28, from typhus fever.—Dr. J. A. Wijnhoff, a prominent internist of Utrecht, long retired from practice on account of chronic glaucoma.—Dr. L. Barreto, dean of the profession at Bogota.

#### CORRECTION

**Potassium Nitrite in Osteomyelitis.**—In this title, published Dec. 24, 1921, page 2091, the word "nitrite" should have been "nitrate."

### Government Services

#### Army Supplies for Russia Relief

The Secretary of War has been authorized by Congress to turn over surplus army medical supplies to the amount of \$4,000,000 to relief organizations for distribution in the famine districts of Russia. The measure passed both the Senate and the House this week, and has gone to the White House for the signature of the President. The original bill passed by the Senate fixed no limit to the amount of medical supplies to be given the Russian relief, but this was amended to a maximum of \$4,000,000. The supplies will be used almost exclusively in the Volga basin and in Russian Armenia, where it is reported that epidemics of malaria, relapsing fever and typhus fever are epidemic. The American Relief Administration is working to eradicate these diseases for the protection of the children, 1,400,000 of whom it is helping. The medical supplies must be used within four months, according to the act.

#### Appropriation for Veterans' Bureau

Administrative expenses of the U. S. Veterans' Bureau are included in an independent appropriation bill presented to the lower house of Congress. Besides covering all other contingent items, the measure carries \$64,658,680 for medical and hospital service. This is an increase over the appropriation for the current fiscal year of \$6,658,680, and is in accordance with the recommendation of the budget bureau. The amount for vocational rehabilitation is \$127,000,000. An appropriation of \$160,000,000 for the payment of claims for military and naval compensation is also contained in the bill.

#### Conference of Neuropsychiatrists in Veterans' Bureau

Director Forbes of the U. S. Veterans' Bureau has called a conference, February 2, of neuropsychiatrists from various parts of the country in Washington, D. C., for the purpose of making recommendations for the care and treatment of former service men now suffering with mental diseases. Ways and means of hospitalization of insane and nervous patients, the question of the necessity of federal commitment and the disposition and permanent treatment of epileptic and mental deficient who can get along without governmental care will be the subjects of discussion at the meetings.

#### Opening of Sanatorium at Dawson Springs, Ky.

Assistant Secretary of the Treasury Clifford has announced that the new government sanatorium at Dawson Springs, Ky., will be formally opened, February 22. The new hospital was erected at a cost of \$2,300,000. Col. H. E. Whitledge, former medical officer at Fort Bayard, N. M., will be superintendent of the Dawson Springs Sanitarium.

#### States Utilizing Service Under Sheppard-Towner Bill

Twenty-two states, thus far, have accepted the provisions of the Sheppard-Towner Infant and Maternity Law, according to announcement made by the Children's Bureau.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Dec. 26, 1921.

#### Conference for the International Standardization of Serums

By permission of the government, a conference on the international standardization of serums has been held at the ministry of health by the health committee of the League of Nations. The president of the committee, Professor Madsen of Denmark, presided. All the principal European countries were represented, including Germany, which for the first time since the war participated in an international congress in this country. Various subcommittees were formed which presented in plenary congress the following reports:

Subcommittee for Antidiphtheritic and Antitetanic Serum (chairman, Dr. Louis Martin, subdirector of the Institut Pasteur, Paris): The committee considered desirable and possible the fixing for these serums of an international unit. For diphtheria antitoxin, two units are at present used: (a) the German, determined in the Frankfort Institute for Experimental Medicine by Ehrlich's method, and (b) the unit determined in the public health bureau at Washington. Between these two units there are only small differences. To determine these accurately, the standard serums and test toxins for the necessary researches will be given to the various participating institutes both by the Frankfort Institute and by the Washington bureau. The result of the experiments performed with these serums and toxins at the several laboratories represented will be delivered on completion to the Danish state serum institute, which will thus act as the central laboratory.

In the case of tetanus, four methods are at present used to describe the potency of an antitetanic toxin, and the exact relation between the units has not been determined. The committee considers that it is desirable and possible to establish a common measure by an agreement on a single standard antitoxin, using the principle adopted in the case of antidiphtheritic serum. In the first instance the participating laboratories must fix experimentally the relations between the four units at present used. With this object, an exchange of serums will be made for the necessary comparative experiments. The results will be sent to the Danish state serum institute and discussed at a subsequent conference.

Subcommittee for Antimeningococcus and Antipneumococcus Serum (chairman, Dr. Dopter of the Institut Pasteur, Paris): In order to obtain full information regarding the various types of meningococci, the several laboratories agree to exchange agglutinating serums and strains of meningococci, the latter to be obtained exclusively from the cerebrospinal fluid of meningitis cases. Macroscopic methods will be used in agglutinating investigations, the bacterial emulsions having been kept for twenty-four hours at a temperature of 37 C., without prejudice to other methods which may also be employed. It appears to be difficult to determine the therapeutic value of antimeningococcus serum by measurement of agglutinins, sensitizers and opsonins. Fresh experiments will be undertaken in the various laboratories regarding the value to be attached to the determination of antiendotoxic and bactericidal power.

For antipneumococcus serum, the following conclusions were unanimously arrived at: (1) Mutual exchange of cultures of different strains of pneumococci will be effected, as in the case of meningococci. (2) Agglutination is of no value in determining therapeutic power. The best method of titrating the serum is measurement of the bactericidal power in animals, preferably mice. (3) New investigations will be

carried out with regard to the best method of inoculation—peritoneal or subcutaneous—for titration of serum; the selection of methods, preventive or simultaneous, for the injection of serums and cultures, and the monovalence or polyvalence of the different serums.

Subcommittee on Dysentery Serum (chairman, Professor Kolle, director of the Institute of Experimental Pathology, Frankfort): The different institutes should exchange serums and toxins, and further experiments should be carried out, using different methods of titration and different species of animals. In testing the potency of serums, antitoxin, especially antiendotoxin, should be estimated, which could be carried out equally well with dead bacilli as with toxin. In testing dysentery serum on mice, a series of tests should be carried out with the standard serum, which the Frankfort institute would supply, and a report would be presented at the next conference. In preparing experimental anti-Shiga serum, the horse should be inoculated only with the Shiga bacillus.

Subcommittee on the Serodiagnosis of Syphilis (chairman, Professor Bulloch of the London Hospital): In a certain number of institutes, the Wassermann reaction as practiced in them should be compared with the methods of Sachs-Georgi, Meinicke and Dreyer-Ward. The number examined in each institute should be 1,000 cases of undoubted syphilis and 1,000 in which syphilis could be excluded as far as possible. The worker should be allowed to study the respective authors' own methods in the respective institutes. All reports should include information as to reliability of method, complexity of technic, relative consumption of time, expense, ease and accuracy with which the reaction can be observed, percentage of dubious results, and how far the results are quantitative.

It is understood that the conference will meet again in six months, probably at the Institut Pasteur, Paris.

#### The Fellowship of Medicine and Post-Graduate Medical Association

The annual report of the Fellowship of Medicine and Post-Graduate Medical Association shows that 305 graduate medical students have availed themselves of the various courses, as compared with 365 in the previous year. That the fellowship is widely known, and that there exists a demand for graduate clinical study in London is shown by an analysis of those who have taken out tickets: Australia, 16; New Zealand, 8; Canada, 58; South Africa, 13; Royal Navy, 8; Royal Army Medical Corps, 10; Indian Medical Service, 15; Colonial Service, 6; India, 27; Egypt, 7; United States, 30; South America, 3; Czechoslovakia, 1; Denmark, 1; Holland, 6; Italy, 1; Japan, 1; Philippines, 3; Siam, 1; Spain, 1; Switzerland, 3; British Isles, 86. The decrease in the number enrolled this year is probably due to the increased cost and difficulty of traveling, and also to the fact that Berlin and Vienna are again taking their places as centers of graduate medical teaching. Quite a number of physicians from this country and from the United States have gone to these cities. This has been facilitated by the depreciation in the currency of Germany and Austria. It is satisfactory that the number of graduate students from Canada and South Africa has increased. A series of general and special courses has been arranged at most of the special, and at two or three of the general hospitals. The first of these, a six weeks' course in general medicine, will begin, January 9. A special fee will be charged for the course, and the number attending it will be limited to twenty. A course in general surgery will follow in February. It is suggested that three or four other such courses will be arranged during the year, as well as short courses on special subjects.



## PARIS

(From Our Regular Correspondent)

Dec. 23, 1921.

## Inauguration of Therapeutic Surgical Clinic

December 17, the president of the republic inaugurated the new surgical clinic established by the Paris faculty of medicine in the vast halls formerly occupied by the Collège des Jésuites, rue de Vaugirard. During the war, these buildings were occupied by the Brazilian Hospital. At the close of hostilities, when the Brazilian surgeons returned home, the Brazilian government generously presented to the Paris faculty of medicine the entire equipment of this hospital, valued at 2,000,000 francs, no inconsiderable sum; but many changes and adjustments were necessary in order to convert this war hospital into a clinic provided with all modern equipment such as is needed for instruction purposes. In 1920, the chamber of deputies voted the necessary funds, and the work was actively begun. The installation of technical apparatus was carried out under the direction of Prof. Pierre Duval, the incumbent of the new chair of clinical therapeutic surgery, which has replaced the former chair of "operations and apparatus," in which the instruction in operative technic was purely theoretical and no longer squared with modern demands. The feature that deserves special emphasis in the equipment of the new clinic is the importance given to the roentgenographic, biologic and chemical laboratories, all of which are in the hands of specialists of incontestable ability.

In recognition of the gift of the Brazilian government, the new clinic bears on its front the inscription: Fondation Francobrésilienne. The Brazilian ambassador, M. da Cunha, was present at the inauguration ceremony and accepted the thanks of the president of the republic for the generous gift of the Brazilian government.

The extensive buildings in Vaugirard Street will constitute a veritable annex of the faculty of medicine, and will contain, in addition to the surgical clinic, a hygienic institute, a biologic institute, a medical clinic and a clinic for contagious diseases.

## Physicians and the War

During the discussion, in the chamber of deputies, on the pension law, a deputy stated that physicians had profited greatly by their experiences during the war and that most of them had derived considerable advantage therefrom in connection with their general practice. Professor Pinard immediately uttered a protest against this charge. After showing that physicians as a class had done their full duty toward their country, he added that the profits derived by physicians from the war, if not actually nil, were at least not worth considering. In an article published in the *Journal des praticiens*, Dr. G. Lemièrre reverts to this subject and analyzes it judiciously. He says that it is no doubt true that the practice of medicine in the army, not so much among the fighting forces and the formations at the extreme front, but more in the hospitals located on the line of communications, gave an opportunity to those who are specializing in surgery to learn many important lessons, and the practice in hospitals was extremely fruitful for all specialists. But for the vast majority of practitioners, for all those who give general treatment or confine their surgical practice to emergency cases, doing an occasional amputation, but who are not likely to see, during their whole life, a case of gas gangrene, and who would not undertake a trephination or a laparotomy without calling in a confrère who makes a specialty of surgery, for such, the war has not brought much in the way of instruction. They have often witnessed great epidemic outbreaks, have suddenly found themselves called on to treat thousands of typhoid, dysentery and influenza

patients. They cared for these as best they could, with great devotion. They used the remedies and the means at their command and not always what they would have liked to employ. Sometimes it happened—a very fortunate situation—that a young practitioner found himself placed in a hospital, under the command of an eminent master, who, in his zeal and interest, was able to find time to give a few lessons still, which aided the young practitioner in perfecting his knowledge of medicine.

These are some of the advantages that the physician has been able to derive from the war; but, along with these advantages, how great have been the disadvantages and the baleful consequences from which the medical world will suffer for many a day. If physicians have profited by the observations on a large number of patients, the belief should not be entertained that that is the sole criterion. It must be remembered that, on the other hand, they were deprived for four or more years of almost all contact with scientific movements. Books were scarce, often impossible to secure. Very often they were lost in the many movings about, or destroyed during the course of bombardments. Medical journals came very irregularly and often not at all. Frequently no time could be found for reading, and sometimes, it must be confessed, there was lacking the necessary courage to read. In any event, if any one was able to derive any advantage from the war, it was not the modest practitioner who practiced medicine in the provinces in 1914. On returning home, after more than four years spent in the army, he finds himself, sometimes at the age of 40 or 45, in much the same position as the young graduate who hangs out his sign the day after he receives his diploma; for, many times, his former clients have grown accustomed to the physician acting as his substitute, possibly an aged confrère who was not mobilized and who is loath to give up the post that he has been occupying during the absence of the regular physician.

## American Honors for a French Professor

At a formal ceremony that took place at the embassy of the United States, the ambassador, the Hon. Myron T. Herrick, presented to Dr. Bergonié, professor of clinical electrotherapy, the Edward Longstreth medal, bestowed by the Franklin Institute (Philadelphia), for the encouragement of mechanical arts. The medal was awarded to Professor Bergonié for his method of localizing, by means of an electromagnet, fragments of metal lodged in the muscular tissues.

As the ambassador presented the medal and the diploma to Professor Bergonié, he stated that he was acting in accordance with instructions from his government, which desired thus to take part in the honors paid to Professor Bergonié by the Franklin Institute. Mr. Herrick then read a letter addressed by the institute to the secretary of state, in which the declaration was made that, owing to Professor Bergonié's labors and discoveries, the lives of many American officers and men had been saved during the war. Professor Bergonié, in accepting the medal, stated that the name of Franklin, with which it was associated, made it especially dear to him, since the work of Franklin constitutes the basis of many scientific discoveries. He added that he was also much pleased to receive the medal from the hands of Mr. Herrick, who, on so many occasions, had shown himself such a firm friend of France.

## The Campaign Against Malaria in Indo-China

The governor general of Indo-China has requested the cooperation of influential citizens in the organization, as a matter of trial, of a mobile service of rural hygiene, to be located in a region judiciously selected. The present limited resources in the way of medical personnel do not permit of much more being done along this line. However, there is



one other thing that can be done, he thinks. Provisions can be made to insure an adequate distribution of quinin, even in the most remote villages of the malarial regions. For some time past, there has been in Indo-China a "state quinin" distributing center, which distributed the drug either gratuitously or at a reduced price. The governor general has decided to develop further this system of furnishing quinin below the normal price, and, with this object in view, he has entrusted the sale of the drug to the collectors of customs and internal revenue, which will obviate the necessity of organizing a new service and will insure the distribution of state quinin under favorable conditions. A recent order also requires dispensers of alcoholics and opium to keep on hand a stock of state quinin and to sell it at definitely established prices which allow them a small margin. The indigent will be given coupons entitling them to receive quinin free of charge at any place where alcoholics are sold.

#### A Film on Milk Production

The Ligue du lait, of which Professor Pinard, a Paris deputy, is president, recently exhibited in a Paris public school a motion picture procured from the United States, the purpose of which was to interest the French public in the various operations through which milk passes, from the time it is drawn from the cow until it is consumed, whereby its absolute purity is assured.

#### Election of Officers of the Academy of Medicine

At a recent meeting, the Academy of Medicine took up the election of new officers for 1922. Professor Béhal, the vice president for 1921, succeeded, in accordance with the provisions of the constitution, to the presidency. Dr. Chauffard, professor of clinical medicine in the University of Paris, was elected vice president (president for 1923). Dr. Souques was reelected annual secretary.

### BELGIUM

(From Our Regular Correspondent)

Dec. 31, 1921.

#### A National League to Combat Venereal Disease

Following the precedent of the Ligue nationale de la tuberculose, a Ligue nationale contre le péril vénérien has recently been formed in Belgium. In fact, it seems to be characteristic of our times for movements displaying remarkable initiative to spring up on every hand. However, two things seem to be lacking which are indispensable conditions for success in any prophylactic campaign; namely, a realization on the part of the public of the nature of the evil and the means of protecting itself against it, and the dispensaries requisite to combat the scourge. The task that the league has set for itself is to spread broadcast a vast fund of information on the subject, which constitutes the basis of all prophylaxis, and to seek to create in the public mind a sanitary conscience, as it were, with reference to venereal disease. The affairs of the league will be directed by a superior council, aided by an executive committee and local committees, and will be composed of three sections, each having its own special work to perform. 1. A medical section will have the task of accomplishing, as far as possible, the sterilization of bacteria carriers, thus completing the work begun by the government. It will make a special endeavor to increase the number of dispensaries in the country. 2. A section on moral propaganda will have the duty of spreading, throughout all classes of society, a knowledge of venereal disease and of the means of protecting oneself against it. The campaign will take the form of lectures, tracts, posters and intensified and long-continued propaganda in the daily press. 3. A section on social aid will occupy itself with the relief of minors, aid for pregnant women with

venereal disease, and the creation of nurseries for infants suffering from hereditary syphilis. The Ligue contre la tuberculose; the Oeuvre de la protection de l'enfance, which we spoke of in a previous letter, and the Ligue contre le péril vénérien will form the nucleus of a vast movement in social hygiene and social welfare which will be directed against the great evils that threaten to disrupt our civilization.

#### Hemorrhagic Pancreatitis

At a recent meeting of the Belgian surgical society, de Beule submitted a communication on eight cases of acute hemorrhagic pancreatitis. He recalled the pathogenesis of this affection as due, in the majority of cases, to the reflux of enterokinase into Wirsung's canal, occasioning the activation of protrypsin and the autodigestion of the pancreas. In five of these cases, cholelithiasis was present, which, by distending Vater's ampulla through excessive dilatation of Wilson's muscle, favors the intestinal reflux. Bacterial origin (influenza, mumps) and blood origin (infarct) are of rarer occurrence. Diagnosis in the superacute cases seems impossible. In the four instances in which de Beule operated in extremely urgent cases, all that could be positively affirmed was a severe peritoneal shock having its seat in the upper abdomen, which, however, was sufficient by way of diagnosis to point to an immediate laparotomy. The tentative diagnoses reached by de Beule in his four cases were: perforated gastric ulcer, insufficiency of a gastro-enterostomy suture, torsion of the mesentery and gangrene of the appendix, respectively. De Beule effected two cures in the four cases. Treatment should consist in the débridement of the pancreas, and drainage. The definite diagnosis becomes established after laparotomy by the existence of so-called "taches de bougie" (candle drippings) and retroperitoneal hematoma. In the subacute cases, evolving in from four to six weeks and ending in pancreatic abscess, de Beule points out two important factors of value in establishing a definite diagnosis, which are: radiating pains in the left lumbar region and symptoms of partial obstruction of the transverse colon. In such cases he had three recoveries in four cases in which operation was performed.

#### The Milk Question

In all western Europe, the milk question has become a pressing problem. All the large cities are already obliged or soon will be compelled to regulate the sale of the limited supply, so that this scarce and valuable product may be reserved for the use of those who need it most. It will be readily understood that under the present conditions much adulteration is practiced. Various medical societies have felt it incumbent on them to tackle the problem. Speaking before the Brussels Royal Society of Medical and Natural Sciences, Monsieur Wauters called attention to the dangers incurred by the general public on account of the present legislation with regard to the sale of milk. As is well known, the watering of milk, being considered an adulteration, is always subject to punishment. However, the decisions of the courts vary greatly in regard to the skimming of milk, most judges holding that the removal of a certain part of the milk does not constitute an adulteration. The well known decision of the appellate court of Liège confirms this finding. Nevertheless, it is absolutely certain that the addition to milk of 10 per cent. of pure water lessens its nutritive value less than the removal of all (or even a considerable portion) of the cream. Besides the question of principle, the courts invoke also the fact that the sale of milk from which a certain proportion of the cream has been removed is regulated by a royal order which fixes the minimal percentage of butter fat at 2.8 per cent. Monsieur Wauters points out that the royal order which requires milk dealers to put on their cans various labels giving the buyer the needed information in regard to the removal of cream



was a matter of necessity, since it is indispensable that some cream be removed for the manufacture of butter. But the sale of skimmed milk without notification of the fact that it is skimmed constitutes a theft and should therefore be regarded as adulteration. The term "adulterated" should be applied to any and all modifications of any article of food offered for sale without the buyer's being informed as to the nature of the modification that the article has undergone. To adulterate signifies, in other words, "to alter with an intent to deceive," and an alteration may be either an addition or a subtraction. Further, Monsieur Wauters referred to the deplorable results arising from the establishing of a minimal butter-fat content. All the large milk establishments that have the means of testing the percentage of butter fat skim their milk down to the minimum (2.8 per cent.). Since the content in butter fat varies greatly with the season, the character of the feed and the time of milking, the application of these regulations is difficult to carry out. Wauters holds that the best remedy against the adulteration of milk would be the establishment of a greater number of intercommunal creameries, which would be more solicitous than privately conducted plants in their endeavors to furnish their customers with a milk as pure and as rich as possible. Since the milk problem is of such paramount importance for infants, children and patients, he proposed that the society should pass a resolution on the subject, to be presented to the public authorities.

#### A Memorial to Léon Stiénon

A group of friends, colleagues and pupils of Prof. Léon Stiénon recently rendered him the tribute of homage of countless admirers on the occasion of the close of his professional career. The modesty of the professor had led him formally to refuse the official demonstration that his pupils had planned. The committee presented the professor with a medallion likeness of himself, executed by the sculptor Bonnetain. All the subscribers to the fund will receive a miniature copy. Stiénon's whole career was in connection with the University of Brussels. He was, in turn, professor of histology and pharmacognosy, and, finally, he was appointed to the chair of pathologic anatomy, which he held until last year. He was also director of the medical clinic.

#### BUDAPEST

(From Our Regular Correspondent)

Dec. 30, 1921.

#### Improvement in the Tuberculosis Death Rate

The untiring efforts of the numerous societies founded for the purpose of stamping out tuberculosis in Hungary have already been rewarded by a steady fall in the annual number of deaths caused by that disease. The official returns for the year 1920 prove that out of 10,000 inhabitants, forty-five died of tuberculosis, while the mortality for the six years before the war was: 1908, 37.6 per 10,000; 1909, 37.1; 1910, 36; 1911, 35.1; 1912, 33.7; 1913, 31.4. It is true that the average death rate from tuberculosis in Germany is only 16.8 per 10,000 inhabitants, but according to Fay, the director of the statistical bureau, if the deaths from all the other diseases of the respiratory organs are included, the total German death rate is in reality no lower than that of Hungary. Another proof of the excellent work accomplished by these societies may be seen in the fact that the Hungarian regiments suffer less from tuberculosis than any other corps of the little entente states.

#### Epidemic of Acute Poliomyelitis

An outbreak of poliomyelitis has been rife in Hungary for the last eight or nine months, and has already claimed many victims among the children of the country. In the majority

of cases the disease is very acute, and there is almost always more than one convulsion. It is believed to have been brought across the frontier from the Balkan States, where a similar epidemic was raging some time ago; but although every precaution has been taken to prevent its spread, up to the present they have been of no avail. The director of the Stefania Children's Hospital, Professor Bokay, has therefore petitioned the minister of public hygiene to order the notification of every case to the local district medical officer, and to empower physicians to remove patients to the hospital if they cannot be properly isolated in their own homes. This request has been granted, and the district medical officers, moreover, have been ordered to send in a monthly report on the progress of the epidemic in their respective districts.

#### Graduate Medical Study in Hungary

The Central Committee of Medical Post-Graduate Study held its annual meeting, Sunday, December 4. Graduate medical study has developed into a powerful organization from a very modest origin, notwithstanding the shorn territory of the country. In the last year the Budapest courses were attended by 147 physicians and the provincial courses by seventy-nine, making a total of 226. Sixty-eight of these courses have enjoyed state support. The committee has distributed 3,000 volumes of medical science, and the municipalities 4,500 volumes. Also money has been distributed among village practitioners to aid them to attend these graduate studies. The ministry of public instruction covers all the expenses involved by the administration and lecturers' fees. In the program for 1922, which will be put together later on, certain new types of courses will be introduced. Besides the four weeks' courses, which serve for more thorough study of a single subject, one-week courses will be held on syphilology, industrial accidents, and modern therapeutics. The chairman of the committee expressed hopes that this year the number attending would be doubled.

#### The Spread of Insanity in Hungary

A startling statement was recently made by Dr. Koloman, a senior physician to the state asylum at Lipotmezo. Dr. Koloman, who has made a careful study of the life histories of the 12,000 patients admitted to the asylum during the last forty years, has come to the conclusion that 53 per cent. of the cases of insanity among professional men were avoidable. Every one of these patients, he tells us, died of paralysis, 29 per cent. being physicians under 36 years of age. As regards physicians over 36, the percentage of deaths from paralysis amounted to 77, while among lawyers who had passed the same age it rose to 89. Out of fifty-three members of the latter profession, ranging from 40 to 60 years of age, fifty-one succumbed to paralysis, and eleven actors admitted to the asylum during the period in question all suffered from the same disease. As regards the prevalence of paralysis in other professions, the army was represented by a fairly large proportion: 94 per cent. of military officers over 26 years of age, and the church by 82 per cent. of Protestant and 42 per cent. of Catholic clergymen. The lowest proportion seems to be found among Jewish school teachers, there being only 6 per cent. under and 40 per cent. over 26 years of age in the total number of cases. On the other hand, the proportion of paralysis among the total number of mental diseases in Jewish merchants over 36 rises to 93 per cent., while in agricultural laborers it is only 25 per cent., and in railway and navigation men 71 per cent., therefore affording conclusive evidence that it is moral conduct, not circumcision, that protects the Jew from syphilis. The connection between paralysis and immorality is clearly proved by the data afforded by the histories of female paralytics, the proportion of paralysis among women between the ages of 16



and 30 being only 2 per cent., while in prostitutes of the same age it rises to 30 per cent., and among women between the ages of 31 and 36, 8 per cent., as compared with the 60 per cent. among their less fortunate sisters. It is surely a significant fact, moreover, that no one has yet seen a paralytic nun. These figures, in Dr. Koloman's opinion, prove that paralysis undoubtedly depends largely on the previous presence of syphilis. There seems every reason to believe, therefore, that only a man suffering from the latter is likely to be smitten by the former, and that he who is free from the one is likely to escape the other. Alcoholism ranks next to syphilis as an etiologic factor of paralysis, and unfortunately, this cause is almost as frequent among the educated as among the uneducated classes. This is proved by the fact that only 9 per cent. of nonparalytics among the physicians owe their mental disease to alcohol, 41 per cent. of the judges, 21 per cent. of the military officers and post officials, and 32 per cent. of the railway employees have been reduced to their present condition by a reckless indulgence in intoxicants. On the other hand, not one of the thirty-three Jewish school teachers suffered from alcoholic mental disease, a fact which also proves that epilepsy is relatively uncommon among Jews. These figures, compiled from observations during forty years, convey an important moral. It is Dr. Koloman's deliberate opinion that all these unfortunate persons could, humanly speaking, have been saved from their disease if in early youth they had learned to resist temptations to drunkenness and immorality. In this respect Hungary compares very badly with such a country as Sweden, for example. While only 1 per cent. of the inmates of the Swedish state asylums are paralytics, the Hungarian establishments contain as many as 18 per cent. suffering from this disease, and, moreover, many of the patients are physicians, lawyers and other professional men who, instead of being an object of expense to the state, ought to be capable of working for twenty or thirty years for their own and the public welfare.

#### New Rules Regulating the Sale of "Patent Medicines"

Up to now, the importation of foreign medicines, and also nostrums into Hungary was allowed in any quantity, regardless of the content of these articles. Lately, the influx of these undesirable materials has attained such proportions that the public, learning the action of these preparations from the advertisements in the lay papers, have bought nostrums in case of illness instead of, first, getting medical advice. The chief medical officer of the city of Budapest, seeing the harmful consequence of this procedure to public sanitation, sent a memorandum to the postoffice, asking the authorities to stop the delivery of articles that are not enumerated in the list compiled by himself. In this list, there are only nostrums which do not contain poisons (such as morphin, mercuric chlorid and strychnin) and which are not supplied with labels giving indications as to their use. When the chief medical officer had made this arrangement with the postal authorities, complaint was made by the pharmaceutical board that the pharmacists had lost more than half of their usual income in consequence of the great influx of foreign nostrums. Nominally, according to the rules of the profiteering act, pharmacists are not allowed to gain more than 20 per cent. on "ready medicaments," including nostrums; whereas, if a medical prescription is brought to them, they are allowed to charge liberal fees, so that the preparing of a prescription brings them more profit than the sale of four or five packages of nostrums. Since, however, the number of prescriptions have recently been greatly reduced on account of the demand for nostrums, the incomes of pharmacists have been lessened considerably. The checking of distribution of "patent medicines" will become a radical remedy to gain: this abuse.

## Marriages

ALBERT GROVES HULETT, East Orange, N. J., to Miss Frances Elizabeth McQuilkin of Orange, N. J., December 19.

LISLE BENJAMIN ROBINSON, Atlanta, Ga., to Miss Effie May Buchanan of Nashville, Tenn., December 28.

LAWRENCE RICHARDSON WHARTON to Miss Louise Wallace Hazelhurst, both of Baltimore, January 10.

HOMER PERSEIUS HARRIS to Miss Margaret R. Wilkinson, both of Montgomery, Ala., December 10.

HUBBARD PRATHER SAUNDERS, Hickman, Ky., to Miss Aileen Rooney of New York City, November 7.

THOMAS ROSCOE ROBERTS to Miss Thelma Louise Daugherty, both of Catoosa, Okla., December 20.

LABASSE JOSEPH ROBIN to Miss Lydia de los Reges, both of New Orleans, December 7.

WALTER FELIS MCCROCKLIN, Louisville, Ky., to Miss Alberta Mae Haller, November 19.

WILLIAM ALBERTUS COVENTRY, Duluth, Minn., to Miss Anna Segerman, December 3.

## Deaths

John Orne Green, Boston; Medical School of Harvard University, Boston, 1866; died, January 5, aged 80. Dr. Green was born at Lowell, Mass., June 7, 1841; received his A.B. from Harvard University, 1863; he studied aural surgery in Berlin, Vienna and Würzburg; lecturer, 1869-1870; instructor, clinical otology, 1875-1878; professor of otology, 1888-1904, at his alma mater; formerly aural surgeon at the Boston City Hospital, the Massachusetts Charitable Eye and Ear Infirmary and the Massachusetts General Hospital, Boston; member of the Massachusetts Medical Society, and president of the American Otological Society, 1908.

Robert Henry Howard, Tuskegee, Ala.; University of Alabama School of Medicine, Mobile, 1911; member of the Medical Association of the State of Alabama; specialized in neurology; formerly served at the Searcy Hospital for the Insane, Mount Vernon, and the Bryce Hospital for the Insane, Tuscaloosa; served during the war as neurologist, U. S. Army; since his discharge, medical examiner for the U. S. Veterans' Bureau; secretary and treasurer of the Macon County Medical Society; died, Dec. 27, 1921, from heart disease, aged 39.

Frederick H. Little ⊕ Muscatine, Iowa; State University of Iowa College of Medicine, Iowa City, 1879; for many years member of the board of health; at one time lecturer in anatomy and physiology, also president and chief surgeon of the Benjamin Hershey Memorial Hospital; former president of the board of education; during the World War he served as president of the exemption board; died, January 11, from cerebral hemorrhage.

Kingman P. Moore, Macon, Ga.; Atlanta Medical College, Atlanta, Ga., 1868; member of the Medical Association of Georgia; and formerly served as president, vice president and secretary of the association; Confederate veteran; former professor of anatomy, physiology and hygiene, Mercer University, Macon; at one time on the board of the Macon Hospital; died, January 8, at Pompano, Fla., aged 77.

Frederick Layman Bunch, Muncie, Ind.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1907; member of the Indiana State Medical Association; formerly surgeon in the army hospital at San Jose, Mexico; served during the World War, with the rank of captain, at Hospital No. 91, Commercy, France; at one time police commissioner of Muncie; died, January 10, from tumor of the stomach, aged 35.

Walter Hoare Moorhouse, London, Ontario, Canada; Trinity Medical College, Toronto, 1874; dean of the Western University Faculty of Medicine, London, for seventeen years, and, for eight years, vice chancellor of the university; former president of the Canadian Medical Association, the Ontario Medical Association and the London Medical Association; died, Oct. 24, 1921, aged 78.

⊕ Indicates "Fellow" of the American Medical Association.



**Joseph Macdonald, Jr.** ☉ East Orange, N. J.; Baltimore University School of Medicine, 1904; formerly president of the U. S. Army Medical Examining Board of New Jersey; during the World War served as major, M. C., U. S. Army; managing editor of the *American Journal of Surgery*; died, January 7, from cerebral hemorrhage, aged 51.

**Edward Vincent Kennedy** ☉ Brooklyn; Long Island College Hospital, Brooklyn, 1919; formerly on the staff of St. Mary's Hospital, St. Catherine's Hospital and St. Joseph's Orphan Asylum, Brooklyn; died, January 10, following an operation for appendicitis, at St. Luke's Hospital, Newburgh, N. Y., aged 29.

**John Park**, Edmonton, Alta., Canada; Trinity Medical College, Toronto, Canada, 1884; registrar-treasurer of the College of Physicians and Surgeons of the Province of Alberta; died, December 24, 1921, from malignant endocarditis with embolism, at the General Hospital, aged 70.

**John Andrew French**, St. Joseph, Mo.; St. Joseph Hospital Medical College, 1880; also a druggist; founder and physician in charge of the St. Joseph School and Hospital for Training Nurses; died, January 3, from cerebral hemorrhage, aged 68.

**James Warner Groom**, Greene, Iowa; Drake University College of Medicine, Des Moines, Iowa, 1911; member of the Iowa State Medical Society; died suddenly, January 6, in his office while attending a patient, from heart disease, aged 39.

**John Herman Warren Meyer**, Lieut., M. C., U. S. Naval Reserve Force, Naval Recruiting Station, Denver; Rush Medical College, Chicago, 1907; died, Dec. 21, 1921, from pneumonia, aged 38.

**Reunette Emmogene Hughes Boone**, Santa Rosa, Calif.; Syracuse University College of Medicine, Syracuse, N. Y., 1881; died, Dec. 10, 1921, following an operation for abscess of the appendix, aged 76.

**Anson Warren Penniman**, Berkeley, Calif.; University of Vermont, Burlington, 1889; Bellevue Hospital Medical College, New York City, 1890; died, Dec. 15, 1921, from angina pectoris, aged 63.

**Julia T. Hill Crawford** ☉ Denver; Hahnemann Medical College and Hospital of Chicago, 1884; Woman's Medical College of Baltimore, 1886; died, Dec. 21, 1921, at Los Angeles, aged 60.

**William Wilkerson**, Memphis, Tenn.; Jefferson Medical College, Philadelphia, 1855; Confederate veteran; also a druggist; died, Nov. 5, 1921, from injuries received in a fall, aged 93.

**Lewis Adisan Fisher**, Byers, Kan.; Medical Department of Butler University, Indianapolis, 1881; member of the Kansas Medical Society; died recently in a hospital at Sterling, aged 64.

**Joseph Birkbeck Burroughs**, Mount Hope, N. Y.; Syracuse (N. Y.) University College of Medicine, 1881; also an explorer; author of several books; died, Dec. 25, 1921, aged 67.

**Sessler Hoss** ☉ Muskogee, Okla.; Southwestern University Medical College, Dallas, Texas, 1905; specializing in pediatrics; died, December 29, from pneumonia, aged 39.

**Joseph Lipman**, New York City; Long Island College Hospital, Brooklyn, 1901; member of the Medical Society of the State of New York; died, Dec. 18, 1921, aged 48.

**Newton Robinson**, Elizabethtown, N. C.; Philadelphia University of Medicine and Surgery, Philadelphia, 1869; Confederate veteran; died, December 20, aged 74.

**Walter M. Pritchett**, Glasgow, Mo.; Vanderbilt University, Nashville, Tenn., 1883; member of the Tennessee State Medical Association; died, December 18, aged 61.

**Harry Hale Ford** ☉ Elmira, N. Y.; Medical School of Maine, Brunswick and Portland, Me., 1884; died, December 25, from cerebral hemorrhage, aged 59.

**Ernest P. Ham** ☉ Gainesville, Ga.; Tulane University of Louisiana, New Orleans, 1888; died suddenly in bed, December 24, from heart disease, aged 58.

**Louis P. Hinn** ☉ Fond du Lac, Wis.; Hahnemann Medical College and Hospital of Chicago, 1885; died, December 31, from cerebral hemorrhage, aged 64.

**Martin Wright Bacon**, Chicago; University of Michigan, Ann Arbor, 1875; one of the founders of the Englewood Hospital, Chicago; died, January 14.

**William Edward Grigsby**, Burlington, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1893; died, January 7, from heart disease, aged 59.

**Lucullus E. Webb**, St. Bethlehem, Tenn.; University of Tennessee, College of Medicine, Memphis, 1883; died, December 27, from paresis, aged 66.

**Sanford R. Perkins**, Delafield, Wis.; Medical College of Indiana, Indianapolis, 1883; first mayor of Wyoming, Ill.; died, December 26, aged 76.

**Lucius J. Tedman**, Summit City, Mich.; Hahnemann Medical College and Hospital of Chicago, 1888; died, October 31, from heart disease, aged 57.

**John W. Porter**, Virginia, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; died, Dec. 22, 1921, from cerebral embolism, aged 67.

**Edward Marshall Phelps** ☉ Basalt, Colo.; Medical Department of the University of Cincinnati, 1896; died, Dec. 6, 1921, from endocarditis, aged 51.

**Marcus Fried**, Portland, Ore.; Medical Department of Columbia College, New York City, 1890; died, December 14, in Los Angeles, aged 62.

**John J. Stoner**, Grand Rapids, Mich.; Hahnemann Medical College and Hospital of Chicago, 1880; also a druggist; died, December 23, aged 74.

**Carlton Theodore Bacon**, La Grande, Ore.; Rush Medical College, Chicago, 1883; president of the state board of health; died recently, aged 64.

**James H. McDaniel**, Carthage, Texas; University of Louisville, Louisville, Ky., 1870; died, December 18, from cerebral hemorrhage, aged 83.

**Marshall H. Keyt**, Berkeley, Calif.; Medical College of Ohio, Cincinnati, 1884; died, December 19, from angina pectoris, aged 60.

**George Owings Graves**, Winchester, Ky.; University of Pennsylvania, Philadelphia, 1851; died, December 26, from senility, aged 93.

**John M. Miller**, Dayton, Wash.; California Eclectic Medical College, Los Angeles, 1889; died in December, from paresis, aged 59.

**Charles Alva McClure**, Eminence, Ind.; University of Nashville, Tenn., 1899; died suddenly, Dec. 28, 1921, from heart disease, aged 62.

**William Wesley Wolfe**, Pittsburgh; Homeopathic Hospital College, Cleveland, 1880; died, December 28, at Rochester, Minn., aged 70.

**Milton Van Pelt**, Cincinnati; Medical College of Ohio, Cincinnati, 1889; died, December 24, from cerebral hemorrhage, aged 64.

**Louise Florence Chamberlayne**, Rochester, N. Y.; Boston University School of Medicine, 1878; died, November 28, aged 76.

**Amanuel B. Mayfield**, Salina, Kan.; St. Louis College of Physicians and Surgeons, St. Louis, 1886; died, November 9, aged 67.

**Clarence H. Scoville**, New Canaan, Conn.; Baltimore Medical College, 1892; died recently from chronic nephritis, aged 70.

**J. Furnam Clinkscales**, St. Louis; Atlanta College of Physicians and Surgeons, Atlanta, Ga., 1913; died, Dec. 16, 1921, aged 38.

**Samuel Henry Honn**, Metcalf, Ill. (license, Illinois, 1878); also a druggist; died, January 1, after a long illness, aged 68.

**Arthur O. Wright**, San Diego, Calif.; Rush Medical College, Chicago, 1890; also a pharmacist; died, Dec. 31, aged 74.

**Foster G. Richardson**, Heber Springs, Ark.; University of Louisville, Louisville, Ky., 1897; died, November 23, aged 52.

**James M. Jamison**, Topeka, Kan.; Meharry Medical College, Nashville, Tenn., 1877; died, December 30, aged 70.

**Milton H. Cravens**, Arlington, Texas; Kentucky School of Medicine, Louisville, 1883; died, Dec. 31, 1921, aged 62.

**George Washington Mangus**, Red Creek, N. Y.; Columbus Medical College, Columbus, Ohio, 1888; died recently.

**E. D. Mann**, Saxapahaw, N. C. (license, North Carolina, years of practice); died, November 21, aged 82.

**Delmar S. Hamilton** ☉ Greybull, Wyo.; Hering Medical College, Chicago, 1895; died recently, aged 52.

**William E. Bone**, Brookland, Ark. (license, Arkansas, 1903); died, Nov. 29, 1921, aged 52.

**B. H. Green** ☉ Warren, Ark. (license, Arkansas, 1903); died, December 19, aged 64.







the stomach cure—"Prescription S." Possibly you have "not been able to find relief elsewhere" for "Exzema and Skin Diseases," if so, by all means try "Prescription E." Or you may have something wrong with the "Kidneys and Bladder." "If these organs are ailing we advise you to see a good doctor at once or if you wish you may order the proper treatment from us." Order, of course, "Prescription K." In this connection it is worth calling attention to the statement made by the concern that "Our physicians will not treat, by mail, cases such as Cancer, Dropsy, Brights Disease, Goitre, Tuberculosis, etc." From this one assumes that the Western Medical Association considers dropsy and Bright's disease as foreign to ailments of the kidneys.

Women are appealed to by urging the "importance of regular menstruation" (spelling original with the Western Medical Association). "If the flow is scant, frequently delayed or especially painful, it is not as nature intended. See your local doctor or let our physicians treat your case." Menstruation commencing with "M" one, of course, should "Order Prescription M."

Because of the number of inquiries received it seems desirable to determine the essential drugs in the "Western Medical Association Treatment" for epilepsy. It was a foregone conclusion that the essential drug was phenobarbital (luminal), as, since this drug has been found useful in the symptomatic treatment of epilepsy, those exploiting medical mail-order cures for epilepsy are using it to the exclusion of the bromid treatment. The Laboratory report follows:

#### CHEMICAL REPORT

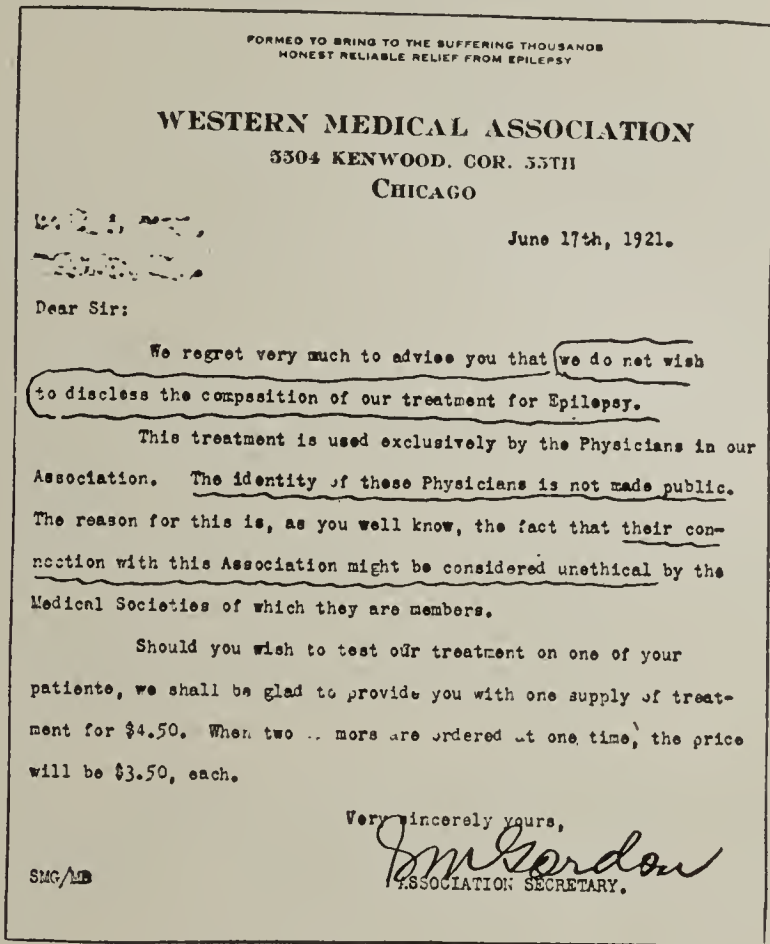
"One original 'Western Medical Association Treatment' was submitted to the A. M. A. Chemical Laboratory with the request that the active constituents be determined. The 'treatment' is sold in three boxes, 'A,' 'B' and 'C' respectively.

"A.—The box contained 30 white tablets, with directions To 'take one at bedtime and one in the morning.' Each tablet weighed approximately 0.1 gm. (1½ grs.). They were found to contain phenobarbital (luminal), starch and a small amount of a substance having the microscopic characteristics of talc. The amount of phenobarbital present was 66.5 per cent., equivalent to 0.66 gm. (1 grain) phenobarbital in each tablet. Bromids were absent.

"B.—The box contained 60 brownish tablets, with directions to 'Take two in the morning and two at noon.' The

rin, thyroid and alkaloids were negative. The 'B' tablets are essentially of the digestive type which contain pepsin and calcium lactophosphate.

"C.—The box contained 30 yellow coated tablets, with directions to 'Take one, two or three at night as necessary to



Photographic reproduction (reduced) of a letter sent to a physician who wrote to the Western Medical Association asking for information regarding the composition of the "treatment" and for the names of some of the physicians who have used it. Note the parts marked.

move bowels freely.' The tablets contain laxative drugs responding positively to tests for emodin-bearing drugs and for aloin."

Summed up then, "this wonderful medicine," which "has been prescribed almost exclusively by world-renowned Specialists who command enormous fees," is essentially phenobarbital (luminal) and a laxative.

## Guarantee Bond

This guarantee is drawn up for the complete protection of our patients and covers all cases of true Epilepsy—no matter how serious. It is backed by the entire Western Medical Association.

### We Hereby Guarantee

#### To Stop Completely All Epilepsy Attacks—Fits

- 1 When every other medicine has failed.
- 2 No matter how often the attacks occur.
- 3 No matter how long the patient has been afflicted.
- 4 No matter whether young or old.
- 5 No matter whether man, woman or child.
- 6 No matter whether hard or slight attacks.

The Western Medical Association absolutely guarantees to promptly and cheerfully return every cent of the patients money, if after using the treatment as directed for 30 days, the patient does not obtain the benefits set forth above.

### We Further Guarantee

- 1 That Western Medical Association treatment contains no poisons of any kind.
- 2 That it contains no habit forming drugs.
- 3 That it will not cause skin eruptions.
- 4 That it will not harm man, woman or child.
- 5 That it will relieve instead of cause stomach trouble.
- 6 That our Physicians medical advice is rendered free of all charge to our patients.

Certified in Full, by All Members

**WESTERN MEDICAL ASSOCIATION, CHICAGO**  
(OVER)

Photographic reproduction (reduced) of the "Guarantee Bond." In the original this is a gaudy affair printed in green ink on saffron-colored paper.

tablets responded to tests for calcium, magnesium (in small amount), lactate and phosphate; bromids were absent. Organic material was present. The tablets had the general appearance and taste of 'Digestive Tablets' still sold by pharmaceutical houses. Such so-called digestive tablets generally have the formula: Pepsin 1 gr., Pancreatin 1 gr., and Calcium lactophosphate 2 gr. These tablets, therefore, were tested for enzymic activity. There was noted a weak peptic activity, indicating the presence of pepsin. There was no positive reaction for pancreatin or diastase, indicating the absence of these substances at least in active form. Test for epineph-

## Correspondence

### "THE BASAL METABOLISM OF MAN IN THE TROPICS"

To the Editor:—Referring to the editorial comment on "The Basal Metabolism of Man in the Tropics" (THE JOURNAL, Dec. 31, 1921, p. 2124), which discredits the work of Dr. de Almeida (who found a lessened metabolic rate) and credits Eijkman's conclusions to the contrary, may I not, "without prejudice" toward either the Brazilian or the Dutch experimenter, recall attention to the observations of Julius Robert Mayer in Java, about 1840, on which, as a matter of historical fact, the physical science of the nineteenth century based its most important developments? Often, it is true, recognition of Mayer's fundamental labors has been withheld; but Tyndall has amply vindicated the claim of the Heilbronner physician to the origination of the broad conception of the conservation and transformations of energy—calling him "the seer," in contradistinction to Rumford and Joule, who were demonstrators in a limited field.

Mayer's work was based on the simple fact that, having shipped as surgeon on a Dutch vessel, he had occasion in



Java to bleed several of the sailors, and observed that their venous blood was much redder than he had found it on venesection in Germany. His reasoning may crudely be summarized thus: "Less discoloration of blood means less carbonic acid, which means less combustion, which means less need for heat. Why? Because a portion of that required is furnished directly by the sun." "The blood," he says, "is the oil of the lamp of life," and only by combustion does the body obtain power to do its work.

With this single fact—the lessened carbonization of the blood which he repeatedly confirmed—and without one other datum for his calculations than the specific latent heat of compressed air, he not only worked out mathematically the mechanical equivalent of heat, but also went on to reason out the doctrine of the universal energy that never disappears, but merely changes form—and under whatever form it manifests, must have been produced by such change from an equivalent quantity of some other form. "Ex nihilo nihil fit" is his repeated text—a commonplace to us, but, in its physical application, a startling innovation to the young doctor's contemporaries. Being without apparatus for experimental verification of his theories, he communicated his results to Liebig, that they might be published and tested. But even the great mind of Liebig was not prepared for the new outlook on the universe. He held the paper for several years before publication—it seemed so revolutionary.

But I do not wish to write either a biography of Mayer—whom physicians should know better than they commonly do—or a history of the natural sciences. I merely wish to show that there is an old and important observation from the Dutch East Indies strongly indicative of lessened oxidation of tissues in tropical climates; and that Dr. de Almeida's experiments are not to be peremptorily ruled out of court.

SOLOMON SOLIS COHEN, M.D., Philadelphia.

#### "A NEW METHOD OF TREATMENT FOR VARICOSE ULCERS OF THE LEG"—"ADHESIVE STRIPS FOR ANAL EXPOSURE IN SURGICAL PROCEDURES"

*To the Editor:*—The treatment of varicose veins of the leg by the adhesive shingle method was taught me by Dr. Joseph Hoffman, now in practice in East Norris Square, Philadelphia, over twenty-four years ago, before I entered medical college, and I have used it continually not only for varicose ulcer, but in nearly all cases in which adhesive plaster is used. Dr. McKnight (THE JOURNAL, Dec. 10, 1921, p. 1890), with Dr. Perilli, is not saying anything new. Adhesive strips were also used by Dr. Hoffman for anal exposure over twenty years ago that I know of in the same manner as suggested by Dr. de Brun (THE JOURNAL, Jan. 14, 1922, p. 111). But it is often advisable to bring old methods to the attention of younger practitioners.

R. W. DICKEY, M.D., Atlantic City, N. J.

#### VENEREAL SPIROCHETOSIS OF RABBITS

*To the Editor:*—May I add a few words to complete Dr. Noguchi's article, entitled "A Note on the Venereal Spirochetosis of Rabbits" (THE JOURNAL, Dec. 24, 1921, p. 2052). Levaditi, Marie and Isaiac (*Compt. rend. Soc. de biol.*, June 11, 1921) and Levaditi, Marie and Nicolau (*Compt. rend. Acad. d. sc.*, June 13, 1921) have reported similarly to Dr. Noguchi on this disease, which they called pseudosyphilis. Levaditi and Nicolau, making inoculations in the forearm to discover whether the disease was virulent for the human being and whether that virus could be used as a vaccine

against syphilis, proved that *Treponema cuniculi* was not virulent for man, because three months after the inoculation no local or general lesion appeared suggesting syphilis, and the Wassermann reaction was negative. The same results were obtained in monkeys.

Considering the multiplicity of spirochetes and the different lesions produced on men and different animals by various forms similar to *Spirochaeta pallida*, I have introduced the word "syphilidogonos," or syphilis producing, for *Spirochaeta pallida*. The barbarians, finding that word long, may try to shorten it by some way or another, but for me, born a Greek, such a mutilation is sacrilegious and I will not sacrifice the grammar and the euphony of my mother language for the sake of abbreviation.

GEORGE M. KATSAINOS, M.D., Boston.

#### RENAL CREPITATION

*To the Editor:*—It has often been asserted that a careful, systematic examination of a patient is the only way to arrive at a definite and clear diagnosis. Recently attention is being more frequently called to the fact that the inspection and palpation in physical examination have been much neglected. Dr. Theodore Ticken of Chicago (THE JOURNAL, June 18, 1921, p. 1735) writes that such negligence is due to the fact that we nowadays leave all to the laboratory and roentgen rays.

Careful bimanual palpation on a patient suffering from renal calculus gave me an opportunity to find a voluminous calculus in the right kidney. Under my hands I felt large stones within the organ, the sensation resembling that when an ice bag is squeezed. I have named this sign "renal crepitation." In this patient, the roentgen rays revealed a double renal calculus. The patient was operated on after we determined the functional power of both kidneys through ureteral catheterization. The left kidney was first operated on and was found to contain three large calculi. Shortly after we intervened on the right kidney and removed a voluminous calculus weighing 90 gm. (3 ounces, 230 grains), the one that gave the sign of renal crepitation.

DR. A. G. CASARIEGO, Havana, Cuba.

#### "DR." AND "M.D."

*To the Editor:*—I fully indorse the suggestion made by Dr. med. M. C. Goy (THE JOURNAL, Jan. 14, 1922, p. 142) of using "Dr. med." before one's name instead of suffixing "M.D." The latter abbreviation is very confusing to foreigners, to whom it really has no meaning, whereas Dr. med. is universally accepted as meaning Doctor of Medicine.

It is very discouraging for a young man to go through the elementary schools, high school, college, and a medical school or university, and then to have his cherished doctor's degree look like the degree of an osteopath, chiropractor or chiropractist. In fact, legislation should be passed whenever and wherever possible that the use of the degree of doctor, physician or surgeon or any degree that could possibly be construed as such be prohibited by any one except he be a duly graduated physician.

Many dentists of late have prefixed Doctor to their names, omitting the word dentist. Chiropractors, osteopaths, chiropractists and Heaven knows who call themselves doctors. In fact, a great many patients, especially foreigners, relating their histories, state that they have been to Dr. So and So, who is a specialist on this or that, and on investigation this so-called doctor is found to be a chiropractor or an osteopath. With the continuous upward trend in regard to the preliminary as well as the medical education of the physician



protection should be given him by the same powers that raise the standard of medical education.

DR. MED. E. G. MARR, Baltimore.

*To the Editor:*—Dr. Goy's communication in THE JOURNAL (Jan. 14, 1922, p. 142) was, I believe, a more proper suggestion than that of Dr. Bassler's, because few of us M.D.'s probably know that even this title (M.D.), which seems to belong only to the physician who is a graduate from a school of medicine, is also in some way taken from us by quacks. I enclose a clipping from a school of so-called "Iridiagnosis" which diagnoses diseases from reading the iris of the eye and offers the degree of "Master Diagnostician."

I would suggest that the full word "medicinae" be used by doctors of medicine; otherwise the abbreviation "Med.," as proposed by Dr. Goy, will soon be utilized in some way by quacks.

JOSEPH ECHTMAN, MEDICINAE DR., New York.

### EPIDEMIC JAUNDICE IN NEW YORK

*To the Editor:*—In THE JOURNAL, Jan. 14, 1922, under Medical News from New York, there is an item entitled "Epidemic Jaundice Suspected in the State," in the course of which it is said that "the state health officers are actively investigating what is suspected to be epidemic infectious jaundice, a disease hitherto rarely reported in the United States." The disease is not rare. I have myself reported two small epidemics (*New York Medical Journal*, Aug. 9, 1913, and June 8, 1918). The disease has not been generally recognized for several reasons. It is usually mild in character. Each physician sees only a few cases, so that he is not aware that there is an epidemic. A large number of physicians still look upon the disease as a digestive disturbance (gastroduodenitis) due primarily to improper food. Many of the cases are associated with acetonemia, and the diagnosis of acidosis is made. This disease is not caused by improper food; it is a specific infectious disease, the infectious material having an affinity for the bile passages in the same way the typhoid bacillus has for the follicular tissue of the intestine. It has all the characteristics of an infectious disease, including a definite seasonal incidence from November to February. We have had a large number of cases in New York City during the last three months.

CHARLES HERRMAN, M.D., New York.

### "LESLIE'S ON CHIROPRACTIC"

*To the Editor:*—Noticing that THE JOURNAL, January 14, made reference to an article on chiropractic, which appeared in *Leslie's Weekly*, I procured a copy of the magazine.

Might I say that this seems a step in the right direction—articles exposing such quackery as chiropractic. I wish that every Fellow of the American Medical Association would buy a copy of Leslie's and read Severance Johnson's article on "Chiro-quack-tic" and then leave it on his waiting-room table for his patients to read, or pass it on to some newspaper editor, in his town or city.

It is high time that the medical profession waked up and did a little "advertising" too. This chiropractic humbug should be exposed, and I think that the American Medical Association, the state medical associations and the county medical societies should evolve some kind of program to enlighten the people on health topics and meet the falsehoods of the present-day chiropractic propaganda, which is a menace to public health.

What do you think?

ADAM P. LEIGHTON, JR., M.D., Portland, Maine.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### BLOOD FOR WASSERMANN TEST

*To the Editor:*—How long after a patient's blood has been drawn can it be used to make the Wassermann test? How long after the blood serum has been extracted can this serum be used for the same test? The director of the Ancón Laboratory states that blood sent from Barranquilla by mail, taking at least four days to reach its destination, has given satisfactory results. All authors consulted by me state that the results are not reliable unless the material is fresh, 24 hours old at the most, and is preserved on ice.

JORGE E. CALVO, M.D., Barranquilla, Colombia.

ANSWER.—While it is true that blood for the Wassermann test gives the best results when it is relatively fresh, yet blood that is 4 or 5 days old will yield reliable results, provided there has been no hemolysis of the red cells and that no bacteria have developed in the specimen. To prevent bacterial contamination, the blood should be placed in a sterile container immediately after withdrawal from the vein, and it may be sent to the laboratory in this container. However, it is much preferable, if one is several days' distant from the laboratory, to separate the serum soon after the blood is withdrawn, conducting all manipulations in sterile containers. Such serum will give perfectly satisfactory results after four or five days.

### SODIUM SULPHATE AND ALCOHOL AS ANTIDOTES FOR PHENOL (CARBOLIC ACID) POISONING

*To the Editor:*—1. Is sodium sulphate an antidote for phenol (carbolic acid)? If so, what is the chemical equation? 2. Is alcohol an antidote for phenol? 3. If not, why is it used after phenol on the appendix stump? Please do not publish my name.

F. A., Ohio.

ANSWER.—1. Sodium sulphate in strong solution is one of the best known antidotes for phenol poisoning. The action is not a chemical one and hence it cannot be represented by the means of a chemical equation (THE JOURNAL, Aug. 12, 1916, p. 535).

2. Alcohol is not an antidote to phenol poisoning. D. I. Macht believes that the use of alcohol as a phenol antidote should be strongly discouraged (THE JOURNAL, July 10, 1915, p. 173). Experiments carried out in the U. S. Hygienic Laboratory show that the toxicity of phenol is increased by alcohol (THE JOURNAL, July 15, 1916, p. 233).

3. It is used in the belief that it will neutralize the action of the phenol and thus prevent extensive sloughing of the tissues. No doubt, the effect of the alcohol is simply that of diluting and washing away the phenol.

### PINUSEPTOL

*To the Editor:*—I wish some information as to the reliability of Pinuseptol, Eli Lilly & Co., for antiseptic preparatory for surgical work. The hospital here has been using a solution of Pinuseptol for sterilizing the hands and instruments preparatory for an abdominal operation in the same manner and with apparently the same confidence that we used to use alcohol, solutions of mercuric chlorid, etc. I fail to find anything mentioned about Pinuseptol in my textbooks, and as this is rather an important matter to determine whether this is really a trustworthy antiseptic or not, I will greatly appreciate any and all information you may be able to give me. If for any reason you do not care to do this I will appreciate your citing me to some authoritative source of information.

N. M. BURNETT, M.D., Lamar, Colo.

ANSWER.—According to the catalogue of the manufacturer, Pinuseptol is a "Pine Oil Disinfectant." The Council on Pharmacy and Chemistry has not examined this proprietary preparation. However, the Bureau of Chemistry of the U. S. Department of Agriculture investigated the general subject and reports that pine oil emulsions made from steam-distilled pine oils, when freshly prepared, give Hygienic Laboratory coefficients varying from 3.42 to 4.34, the average being 3.88. At the end of twelve months the average was 3.66. Pine-oil emulsions made from various grades of pine oils failed to kill *M. aureus* and *B. anthracis* in any dilution capable of emulsification. The government chemists conclude, as a result of their investigation, that these products should not be used for general disinfecting purposes.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vigne, Juneau.  
 CALIFORNIA: Los Angeles, Feb. 13-16. Sec., Dr. Charles B. Pinkham, 342 Flood Bldg., San Francisco.  
 KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.  
 MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.  
 MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.  
 NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools, Part I, Feb. 15-17; Part II, Feb. 20-21. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia.  
 NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
 VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.  
 WYOMING: Cheyenne, Feb. 13-15. Sec., Dr. J. D. Shingle, 206 Citizens Bank Bldg., Cheyenne.

### District of Columbia October Examination

Dr. Edgar P. Copeland, secretary, Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Oct. 11-13, 1921. The examination covered 16 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 10 candidates examined, 9 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	.....	(1920)	89.5
George Washington University	.....	(1921)	86.5
Howard University	.....	(1920) 76.7, (1921) 77.5, 85.6,	85.9
College of Physicians and Surgeons, Boston	.....	(1921)	76.5
University and Bellevue Hospital Medical College	.....	(1902)	87.6
University of Zurich	.....	(1917)*	76
FAILED			
Howard University	.....	(1919)	64.2

\* Graduation not verified.

### Ohio Reciprocity Report

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports that 25 candidates were licensed by reciprocity from July 5 to Oct. 4, 1921. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Fort Wayne College of Medicine	.....	(1895)	Indiana
University of Louisville Med. Dept.	.....	(1911), (1917), (1919)	Kentucky
University of Maryland	.....	(1917)	Delaware
Boston University	.....	(1912)	New York
Harvard University	.....	(1909)	Maine
University of Michigan Medical School	.....	(1911)	Penna.
(1918), (1920), (1921) Michigan	.....	(1920)	Minnesota
University of Minnesota	.....	(1895)	Missouri
St. Louis University School of Medicine	.....	(1920, 3)	Missouri
Albany Medical College	.....	(1905), (1917)	New York
Cincinnati College of Medicine and Surgery	.....	(1889)	Kentucky
Western Reserve University	.....	(1893)	Kentucky
Hahnemann Med. Coll. and Hosp. of Philadelphia	.....	(1915)	Penna.
Jefferson Medical College	.....	(1919)	Penna.
Medico-Chirurgical College of Philadelphia	.....	(1915)	Penna.
Meharry Medical College	.....	(1906)	Kansas

### Porto Rico October Examination

Dr. M. Quevedo Baez, secretary, Porto Rico Board of Medical Examiners, reports the written and practical examination held at San Juan, Oct. 4, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Thirteen candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University	.....	(1921)	77.2
Howard University	.....	(1921)	83
University of Maryland	.....	(1921) 76.6,	80.5
Harvard University	.....	(1921)	82.7
Detroit College of Medicine and Surgery	.....	(1921)	79.8
University and Bellevue Hospital Medical College	.....	(1921)	77
Jefferson Medical College	.....	(1920) 78.2, 83.1, (1921)	80.1
University of Tennessee	.....	(1919)	76.2
Medical College of Virginia	.....	(1916)	75
University of Havana	.....	(1921)*	82.7

\* Graduation not verified.

## Social and Industrial Medicine

### COURT RULES ON VACCINATION

On June 5, 1920, as reported in the *Bulletin of the Chicago School of Sanitary Instruction, Department of Health*, the commissioner served notice on the superintendent of schools that an epidemic of smallpox was impending near a school, and directed the superintendent to exclude for eighteen days all pupils who had not been vaccinated at that time or would not consent to be then vaccinated. Twelve children came back with notices that their parents would not have them vaccinated, and the children were accordingly barred from the school. Damage suits for \$10,000 each were brought by the parents of the children against the superintendent of schools and the principal of the school from which the children were barred. On Jan. 4, 1922, the first of these cases was heard before Judge Joseph B. David and a jury in the Superior Court of Cook County. The judge instructed the jury to find for the defendants. In summing up, the judge said, in part:

The court is of the opinion that it would make no difference whether this boy was legally or illegally excluded from the public schools. There could be no liability under any circumstances unless there was evidence that the defendants, or some of them, acted maliciously.

There is not the slightest evidence in this case that Peter A. Mortenson, Superintendent of Schools; Ernest E. Cole, First Assistant Superintendent of Schools; Rufus C. Hitch, District Superintendent, or Washington D. Smyser, Principal of the Portage Park School, were not acting in good faith, and without regard to the question whether or not there could be any damages flowing to the plaintiff (which the court is of the opinion there is not in this particular law suit), there could be no liability. If public officials are to be subjected to law suits when they exercise discretionary powers and, because they may be mistaken, can be mulcted in damages, then no person would ever accept any public position of any kind. I have been trying to be very patient to see if I could discover some basis upon which there might be a liability, because I do not want to put a man out of court if there is even an iota of evidence or even a probability that the law gives him some remedy.

Surely it was not the province of the principal or the Superintendent of Schools to go out with a fine tooth comb to discover whether or not these children did have smallpox. The Superintendent had a right to act upon the direction of the Health Department, and he cannot be held liable unless it can be shown that he or some of his associates acted maliciously. If a teacher or a principal of the public schools is to be mulcted in damages every time he excludes a child from the public schools, then he would never know when to act.

I do not believe an authority can be found in these United States that would subject a teacher or principal, or a superintendent of schools to damages for excluding a child, even though he did it without authority, if he acted without malice, and that means malice in the ordinary sense of the word—an act done with some wrongful motive. It won't do to say that every time a public official acts, someone is going to sue him. If that was the case, he would never act. I think the Superintendent of Schools in this case is to be commended for the attitude taken.

The Supreme Court of this state has put its stamp of approval in language that anybody can read, thus:

Vaccination is now recognized as the only safe prevention for the spread of smallpox.

It is true that every man and woman has a right to determine for himself or herself whether he or she will be vaccinated. They do not have to believe in doctors; they may say "throw physic to the dogs"; they have a right to do anything they please in that regard so long as they do not injure someone else.

Public officials have a right to be guided by what science has demonstrated to be as near the truth as truth can be ascertained, and science has come to the conclusion universally that vaccination is a preventive of smallpox, notwithstanding that some people may differ with it. Science has agreed upon that proposition and I think the Supreme Court of this state properly has said so, in view of the experience of years, ever since Jenner discovered vaccine.

The parents of this child have a constitutional right, and if they do not want their child vaccinated, he does not have to be vaccinated, but when he goes to the public school they must recognize the greatest good to the greatest number, and if there is danger of smallpox, it is the duty of the Superintendent of Schools to see that the children are vaccinated or that they are excluded from the schools until such time as there is no longer any danger of the disease spreading.

I cannot see the slightest bit of evidence, the slightest basis upon which to predicate a liability in this case.

**Examination of Parents for Syphilis.**—Syphilis may be the cause of miscarriage, stillbirth or of early death from congenital debility, or premature birth. These conditions are so frequently due to syphilis that it is believed advisable to examine the parents for syphilis and test their blood by the Wassermann method in all such cases.—M. Knowlton, *Pub. Health Rep.* 36:2310 (Sept. 23) 1921.



## Book Notices

**STUDIES IN THE PALÆOPATHOLOGY OF EGYPT.** By Sir Marc Armand Ruffer, Kt., C.M.G., M.D. Edited by Roy L. Moodie, Ph.D., Associate Professor of Anatomy in the University of Illinois. Cloth. Price, \$7.75 net. Pp. 372, with 71 illustrations. Chicago: University of Chicago Press, 1921.

Sir Marc Armand Ruffer, who died at the hands of the enemy in the spring of 1917 while returning from Saloniki, where he had gone to reorganize the sanitary service of the Greek provisional government, enjoyed a far more varied career than falls to the lot of most bacteriologists and pathologists. Born in France of a German mother and a French father, educated in Oxford, London and Paris, he spent the greater part of his active professional life in Egypt. With his broad educational background, it is not strange that he became interested in the disclosures of ancient pathology afforded by the excavations of the ancient dead of Egypt, and his many contributions to this subject have been from time to time the subject of editorial review in *THE JOURNAL*. He had planned to retire from active duty in 1919 and to devote himself to the preparation of a work dealing with his antiquarian studies. This having been prevented by his untimely end, Lady Ruffer, his associate in his scientific work, has issued this volume, which deals chiefly with his studies on the evidence of disease in ancient Egypt. The editing has been carried out by that enthusiastic American student of paleopathology, Prof. Roy L. Moodie of the University of Illinois. Not only are strictly pathologic subjects discussed, but many topics of great historical importance, such as the physical effects of consanguineous marriages in the royal families of ancient Egypt, the history of trephining, the effects of diet on teeth, and the court dwarfs as portrayed in Egyptian art, are presented. The medical revelations of this fascinating book are discussed in some detail editorially in this issue. A work of so much permanent value as an historical document is entitled to presentation in the best possible form, with adequate and clear illustrations. These things have been abundantly provided by the publishers, and the work will stand, as intended, as an appropriate monument to a great student and a pioneer in a new department of historical science, paleopathology. At the same time it is one of the most interesting books that have ever been presented on the historical side of medicine.

**THE AMERICAN LANGUAGE.** An Inquiry into the Development of English in the United States. By H. L. Mencken. Second Edition. Cloth. Price, \$6. Pp. 492. New York: Alfred A. Knopf, 1921.

There are certain salient differences between the English of England and the English of America, as practically spoken and written. Because of the free interchange of medical literature, physicians, particularly, are interested in these differences. For example, Mr. Mencken cites early in his book a comment appearing in the *Medical Press and Circular* on an article by MacCarty and Connor, published in *Surgery, Gynecology and Obstetrics*. "In the study of the terminology of diseases of the breast," says the British editor, the authors "suggest a scheme which seems simple; but, unfortunately for British understanding, it is written in American." In his introductory chapter Mr. Mencken shows that there are many basic differences in the languages and that the question has been, heretofore, insufficiently studied. He then traces the beginnings of American from the earliest changes originating with the Pilgrim fathers, through the innovations of successive groups of immigrants to the highly colored language and diction of the present. Mr. Mencken sustains his reputation as a keen observer of contemporary life in our republic, and his text is frequently enlivened by satirical flashes at traits as revealed by language. Of this type is the section on "Honorifics," including paragraphs on the terms "Dr." and "Professor." The section on "Forbidden Words" is a clever study of false modesty as revealed by language. Special mention is made of the literary and newspaper tabu of such words as "syphilis," "gonorrhea," and even "stomach." Among certain tendencies in American, attention is called to the manufacture of verbs from nouns and such usages as "to

operate (transitive)." The latter, the author believes, is almost common usage, and "The Journal of the American Medical Association," he says, "wars upon it in vain." After paying his somewhat caustic respects to American pronunciation, spelling and the common speech, he takes up "Proper Names in America." For those who have given the matter little thought or consideration, this section will prove a revelation in international psychology. The changing of names for esthetic or commercial reasons has long been endemic in America, and with the war became virtually epidemic. The directory department of the Association could provide Mr. Mencken with numerous instances to add to the many amusing and instructive examples which he presents. Sections on American slang, on the future of the language, and several appendixes including examples supplied by "Ring" Lardner and J. V. A. Weaver, and the Declaration of Independence in American by Mr. Mencken complete the volume. It is a praiseworthy and satisfactory treatise of general philologic and psychologic interest.

**PUBLIC HEALTH SURVEYS.** What They Are, How to Make Them, How to Use Them. By Murray P. Horwood, M. S., Ph.D., Instructor Department of Biology and Public Health, Massachusetts Institute of Technology. Foreword by William T. Sedgwick. Introduction by George C. Whipple. Leather. Price, \$4.50. Pp. 403, with 95 illustrations. New York: John Wiley & Sons, Inc., 1921.

One of the interesting attempts made by the American people to remedy the general inefficiency of their municipal governments is the extra-official, privately instigated and supported municipal survey. The facts elicited by such surveys have frequently been the starting point of municipal reform. The public health survey has usually constituted an important part of the general municipal survey, and in some cases has served by itself to draw attention to official shortcomings or municipal parsimony. Numerous sanitary surveys have already been made and published, and the results of widespread experience have become available. This book is a meritorious attempt to utilize the results of these inquiries in a standardization of methods, tabulations, etc. The book contains many useful suggestions for those engaged in the study of public health problems in communities of all sizes and conditions. It will prove a useful guide and handbook. The illustrations are excellent. The bibliography is especially comprehensive. A weak point, and one that should be corrected in subsequent editions, is the lack of a clear, comprehensive scheme indicating just what problems are worthy of attack and how much weight should be assigned to the various portions of the inquiry. The multitude of questions given in the text should be cut down materially. Some of them can serve no useful purpose for public health workers. On page 112, for example, the question is asked, "Is the service of collecting the rubbish and ashes performed free of charge to the residents?" The connection of such inquiries with public health is certainly remote. There are many instances of this sort.

**ACUTE EPIDEMIC ENCEPHALITIS (LETHARGIC ENCEPHALITIS).** An Investigation by the Association for Research in Nervous and Mental Diseases. Report of the Papers and Discussions at the Meeting of the Association; New York City, December 28 and 29, 1920. Cloth. Price, \$2.50. Pp. 258, with 36 illustrations. New York: Paul B. Hoeber, 1921.

This little book is made up of contributions by thirty-five authors, the contributors having been selected by the officers of the Association for Research in Nervous and Mental Diseases. The entire material as originally submitted was sifted, abbreviated and arranged by a competent publication committee. There are two novel features. After an author presented his paper, he was asked such questions as occurred to the commission. In other words, he was asked to defend his thesis or amplify it. These questions and answers are incorporated in the text. At the end of each of the seven chapters are printed the conclusions of the commission. As the commission is made up of exceptionally well qualified neurologists, this feature is not only interesting but very valuable. Every phase of the subject, from history and general considerations to animal experimentation, is covered, and the work as a whole is quite the best thing that has appeared on this polymorphous and puzzling disease. No active internist or neurologist can afford to be without the book.



## Medicolegal

### Use of Parks by Sick and Crippled—Location of "Health Resort"

(*Blackman Health Resort v. City of Atlanta et al. (Ga.)*,  
107 S. E. R. 525)

The Supreme Court of Georgia reverses a judgment that on general demurrer dismissed the plaintiff's petition asking that the defendants be compelled by a writ of mandamus to grant to the plaintiff permission to erect on property which it had acquired adjacent to Piedmont Park, in the city of Atlanta, a building to be used as a "tourist and health resort." The court holds that the building was prima facie included in the class described in the code of the city as "a house to be used as a private sanatorium, hospital or boarding house, or other house of like character, wherein patients are kept and medical or surgical treatment is given." Among the objections urged against the petition was that the property on which it was proposed to erect the health resort was only 115 steps from the entrance to Piedmont Park; that the park would become an annex for crippled and deformed persons; that blood disease patients from the building would use and pollute the swimming pool in the park; that to grant the permit would establish a precedent and render it necessary to permit other hospitals to be located near the park; that children would be kept away from the park by parents on account of the nearness of invalids and convalescents in the building; that the proximity of the park to the building would be used as an advertising feature; that to permit the erection of the building would commercialize the park; that no sanatorium town ever exceeded 50,000 people, and no city known as a health resort ever becomes an up-to-date city; and the sanatoriums do not aid in the effort to establish a city with a population of 500,000. It would seem, however, the court says, that public parks of a city are intended for the free use of sick persons, cripples, invalids and convalescents, as well as persons enjoying perfect health, and children and their nurses. So far as the court is aware, it has never been suggested that any one or more of these classes can be arbitrarily prohibited the use of a public park directly or indirectly, or that their presence is unwelcome. Indeed, the court is of the opinion that a public park is intended primarily for the purpose of benefiting the public health by affording abundance of pure air to those lacking in health, as well as for preserving health. That those having blood disease may pollute the waters affords ample reason for providing reasonable regulations for the privilege of swimming in the lake; but such regulations would seem to be just as imperative to prevent such dangers from diseased persons not patients at the proposed resort or in any hospital elsewhere. The court thinks it obvious that a "tourist and health resort," not only is not per se or in and of itself harmful to public health and morals, but when properly located and conducted, is legitimate, beneficial and humanitarian. Yet, notwithstanding the fact that the business is not per se injurious to public health and morals, it belongs to the class included within the control of the police power of the state; and over the building the municipal authorities may exercise reasonable discretion and supervision to prevent it from becoming a nuisance to the public. It would be an arbitrary and illegal exercise of power to decline the permit, unless it was shown that the building was injurious to health and morals.

### Treatment of Alleged Osteomyelitis with Vaccine—Mistakes in Judgment

(*Edwards et al. v. Uland (Ind.)*, 131 N. E. R. 240)

The Appellate Court of Indiana, Division No. 2, reverses a judgment for \$2,000 damages rendered for plaintiff Uland, who alleged that the defendants had carelessly and negligently advised and used the vaccine treatment for osteomyelitis in the upper part of his left arm. The court says that it appeared by undisputed evidence that when the plaintiff presented himself to defendant Edwards, the latter, after some examination, concluded that it was a case in which he

should have advice and assistance, and therefore, at his suggestion, on the next day, the other defendant was called into consultation, and together the defendants took a history of the ailment, and, learning of past ailment, they stripped the patient, that they might better observe the results of such past ailment and treatment. Numerous scars appeared from previous operations. Because of a history of osteomyelitis, they made use of the common tests to discover the presence of that disease, including pressure, blood count to determine whether there was an increase of white cells, microscopic examination of the blood for infection, test of blood pressure, urine analysis, and finally a roentgen-ray examination of the affected arm, showing, as it appeared to them, that there was a normal condition of the bone. From all of this they determined that there was no osteomyelitis at that time and no need of a surgical operation, and that a vaccine treatment was the proper treatment.

The defendants did not admit that they were mistaken in the method of their treatment, but, even if they were, and the court may add that the fact that there was a speedy recovery following surgical treatment rendered by another physician lent force to the contention that they were mistaken in their treatment, still this was not of itself sufficient to require them to respond in damages. A physician is not ordinarily liable for damages consequent on an honest mistake or error in judgment in making a diagnosis, in prescribing a treatment, or in determining whether an operation is necessary, when there is a reasonable doubt as to the nature of the physical conditions involved, or as to what should be done in accordance with recognized authority, and good current practice. A surgeon might possess great learning and skill, and, when performing a certain operation, might be as careful as possible, yet it might be that a prudent and skilful man of that profession in the same circumstances and conditions would not have performed such an operation; the difference being in their judgment as to the necessity of the operation.

There is no presumption of negligence, or want of skill, from a failure to cure. The mistake of the physicians in this case, if any, was in determining after careful diagnosis the method of treatment that they would follow; that a cure would be effected by the use of vaccine, without surgery. Having determined the method of treatment, had there been a question as to whether they were careless and negligent or unskilful in the use of that method, there would clearly have been a question for the jury as to a fact. But when there is a state of fact conceded or proved, it becomes the duty of the court to draw the conclusion as a matter of law. If there is a conflict of testimony presenting different views of the case from the facts proved, the court is in like manner on these views to draw the proper conclusion that there can be no recovery, for the conflict is one of judgment or opinion, and not of fact. In this case, under the facts proved, there was at most but a mistake in judgment after, as the facts showed, a careful diagnosis of the case. Wherefore the judgment entered on a verdict in favor of the plaintiff is reversed, with instructions to the trial court to grant a new trial.

### Difference in Order Requirements for Administering and Selling Morphin

(*Loewenthal v. United States (U. S.)*, 274 Fed. R. 563)

The United States Circuit Court of Appeals, Sixth Circuit, in affirming a judgment of conviction of defendant Loewenthal, a physician, who was charged with violating the Harrison Narcotic Law, says that, under said act, the defendant, if registered and taxed as a physician, was not required to take a written order, or to keep a record of morphin administered by him to a patient as an element of medical treatment in good faith; but, although registered and taxed as a physician, and only as a physician, he could not lawfully sell, bargain, or give away morphin without at least taking a written order therefor. Again, the court says that the offense was the same, whether the defendant made but one sale without registering, or whether the sale in question was in the regular course of an unlawful business. Nor was a conclusion that the defendant did not buy certain stock for unlawful purposes inconsistent with a conclusion that he actually used portions of it unlawfully.



## Society Proceedings

### WESTERN SURGICAL ASSOCIATION

Thirty-First Annual Meeting, held at St. Louis, Dec. 9 and 10, 1921

The President, DR. CHARLES D. LOCKWOOD, Pasadena, Calif.,  
in the Chair

#### Acute Osteomyelitis; Regeneration of Entire Shaft of Humerus

DR. FRANK G. NIFONG, Columbia, Mo.: This case shows the wonderful capacity provided by nature for the building of new bone after an acute infection. There was an extensive destruction *en masse*. The sequestrum was the entire shaft of the humerus. Only the articular surfaces of the extremities were left with the periosteum or involucrum which was the periosteum, and barely palpable plaques of bone with it. Complete reformation of the humerus took place, and nothing could demonstrate the importance of the periosteum and its function more clearly than this case. In forty days the roentgen ray showed only a nebulous shadow, but in another forty days a definite shaft line was visible.

#### Pathology of Osteomyelitis

DR. ARTHUR C. STOKES, Omaha: In thirty-eight cases of osteomyelitis studied, the age of onset was between 8 and 12 years. The femur was involved more often than any other bone, twelve times; tibia, six; humerus, five; pelvis, four; tarsal bones, four; skull clavicles and phalanges, two each; ribs, fibula, radius and ulnar, five each. In eleven cases, multiple lesions were present. Trauma was given as an etiologic factor in eighteen cases. Distant foci of infection were traced seven times. Staphylococci were present in fifteen cases; streptococci in four. The treatment of osteomyelitis is clear, namely, early thorough opening and perfect drainage.

#### Carpal Bone Fracture Dislocations

DR. KELLOGG SPEED, Chicago: The causative mechanism is practically always in closed fracture a fall on the hand. Immediate and prolonged immobilization of the wrist is the immediate treatment. If the fracture has been neglected, and there is nonunion or cavity formation, excision of the whole bone is necessarily the procedure of choice. A dislocated carpal bone, replaced within a short time after dislocation, might renew its vascular connections and continue to live; otherwise the bone probably will lie in the wrist as an irritating foreign body. The cavity from which any dislocated fragment is extruded tends to shrink rapidly and to become filled with fibrous tissue. It is quite impossible to return the bones to these shrunken areas; it is undesirable to do so, because neighboring bones must not be damaged.

#### The Lesser Injuries to the Back and Their Industrial Significance

DR. OLIVER J. FAY, Des Moines, Iowa: Fractures of the spinous process are numbered among the traumatic lesions whose industrial significance far overshadow their anatomic importance. Formerly a large percentage was grouped under the head of traumatic lumbago. The number of such injuries that have come to me for compensation adjudication have destroyed my faith in the simplicity of the problem. Accurate diagnosis and adequate therapy materially lessen the period of disability in these lesser injuries of the back, but a clearer understanding of the character of such injuries and their prognosis is even more essential if we are successfully to combat the increasing number of cases of compensation neuroses. Prevention is better than treatment, and prevention is possible in a large percentage of these cases if accurate prognosis is made possible by careful diagnosis.

#### Cholecystostomy or Cholecystectomy—Which?

DR. MYLES F. PORTER, Fort Wayne, Ind.: All evidence at hand supports the contention that the gallbladder is an important organ, and evidence is not yet at hand to warrant the conclusion that its removal leads to no serious consequences.

Cholecystic disease frequently, if not usually, originates in the liver. Routine cholecystectomy frequently fails to cure and leads to the removal of healthy gallbladders in more than 4 per cent. of cases. The gallbladder should not be removed unless it has been rendered useless or dangerous by disease.

#### Surgical Treatment of Abscess of the Lung

DR. OSCAR M. SHERE, Denver: A few days of complete rest in bed should precede operation. While brilliant results have been obtained by the use of positive pressure apparatus and intratracheal insufflation in endothoracic operations, I am firmly convinced that their employment is not in the least essential. The ordinary drop method administration of ether or gas and oxygen is fully as efficacious and just as safe to the patient. In the course of animal experiments I developed a technic by means of which the danger of operative pneumothorax may be reduced to a minimum, if not eliminated entirely. When the air is permitted to enter through the pleural opening slowly and gradually, an equilibrium is established between the pressure of the inspired air by way of the trachea and that entering through the thoracotomy opening to the end that respiration is not greatly impeded and dyspnea is comparatively absent. The visceral pleura is exposed and an ordinary cambric needle is introduced and permitted to remain for about two minutes, when it is withdrawn slowly and a small cannula is then introduced through the opening made by the needle and permitted to remain about the same length of time. This is followed by a larger sized cannula and so on until a fair sized opening through a cannula corresponding in size to a No. 16 English catheter has been made in the pleura. The opening is then sufficiently enlarged for the introduction of a rib spreader, and the lung which is devoid of collapse is exposed. The abscess cavity is then located either by palpation or needle, and opened by means of a cautery brought to a dull red heat. Into the cavity a tube is introduced through a large piece of rubber dam, in the form of a cornucopia, which is large enough to be spread over the chest; and into this tampon, strips of iodoform gauze are packed snugly all around the tube. The rib spreader is now withdrawn, no sutures are employed, a large, loose dressing is applied over the tube, and the whole side of the chest is tightly strapped with adhesive plaster. Drainage should be kept up until the symptoms have disappeared, when the cavity will be obliterated and closure will rapidly take place in the majority of cases.

#### Acute Traumatic Abdomen

DR. T. C. WITHERSPOON, Butte, Mont.: Although the preponderance of cases reported are injuries below the umbilicus, there are sufficient numbers of cases occurring with supra-umbilical injury to warrant the inclusion of that area in the so-called danger zone. In any event, the exact location of the external injury cannot be considered as much of a determining factor as can the condition of the abdominal musculature and the underlying bowel at the time of trauma. These two things, along with the character and velocity of the contusing agent, are the essentials in the mechanism of this type of injury. There is but one safe treatment: early exploratory operation. The earlier the operation is done the lower the mortality rate will be. The procedure at the operation is largely a matter of choice in each individual case. It has been our custom to rely entirely on sponging out the offending material with as little trauma as possible.

#### Tumors of the Breast

DR. CARL E. BLACK, Jacksonville, Ill.: Among 107 cases sixty-four were accompanied by a sufficient number of signs and symptoms to justify the diagnosis of cancer. In twenty-six cases there was tumor induration of the breast, permanent, but not accompanied by a sufficient number of signs and symptoms to justify a completed diagnosis of cancer. In thirteen cases the diagnosis was doubtful. Four cases were inoperable. The following rules have been adopted by some hospitals, and are worthy of consideration: (1) In patients under 30, with chronic cystic mastitis a partial excision of the breast may be done in selected cases. (2) In patients



between 30 and 40 with chronic mastitis, the breast, fascia and pectoral muscles should be removed. (3) In patients over 36 with chronic cystic mastitis, a radical operation should be done. (4) In every case of doubt in chronic cystic mastitis, the patient should be given the benefit of the doubt and a radical operation should be performed.

#### Ectopic Pregnancy

DR. JOHN L. EVANS, Wichita, Kan.: The seventeen cases of ectopic pregnancy occurred mostly in women between 30 and 40 years of age. The youngest was 20 and the oldest 46. In three, the rupture occurred near the horn of the uterus; the remainder were of the ampullar type. Many of the women were in extreme shock, showing evidence of marked internal hemorrhage. The diagnosis was made before rupture in only two or three cases. The seventeen women were operated on without a fatality, but in no instance was the operation performed until the patient had at least partially recovered from shock. These women were operated on from twenty-four hours to ten days after their arrival at the hospital.

#### Tuberculous Empyema

DR. LEWIS HUGH MCKINNIE, Colorado Springs: As tuberculous empyema is a complication of pulmonary tuberculosis, frequently of its advanced stages, the prognosis is often grave. The most favorable cases are those without marked lung involvement. Unfortunately, many of the cases encountered are terminal phases of the lung disease or are identified with late and disastrous accidents of the pulmonary tuberculosis, such as the rupture of large cavities into the pleura in individuals whose resistance is already exhausted. Open drainage in tuberculous empyema is an unsatisfactory and often a disastrous procedure when the end-results are considered. The presence of other organisms in the pleural pus besides the tubercle bacillus—mixed infections—is a condition which can be treated successfully by aspiration and air, which is contrary to the usual teaching. The tuberculous base of empyema is often overlooked.

#### The Nontraumatic Acute Abdomen

DR. W. W. GRANT, Denver: The most common causes of this condition are acute infections of the appendix and gall-bladder, perforation of duodenal, gastric and typhoid ulcers, and intestinal obstruction before or after operation. Two conditions in abdominal surgery admit of no operative delay, even in the presence of shock; these are hemorrhage and perforation. The condition and environment of each patient will, as a rule, determine the operative procedure and form and extent of anesthesia.

#### Excision of Ulcer of Duodenum

DR. E. STARR JUDD, Rochester, Minn.: The excision of ulcer is particularly indicated if the entire ulcer can be excised and the duodenal lumen maintained, and if the entire operation can be performed more easily than gastro-enterostomy. If the ulcer is of the type that bleeds during an attack, excision is preferable. If localized pain is one of the chief symptoms and dyspepsia is slight or absent, it is better to excise the ulcer if it can be done readily. If the gastric acids are not high, and especially if the patient has a tendency to neurasthenia, it is best to excise the ulcer rather than to perform gastro-enterostomy. In the operation which I perform, the ulcer is excised without any attempt to enlarge the pylorus. This operation is based on the belief that the ulcer is the cause of the symptoms and that its removal will be all that is necessary for complete relief.

#### Sciatic Hernia and Myxomatous Tumor of Scrotum in the Same Individual

DR. JOHN E. SUMMERS, Omaha: A man, aged 53, had a large, heavy scrotal tumor reaching almost to the knees. It had been in process of growth for three years, as had also a bulging, replaceable swelling in the right gluteal fold. There was a right inguinal hernia, the sac of which reached the upper part of the scrotum; also a small postoperative (appendicitis) hernia in the median line, low down. The gluteal tumor was about the size of a large adult fist and had all the characteristic phenomena of a true ischiatic her-

nia; but, as it was making no special disturbance and was easily reduced, it was not deemed advisable to operate on it, because of other complications due to the scrotal tumor. The scrotal tumor had the gross characteristics of elephantiasis. Under ether it was removed, and found to have a pedicle about half as large as an ordinary man's wrist, passing up in the perineum between the rectum and urethra, and above forming part of a pelvic tumor, which was palpable and reached about one quarter of the way toward the umbilicus. The wounds healed kindly, and roentgen-ray treatments were instituted. A few months later, the pedicle, which had grown downward forming a mass the size of a goose-egg, was removed; the pelvic tumor likewise had enlarged. The pathologic report designated the tumor as a myxoma. The growth of this scrotal tumor follows the embryonic development of the scrotum itself.

#### What Can Be Done in the Apparently Hopeless Recurrent Cases of Carcinoma and Sarcoma

DR. EMIL G. BECK, Chicago: I wish to point out the great advantage of removing the overlying structures, such as muscle, skin and bones, from deep-seated carcinoma and sarcoma to make irradiation more effective. This method has been employed in more than 100 cases in the apparently hopeless recurring or inoperable cases of carcinoma of the breast, neck, rectum and lungs. This method has the advantage of converting the deep-seated tumor into a superficial one, and thus the results are far more satisfactory. Further advantage is the prevention of toxemia.

#### Tuberculous Tenosynovitis of the Hand

DR. ALLEN B. KANAVEL, Chicago: Tuberculosis of the tendon sheaths may occur in both the flexor and dorsal tendons. Diagnosis should be made early on the suggestive fulness over the tendon sheaths, the slight stiffness of the fingers, and inability completely to flex or extend them. One should not wait until rupture has taken place or there has been a destruction of the tendon, which will ensue if the process lasts any length of time. Operative intervention consists in the complete resection and removal of all tuberculous tissue, including the tendon, if necessary, with plastic operation to restore function.

#### Papillary Cystadenoma of the Male Breast

DR. VERNON C. DAVID, Chicago: The literature contains records of only eleven cases of papillary cystadenoma occurring in the male breast. My patient was a man, aged 82. Fifteen years before I saw him he noticed a small lump under the left nipple, and shortly after this a milklike discharge from the nipple began and persisted until local removal of the tumor and nipple three years after its first appearance. About a year after the local removal, a small nodule developed to one side of the scar, and this had slowly increased in size. Later two other nodules developed in close proximity to the first recurrence, and these had slowly but steadily grown for the past eleven years until they had fused together into a three-knobbed tumor, which during the last few years had been attached to the skin overlying the tumor. The skin had become thin, shiny and discolored, ranging from blue at the base of the tumor to red at the apexes of the three prominences. During the last two years a tumor the size of a walnut had developed apart from the main mass at the lower border of the pectoralis major in the lower outer quadrant of the breast. This tumor was only slightly attached to the skin, and had relatively little color change over it. All of the tumor mass was movable on the pectoralis fascia. The axillary glands were not enlarged. The tumor was removed. The microscopic diagnosis was recurrent papillary cystadenoma of the ducts.

#### Diaphragmatic Hernia

DR. ARTHUR T. MANN, Minneapolis: A man, aged 30, had been treated for an ulcer of the duodenum. He applied for treatment of a condition which was diagnosed hernia of the pyloric end of the stomach and duodenum. Operation showed this to be true, and the opening to be a transverse slit in the diaphragm. Three months and a half after operation the patient reported himself free from all gastric disturbance.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### Archives of Dermatology and Syphilology, Chicago

January, 1922, 5, No. 1

- \*Treatment of Antenatal and Congenital Syphilis. J. A. Fordyce and I. Rosen, New York.—p. 1.
- \*Treatment of Syphilis by Mercury Inhalations. H. N. Cole; A. J. Gericke and T. Sollmann, Cleveland.—p. 18.
- Erythema Nodosum Syphiliticum. E. L. McEwen, Chicago.—p. 34.
- \*Excretion of Arsenic After Serial Administration of Arsphenamin and Neo-Arsphenamin. F. P. Underhill and S. H. Davis, New Haven, Conn.—p. 40.
- Elimination of Arsphenamin and Neo-Arsphenamin in Urine. Chemical and Clinical Study of Abelin Reaction. B. B. Beeson and P. G. Albrecht, Chicago.—p. 51.
- \*Itching in Syphilis. W. J. Highman, New York.—p. 63.
- Oriental Sore: Four Cases. D. K. Smith, Toronto, Can.—p. 69.
- \*Epitheliomas of Face and Their Treatment with Radium. H. Morrow and L. Taussig, San Francisco.—p. 73.
- \*Hypothyroidism with Unusual Skin Manifestations. Report of Case. H. P. Towle and E. L. Oliver, Boston.—p. 88.
- \*Fatty Acids of Chaulmoogra Oil in Treatment of Leprosy and Other Diseases. H. T. Hollmann, Honolulu, Hawaii.—p. 94.
- Lichen Planus et Acuminatus Atrophicus. S. Fedlman, New York.—p. 102.

**Treatment of Antenatal Syphilis.**—Fordyce and Rosen urge that every prospective mother should receive a routine Wassermann examination. The proper treatment of a syphilitic mother during pregnancy will undoubtedly result in the birth of a healthy infant. Every infant born of a mother or father with syphilis should have a Wassermann test made at birth; again two weeks later, then every four weeks up to six months, and after that every three months up to two years. If the reaction is negative with all these tests and no clinical signs have appeared, the baby has in all probability escaped the infection. Occasionally an infant with active clinical signs of syphilis will give negative serologic findings, usually only temporarily. The clinical diagnosis should always take precedence over the laboratory diagnosis and proper treatment should be instituted. In the treatment of patients having congenital syphilis, the authors have adopted as the method of choice the systematic intramuscular injection of neo-arsphenamin and mercury. They have been able to obtain negative reactions in fourteen infants out of a total of forty-seven with four plus blood reactions, when the treatment was begun within the first few months.

**Mercury Inhalations in Syphilis.**—Cole, Gericke and Sollmann review the literature and report on their observations with the inhalation of calomel and metallic mercury in syphilis. Inhalations of from 5 to 80 mg., totaling 225 mg. in two weeks, were taken by each of five patients, with active syphilitic lesions. None of these showed any therapeutic response, nor any renal changes. All but one exhibited definite bronchial irritation, salivation and tenderness or edema of the gums. The bronchial irritation and salivation occurred at the time of each inhalation, and were evidently due to direct local contact with the calomel, and not to systemic action. Inhalations of from 5 to 160 mg. of mercury, to a total of from 225 mg. in two weeks to 750 mg. in three weeks, were administered to each of six patients. No systemic or local effects resulted; no salivation (except in one doubtful case) and no sore gums. The weekly dosage amounted to from two to five times the customary intramuscular dosage. It is evident that the absorption must be materially smaller than with intramuscular injections. The results indicate that the administration of mercury compounds by inhalation has no advantage over oral administration; but, on the contrary, it has the serious disadvantage of indefinite dosage, and the consequent difficulty of steering between inefficiency and danger, and of special danger of respiratory irritation.

**Excretion of Arsenic After Arsphenamin Administration.**—The observations made by Underhill and Davis are interpreted to mean that in the early intervals of the serial treatment with arsphenamin and neo-arsphenamin the arsenic compounds are retained in the body up to a point at which the tissues are, as it were, saturated with them. When this

point has been reached further additions of the arsenical preparations are in large measure quickly eliminated from the body. If this interpretation is correct, it would seem logical to modify the serial treatment to the extent that smaller doses may be given when the point of saturation has been reached, unless it is at this point that the initial beneficial influence is exerted. It would appear that the point of saturation is attained at about the fourth injection.

**Itching in Syphilis.**—The outstanding features of Highman's case are the negative history, the negative serum test, the atypical character of the lesions, and above all their itching. Every fact negated the likelihood of syphilis, including the minute anatomy of the lesions, and only the therapeutic diagnostic procedure, with provocation of the Wassermann test, finally solved the problem.

**Radium Therapy of Face Cancers.**—In the treatment of basal cell carcinoma of the face Morrow and Taussig assert it is seldom necessary to employ buried bare tubes of radium. Surface application, except in the deeply infiltrated and very extensive cases, are usually satisfactory. In the great majority of squamous cell carcinomas, buried bare tubes, used in conjunction with surface applications, have been very helpful. In the radium treatment of deep carcinomatous infiltrations, buried bare tubes are almost a necessity.

**Hypothyroidism with Skin Eruption.**—The patient whose case is reported by Towle and Oliver was a young child under their observation on three different occasions. They were able to observe the evolution and involution of each attack from start to finish. The salient characteristics of the various attacks have been the same. The eruption, starting at a given point, would spread by the development of new lesions at a distance until it had become universal. In each attack the primary lesion was a purulent, subepidermal vesicopustule of pinpoint size, which rapidly undermined the lower layers of the epidermis and finally broke through, leaving a jagged tear like that made by a rough-pointed stick pushed through a sheet of paper; marked redness and edematous swelling were present. A high temperature characterized the first two attacks, but not the third.

**Fatty Acids of Chaulmoogra Oil in Leprosy.**—Hollmann states that the fatty acids of chaulmoogra oil, either in the form of the sodium salt or in the ethyl ester, will cause a disappearance of the leprosy bacilli and the lesions of the disease, if administered over a sufficiently long period. From the results obtained in two cases of lupus, the ethyl esters of chaulmoogra oil fatty acids should be given a trial in cases of this disease, as well as in other forms of tuberculosis.

#### Archives of Neurology and Psychiatry, Chicago

January, 1922, 7, No. 1

- \*Prognosis of Involution Melancholia. A. Hoch and J. T. MacCurdy, New York.—p. 1.
- \*Spinal Subarachnoid Block as Determined by Combined Cistern and Lumbar Puncture: Early Diagnosis of Cord Tumor. J. B. Ayer, Boston.—p. 38.
- \*Acute Benign Meningo-Encephalitis with Papilledema. F. Kennedy, New York.—p. 53.
- More Accurate Clinical Method of Diagnosis of Peripheral Nerve Lesions and of Determining Early Recovery of Degenerated Nerve: Report of Cases and Experimental Data. E. Sachs and J. Y. Malone, St. Louis.—p. 58.
- \*Therapy in Neurosyphilis; Intraspinal Therapy. W. F. Schaller and H. G. Mehrtens, San Francisco.—p. 89.
- Significance of Biologic Reactions in Syphilis of Central Nervous System. D. J. Kaliski and I. Strauss, New York.—p. 98.

**Prognosis of Involutional Melancholia.**—The results obtained by Hoch and MacCurdy in a series of sixty-seven cases in which the final outcome was determined in all but one case, cause them to conclude that patients with involution melancholia recover unless they show as dominant symptoms: Marked insufficiency of affect, peevish or auto-erotic behavior, or ridiculous hypochondriac delusions which usually are concerned with the alimentary tract. These prognostically bad symptoms may be present for a short phase of the psychosis in women at the menopause without their prejudicing the outlook for recovery. All patients who eventually recover show some improvement within four years after the onset. The others run a chronic course or die unimproved.



**Cistern Puncture in Spinal Subarachnoid Block.**—By the use of combined cistern and lumbar puncture, Ayer says it is possible not only to obtain fluid above and below a supposed cord lesion, but also to analyze the mechanical factors involved in the flow of the fluid, and thereby estimate the permeability of the subarachnoid space. Where obstruction has been demonstrated by this means, an adequate explanation has been found in seventeen of eighteen cases.

**Papilledema in Meningo-Encephalitis.**—Five cases are cited by Kennedy. None of them has the general coloring usually associated with epidemic encephalitis, but the fact that they have come to notice during the period of incidence of that disease and were known before that time warrants caution about asserting that the two conditions are entirely unrelated. These patients all had evidence of systemic infection, as shown by the presence of a changed blood picture, fever and general malaise. The onset was acute—in some cases sudden, with headache serving as an inadequate warning of trouble to come. In all, a period of stupor was followed by one of excitement or disorientation, which lasted only a few days in most instances, to be followed, as a separate episode, by focal cerebral palsy-hemiplegia, hemianopia, aphasia or cranial nerve inadequacy. The rushing onset of optic neuritis late in the illness, synchronizing with amelioration of symptoms previously acquired, and its rapid amelioration in turn, are phenomena which must surely depend, for their production, on sudden blockings of intraventricular drainage by meningitic exudate, and for their disappearance, on a reconstitution of a normal fluid mechanism.

**Treatment of Neurosyphilis.**—Intravenous and intramuscular therapy caused symptomatic improvement in the majority of cases treated by Schaller and Mehrtens. Serologically only 19 per cent. cleared up entirely. It was more efficacious in the meningeal, vasculomeningeal and diffuse types. Intra-spinal medication was superior to the intravenous and intramuscular methods in its effectiveness in clearing up the spinal fluid. Forty-eight per cent. of the cases became clear through the use of the intraspinal methods as compared to 19 per cent. following the intravenous method. The most useful field for intraspinal therapy is that of the meningo-parenchymatous types, including tabes. However, patients with optic atrophy and with tabes without meningeal reaction received no benefit. Patients with parenchymatous lesions (including paresis) did poorly, but 25 per cent. of the cases thus treated cleared up clinically and serologically. A remission, at least, was effected. Massive rectal injections of neo-arsphenamin (4 gm.) may be substituted profitably for arsphenamin given intravenously in intradural medication when intravenous injection is impracticable. In the treatment of the individual case of neurosyphilis, it would, therefore, seem proper to begin with intensive intravenous and intramuscular medication, particularly in vascular, meningovascular and diffuse lesions. Failure to reduce spinal fluid findings to negative after a thorough trial should suggest the advisability of using more intensive methods. Drainage, combined with intravenous injections, again should be the procedure of choice when the facilities for more complicated methods are lacking or when symptoms of increased spinal fluid pressure are distressing. The Swift-Ellis, Ogilvie or Byrnes method should be reserved for cases resistant to the foregoing efforts. These resistant cases will be found particularly in tabetic patients. Patients with optic atrophy and neurosyphilis without cerebrospinal fluid reaction receive no advantage from intraspinal medication. Patients with inadequate veins can profitably receive the arsenic in the form of massive rectal injections of neo-arsphenamin.

### Boston Medical and Surgical Journal

Dec. 29, 1921, 185, No. 26

Surgical Treatment of Acute and Chronic Pancreatitis. F. B. Lund, Boston.—p. 771.

\*What May Be Expected from Sanatorium Treatment? V. Y. Bowditch, Boston.—p. 776.

Two Different Views of Stammering. E. Tompkins, Pasadena, Calif.—p. 780.

\*Basal Metabolism in Myelogenous Leukemia and Its Relation to Blood Findings. A. H. Gunderson.—p. 785.

**Sanatorium Treatment of Tuberculosis.**—Bowditch is convinced that sanatorium treatment in a properly regulated institution is one of the vital factors in the whole field of efforts to eradicate tuberculosis; an adjunct to every other possible means that can be furnished for its cure and prevention.

**Basal Metabolism in Myelogenous Leukemia.**—The results of Gunderson's observations in nineteen cases indicate that the basal metabolism in myelogenous leukemia bears a relation particularly to the number of immature white cells in the blood stream, regardless of the total leukocytosis. The highest values for the basal metabolism are usually found in cases with very high white counts and many myelocytes, or in cases showing high percentages of myeloblasts. Both of these findings probably signify great activity of the leukopoietic tissue, and the basal metabolism determinations may be considered as indices of this activity.

Jan. 5, 1922, 186, No. 1

\*Spinal Accessory Paralysis Following Neck Dissections. F. H. Lahey and H. M. Clute, Boston.—p. 1.

Recurrent Renal Calculi. J. D. Barney, Boston.—p. 9.

Experiences with Radium. G. C. Wilkins, Manchester, N. H.—p. 14.

Practice of Medicine in Massachusetts. Discussion of Law Governing Registration of Physicians. B. L. Young.—p. 18.

**Spinal Accessory Paralysis Following Neck Dissections.**—In undertaking neck operations for lesions not necessarily fatal, Lahey and Clute believe that the loss of function secondary to spinal accessory paralysis must always be considered of serious consequence, limiting power and motion as it does; and of possible occurrence, first, because there are instances in which it is practically impossible to preserve the nerve and remove the diseased foci, and second, because interruption in conductivity may follow even when the nerve has been preserved. It is their conviction that if one is to undertake neck dissections of the type spoken of above, he should familiarize himself thoroughly with the course and relations of the spinal accessory and second, third, fourth and fifth cervical nerves, and take meticulous pains for their preservation. Among 132 cases investigated there were twelve cases of paralysis, or 26.08 per cent.

### California State Journal of Medicine, San Francisco

January, 1922, 20, No. 1

Prolapse of Uterus with Rectocele and Cystocele; and End Results of Various Operations. A. B. Spalding, San Francisco.—p. 2.

Case of Extrapleural Thoracoplasty. H. A. Johnston, Anaheim.—p. 4.

Urinary Pus Cell Count. L. J. Roth, Los Angeles.—p. 5.

Treatment of Goiter. C. L. Hoag, San Francisco.—p. 6.

\*Laboratory and Clinical Study of Bactericidal Action of Solutions of Radium Emanation. J. A. Marshall, San Francisco.—p. 8.

\*Missing Link in Operative Technic. P. Campiche, San Francisco.—p. 10.

Improvement Following Tonsillectomy Clinically Expressed. H. H. Lissner, Los Angeles.—p. 11.

Tic Douloureux. H. C. Naffziger, San Francisco.—p. 13.

Plastic Surgery in and About Eyelids. R. J. Nutting, Oakland.—p. 15.

Diagnosis and Treatment of Intracranial Hemorrhage of New-Born—Report of Case. E. B. Towne and H. K. Faber, San Francisco.—p. 17.

Ovarian Autotransplantation. F. R. Girard, San Francisco.—p. 21.

\*Chronic Tuberculosis in Early Infancy. R. L. Ash, San Francisco.—p. 27.

Nephrectomy in Hunchbacks—Report of Two Cases. C. D. Lockwood, Pasadena.—p. 29.

**Bactericidal Action of Solutions of Radium Emanation.**—Marshall's work was done on infected teeth. He used Ringer's solution for a vehicle after it had been rendered radioactive by crushing in it a capillary tube containing a known quantity of radium emanation. Favorable results are reported.

**Lack of Nurses.**—Campiche refers to the lack of nurses properly trained to assist at major operations.

**Chronic Tuberculosis in Infant.**—Ash's patient was first seen when 6 months old for difficulty in breathing. The child died at the age of 2 years and 1 month. The mother died of pulmonary tuberculosis when the infant was 4 months old. She had nursed her for the first six weeks of her life; then the child was removed from the home environment. The correct diagnosis was not made until a few months before the child's death. The necropsy disclosed a chronic pulmonary



tuberculosis with cavity formation in left upper and right middle and lower lobes, with a diffuse distribution of conglomerate tubercles throughout the remainder of the lung; bilateral chronic adhesive pleurisy; bilateral cervical adenitis; acute and chronic tuberculous ulcers of ileum; caseous mediastinal and mesenteric lymph nodes; isolated conglomerate tubercle of the left kidney; tuberculous osteomyelitis of right tibia and fibula; tuberculosis of the tarsal bones of right foot with sinus formation; tuberculous necrosis of lower end of humerus and upper end of radius and ulna with involvement of the joint.

### Journal of Cancer Research, Baltimore

April, 1921, 6, No. 2

- \*Study of Lipomyxosarcoma: Origin of Fat Cell. V. C. Jacobson, Boston.—p. 109.
- Parabiosis and Tumor Growth. I. Kross, New York.—p. 121.
- \*Protein Content of Whole Blood and Plasma in Cancer. R. C. Theis, New York.—p. 127.
- Problems in Cancer Research. M. T. Burrows, St. Louis.—p. 131.
- \*Influence of Heredity in Determining Tumor Metastases. Incidence and Inheritability of Spontaneous Tumors in Mice. M. Slye, Chicago.—p. 139.

**Origin of Fat Cell.**—Jacobson believes that the fat cell and the fibroblast (considering the mucous connective tissue cell as a modified fibroblast) are very closely related and that the hypothesis that the fat cell is derived from the fibroblast is to be considered favorably.

**Blood Proteins in Cancer.**—Theis asserts that proteins of the blood plasma are neither decreased nor increased in cancer cases as compared with other hospital patients.

**Influence of Heredity in Determining Tumor Metastasis.**—The studies made by Slye on the metastatic behavior of spontaneous tumors demonstrate that in any given strain the metastatic tumors (where there are any) tend to occur in exactly the same organs in which the primary tumors of that strain occur. In certain strains, there is a tendency for tumors to metastasize in certain organs; whereas in other strains, tumors of the same type in the same organ, even where they are of older and of larger growth, fail to metastasize into those organs. Tumors do not even invade by extension the organs from which primary and secondary neoplasms have been eliminated by heredity. Individuals with secondary tumors in any given organ, seem to be as potent as individuals with primary tumors in the same organ, to transmit by heredity, primary tumors in that organ. Therefore, heredity is a strong factor in determining not only where the primary tumors of a strain shall occur, but also where the secondary tumors shall occur and in determining what organs of a strain shall yield to the invasion of leukemia and pseudoleukemia. The thing which is transmitted in the heredity of cancer is the tendency of an organ or organs to yield to cancer. The tendency to sarcoma, carcinoma, adenoma, etc., segregates out and is transmitted as such. There is a specificity of tissue type, from organ to organ in a strain, which will make these organs react in a given way to a given type of irritation. It is, therefore, possible for ancestry to transmit to its posterity every possible combination of the neoplastic or leukemic tendencies which they carry either actually or potentially. Heredity of a specific type of organ tissue is here shown to be the fundamental influence in determining the incidence and location of secondary tumors and of leukemia and pseudoleukemia, just as it is in determining the incidence and location of primary neoplasms.

### Journal of Industrial Hygiene, Boston

January, 1922, 3, No. 9

- Dust in Printers' Workrooms. C. B. Roos.—p. 257.
- Influence of Industrial Noises. D. J. Glibert.—p. 264.
- Rehabilitation of Employees: Experience with 1,210 Cases. F. S. Kellogg, Pittsburgh.—p. 276.
- Trinitrotoluene Poisoning—Its Nature, Diagnosis and Prevention. C. Voegtlin, C. W. Hooper and J. M. Johnson.—p. 280.

### Journal of Parasitology, Urbana

December, 1921, 8, No. 2.

- Chilomastix Intestinalis Kuczinski. L. Leiva, Manila, P. I.—p. 49.
- Common Infusion Flagellate Occurring in Cecal Contents of Chicken. C. Uribe, Boston.—p. 58.

- \*New Human Trematode (*Heterophyes noccns*) from Japan. W. W. Cort and S. Yokogawa, Baltimore.—p. 66.
- Studies on Microsporidia Parasitic in Mosquitoes. II. On Effect of Parasites on Host Body. R. Kudo, Urbana, Ill.—p. 70.
- Phases in Life History of Holostome, *Cyathocotyle Orientalis* Nov. Spec., with Notes on Excretory System of Larva. E. C. Faust, Pekin, China.—p. 78.
- \*Effect of Poison of Tarantulas. W. J. Baerg, Fayetteville, Ark.—p. 86.
- Unusual Form of Scabies (*Megninia gallinulae* Buchh) in Fowls. A. B. Wickware, Ottawa, Can.—p. 90.

**New Human Trematode.**—*Heterophyes noccns* Onji and Nishio is found in the middle part of the small intestine of man. It is known only from two villages, Onoda and Takachiho, in the Yamaguchi province of Japan. Its eggs were found in thirty-one out of 168 fecal examinations made from the inhabitants of these villages. In the intestine the flukes were found between the villi and sometimes attached to the mucous membrane near the bases of the villi. The structure of the adult of this species is similar to that of *Heterophyes heterophyes* (Looss), which has been known for many years as a parasite of man and other animals in Egypt. The eating of raw fish, especially of the species *Mugil cephalus*, is a common habit in the two villages where *H. noccns* were endemic. Examination of this fish showed the presence of a common encysted agamodistome which is the larval stage of the species. Experimental animals were infected with *H. noccns* by feeding them with fish containing these encysted larvae.

**Effect of Tarantula Poison.**—Experiments on animals and on himself have convinced Baerg that normally the bite of a tarantula is not dangerous to man, and that even a full dose of the poison would probably not produce any very serious results. Neither the pig nor rat used showed any evidence of being poisoned. Baerg allowed himself to be bitten twice and noted no effects, not even local swelling. The tarantula used was a full grown female whose poison apparatus was in good working order.

### Michigan State Medical Society Journal, Grand Rapids

January, 1922, 21, No. 1

- \*Luminal Treatment of Epilepsy. J. M. Stanton, Detroit.—p. 1.
- Perforating Gastric Ulcers. V. L. Tupper, Bay City.—p. 5.
- Glaucoma. R. S. Watson, Saginaw.—p. 9.
- Treatment of Diphtheria Carriers with Mercurochrome or Gentian Violet. U. Estabrook and A. R. Lincoln, Detroit.—p. 13.
- Tuberculoma of Cerebellum. C. McClelland, Detroit.—p. 15.
- Examination of School Children in Grand Rapids, Michigan. F. P. Currier, Ann Arbor.—p. 16.
- Case of Dieulafoy Ulcer of Stomach. C. Kennedy, Detroit.—p. 19.
- Ultraviolet Ray Therapy—Its Application in Nose, Throat and Mouth Affections. L. C. Donnelly, Detroit.—p. 23.
- Mitral Stenosis—Study of Sixty-Two Cases. W. J. Wilson, Detroit.—p. 25.
- Progress and Promise in New Roentgen-Ray Treatment of Cancer. J. T. Case, Battle Creek.—p. 28.

**Luminal in Epilepsy.**—One hundred epileptics have been given luminal by Stanton. In practically all cases there has been a diminution in either the number or severity of the seizures, and in many instances the seizures have disappeared. Luminal accompanied by bromids in the early stages of the treatment has given better results than luminal alone.

### Nebraska State Medical Journal, Norfolk

January, 1922, 7, No. 1

- Epidemic Encephalitis. F. E. Coulter, Omaha.—p. 1.
- Tic Douloureux in Relation to Latent Maxillitis. H. B. Lemere, Omaha.—p. 8.
- Fat Embolism. C. O. Rich, Omaha.—p. 14.
- Problem of Nutrition in Children of School Age. W. O. Colburn and E. V. Wiedman, Lincoln.—p. 17.
- Alkalis in Acidosis. F. Clarke and A. Dow, Omaha.—p. 21.
- Eclamptic Threshold. A. D. Munger, Lincoln.—p. 24.
- Hearing with Eyes. E. B. Kessler, Omaha.—p. 26.
- Surgical Principles of Mouth. A. D. Davis, Omaha.—p. 27.

### New York State Journal of Medicine

December, 1921, 21, No. 12

- \*Hydronephrosis as Gynecologic Problem; Influence of Nephrectomy on Subsequent Pregnancy. A. Morse, New Haven, Conn.—p. 437.
- Abdominal Pregnancy: Two Cases. W. Ward, New York.—p. 441.
- Maternity Hospital as Teaching Center. P. T. Harper, Albany, N. Y.—p. 443.
- Pediatric and Maternity Hospital. R. S. Haynes, New York.—p. 446.



- Treatment of Acute Otitis Media in Children. S. V. Haas, New York.—p. 450.
- Tumors of Bladder. J. N. Vander Veer, Albany.—p. 454.
- \*Preventable Diseases of Adult Life. E. L. Fisk, New York.—p. 459.
- Relation of State Health Department to General Practitioner. M. Nicoll, Jr., Albany, N. Y.—p. 466.
- Universal Military Training: Medical Aspect. D. Bovaird, Clifton Springs.—p. 470.

**Influence of Nephrectomy on Subsequent Pregnancy.**—From the standpoint of prognosis in the event of a future conception, nephrectomy in the child-bearing period, Morse says, is of peculiar significance. In general, the outcome in a subsequent pregnancy is favorable, provided gestation proceeds normally. However, since the remaining kidney may be unable successfully to eliminate the waste products of both mother and fetus, constant supervision throughout pregnancy is necessary. If signs of toxemia appear such as albuminuria, a decreased urinary output or hypertension, the pregnancy must be ended by the method appropriate to the individual case.

**Preventing Diseases of Adult Life.**—Fisk urges that preventive, or rather constructive, medicine should be more thoroughly taught in medical schools. Every graduate in medicine should be equipped not only to make a fundamental physical survey, regardless of his interest in any specialty, but he should be saturated with these fundamental principles which will stimulate him to more enthusiastic cooperation with the demand on the part of the general public for physical inspection and counsel on how to live. Not only schoolchildren, but adults, require to be educated on the value of periodic physical overhauling and hygienic measures, as well as prompt medical, surgical or dental treatment for the correction of defects. The life insurance companies can afford to extend to their policyholders this privilege of periodic physical examinations without charge, as the resultant lower death rate will undoubtedly defray the cost, and the medical profession can afford to cooperate in making these examinations on a moderate basis of cost, inasmuch as the results will be wholly in the interest of scientific medicine. Fisk also urges the creation of a national department of health to coordinate all activities for physical education of schoolchildren and related measures.

### New Orleans Medical and Surgical Journal

January, 1922, 74, No. 7

- Factors Influencing Rate of Mortality in Surgery of Thyroid. J. M. Batchelor, New Orleans.—p. 468.
- Diagnosis and Treatment of Perforating Gastric Ulcer, Report of Two Cases. J. L. Wilson, Alexandria.—p. 473.
- \*Some Causes and Some Results of Chronic Intestinal Toxemia. A. Eustis, New Orleans.—p. 479.
- Diabetes and Pregnancy. I. I. Lemann, New Orleans.—p. 492.
- Management of Smallpox Outbreak. J. Callan, New Orleans.—p. 501.
- Acute Osteomyelitis. I. Cohn, New Orleans.—p. 505.
- Diffuse Gonococcal Peritonitis; Report of Case. E. A. Ficklen, New Orleans.—p. 518.
- Specific Treatment of Malaria. C. C. Bass, New Orleans.—p. 521.
- Necrosis of Skull with Resulting Meningocele; Repair by Tibial Transplant. I. T. Nix and J. M. Perret, New Orleans.—p. 529.

**Causes of Chronic Intestinal Toxemia.**—Eustis asserts that certain cases of intractable intestinal toxemia may be due to intestinal stasis from an anatomic abnormality, which can be relieved only by surgical measures. Some cases of chronic intestinal toxemia may present symptoms of hyperthyroidism, which symptoms are relieved by overcoming the intestinal toxemia. Intestinal toxemia may be the cause of an albuminuria and even of symptoms of uremia, relief of which is complete after control of the intestinal toxemia. Severe pyorrhea may be the cause of an intestinal toxemia, and indirectly the predisposing cause of asthmatic attacks. Illustrative cases are cited.

### Rhode Island Medical Journal, Providence

January, 1922, 5, No. 1

- Acute Appendicitis. C. O. Cooke, Providence.—p. 175.
- Surgery in Diabetics. G. W. Gardner, Providence.—p. 177.
- Thyroid Disease and Its Treatment. F. H. Lahey, Boston.—p. 179.

### Southern Medical Journal, Birmingham, Ala.

January, 1922, 15, No. 1

- Southern Pediatrics—Retrospective and Prospective. W. A. Mulherin, Augusta, Ga.—p. 1.

- Teaching of Neurology, Psychiatry, Psychopathology and Their Relation to Other Specialties. T. A. Williams, Washington, D. C.—p. 8.
- Our Problems. O. H. McCandless, Kansas City, Mo.—p. 17.
- Roentgenologic Diagnosis of Gastric Cancer. R. D. Carman, Rochester, Minn.—p. 20.
- Treatment of Acne by Roentgen Ray. C. Swanson, Atlanta, Ga.—p. 27.
- Malaria Control. J. M. Swan, Rochester, N. Y.—p. 30.
- Relation of Bacterial Count in Milk to Diseases in Children Consuming It. J. R. Snyder, Birmingham, Ala.—p. 33.
- Ideal Obstetrician. G. C. Mosher, Kansas City, Mo.—p. 38.
- Modification of Young's Perineal Prostatectomy. A. J. Crowell, Charlotte, N. C.—p. 45.
- Differential Diagnosis Between Kidney and Intra-abdominal Lesions. J. R. Caulk, St. Louis.—p. 49.
- \*Simple Procedure for Radical Cure of Large Vesical Diverticula. J. T. Geraghty, Baltimore.—p. 54.
- Some Observations on Radical Mastoid Operation. J. H. Foster, Houston, Texas.—p. 58.
- Relationship of Oculist and Aurist to Group Medicine. R. H. T. Mann, Texarkana, Ark.—p. 62.

**Cure of Vesical Diverticulum.**—It is a well-known fact that the removal or destruction of the lining membrane of a cyst or diverticulum is followed by the obliteration of the sac. The application of this principle suggested itself to Geraghty for the handling of large vesical diverticula whose position was such as to make their removal impossible or extremely difficult.

### Surgery, Gynecology and Obstetrics, Chicago

January, 1922, 34, No. 1

- \*Relative Merits of Resection and Gastro-Enterostomy in Treatment of Gastric and Duodenal Ulcer. F. DeQuervain, Berne, Switzerland.—p. 1.
- \*Benign Tumors of Stomach: Report of Twenty-Seven Cases. G. B. Eusterman and E. G. Senty, Rochester, Minn.—p. 5.
- Interstitial Pregnancy: Two Cases. C. Daniel, Bucarest, Roumania.—p. 15.
- \*Essential Hematuria. C. S. Levy, Baltimore.—p. 22.
- \*Obstetric Paralysis of Peroneal Nerve. A. Whitman, New York.—p. 32.
- Congenital Occlusions of Intestines: Multiple Atresia of Jejunum. D. L. Davis and C. W. M. Poynter, Omaha.—p. 35.
- \*Perforations of Esophagus: Report of Case of Transpleural Esophageal Fistula. M. Ballin and H. C. Saltzstein, Detroit.—p. 42.
- Pseudohermaphroditismus Masculinus Internus. D. W. MacKenzie, Montreal.—p. 51.
- \*Sarcoma of Prostate. W. W. Townsend, Burlington, Vt.—p. 55.
- Uteroplacental Apoplexy (Hemorrhagic Infarction of Uterus) in Accidental Hemorrhage. P. Willson, Washington, D. C.—p. 57.
- Treatment of Hip Joint Disease. J. E. Fish, Canton, Mass.—p. 79.
- Clinical Aspect of Tendon Transposition. M. A. Bernstein, Chicago.—p. 84.
- \*Mammoth Ovarian Tumor. J. W. Ward, San Francisco.—p. 91.
- \*Technic of Radium Treatment of Cancer of Prostate and Seminal Vesicles. H. H. Young, Baltimore.—p. 93.
- Results in One Hundred Cases of Cancer of Prostate and Seminal Vesicles, Treated with Radium. C. L. Deming, Baltimore.—p. 99.
- Short Circuit of Vas Deferens. K. P. Moran, Portland, Ore.—p. 119.
- \*Tetanus Complicating Diabetic Gangrene. W. Walters, Rochester, Minn.—p. 122.

**Merits of Resection and Gastro-Enterostomy in Gastric and Duodenal Ulcer.**—DeQuervain asserts that the operative mortality after gastro-enterostomy in this series was 6.5 per cent.; after radical operation, 7.7 per cent. In addition, there are two late deaths after gastro-enterostomy, one from renewed bleeding from the ulcer, the other from perforation of an ulcer pepticum jejuni. The relatively high operative mortality after gastro-enterostomy, DeQuervain says, is dependent on the facts that the stringent rules he has adopted in selecting cases for operation exclude the mild cases of ulcer, and that moderately severe cases are often operated on by resection, so that gastro-enterostomy has been done in a great number of bad cases. The most important causes of death—and really three fourths of the true postoperative deaths are due to lung complications—are emboli, pneumonia and lung gangrene. The statistics from DeQuervain's clinic confirm the old conception that a good share of patients who suffer, following operations on the stomach, with so-called pneumonia, are in reality suffering from a process embolic in nature. In three cases the causes of death were, respectively, bleeding from the existing ulcer, a simple heart failure, and the failure of the suture to hold in a Billroth I operation. Because of the danger of peptic ulcer following operation, and because of repeated bleeding from the primary ulcer, DeQuervain has abandoned schematic gastro-enterostomy and leans more toward resection. He says that 90 per cent. of ulcer recurrences, peptic ulcer and other disturbances, occur



in the first four years after operation, so that statistics which depend on results reported earlier than four years after operation are apt to show too favorable results. Simple gastro-enterostomy produces in all forms of gastric ulcer about the same early results—somewhat more than four-fifths cure or improvement approximating cure. Observations made over longer periods and including all cases show for gastro-enterostomy for all types of gastric ulcer, a cure or improvement in 75 per cent. of cases. In ulcers at a distance from the pylorus the average results are no less favorable than in those at the pylorus. Radical methods, irrespective of interval, show results similar to those in gastro-enterostomy at early period, with a cure in about 80 per cent.

**Benign Tumors of Stomach.**—Benign tumors of the stomach constitute only 1.3 per cent. of all gastric tumors that have come to operation in the Mayo Clinic. Myoma and fibroma constitute the largest group, gastric polyposis the most infrequent. There is no characteristic syndrome and gastric chemism ranges from achylia to hyperacidity with hypersecretion. The majority of the tumors are situated in the region of the pylorus, the greater curvature, anterior and posterior walls. The smaller tumors are practically symptomless unless situated at the orifices or unless multiple. Common complications are recurring hemorrhage, which occurred in 37 per cent., and pyloric obstruction, which occurred in 25 per cent. Palpable mass, food retention or six-hour barium retention is less frequent than in gastric cancer.

**Essential Hematuria.**—The results of a clinical analysis of thirty cases diagnosed essential hematuria are presented by Levy. In more than one third of the cases the onset of the hematuria was in the fourth decade of life. That blood should appear in the urine for the first time in eight cases between the ages of 50 and 70 is interesting and important for ruling out the presence of renal or vesical tumor. The youngest individual in whom hematuria was noted for the first time was 6 years of age and the oldest 70 years. The bleeding occurred in only seven cases before the age of 30. The blood came from the right kidney in seventeen cases and from the left kidney in thirteen cases. In no cases were both kidneys involved, at least simultaneously. The results of operative procedures were not better than those of nonoperative methods. Nephrectomy is the only operation ever indicated, and that only as an emergency measure to save a patient from bleeding to death. Nonoperative methods have been used with success. It is suggested that the pelvis of the kidney be completely distended with fluid whenever intrapelvic injections are employed.

**Obstetric Paralysis of Peroneal Nerve.**—Whitman urges that in any case of paralysis below the knee occurring after prolonged, difficult labor or instrumental deliveries, the possibility of intrapelvic injury to the sciatic nerve should be borne in mind. Apparatus should be immediately applied, to prevent deformity, and to enable the patient to get about with the maximum facility. The prognosis as to ultimate recovery should be exceedingly guarded.

**Perforation of Esophagus.**—Ballin and Saltzstein report a case in which, following thoracotomy for pyopneumothorax, ingested food was discharged through the thoracic drainage opening. This esophageal fistula, after persisting for one year, healed spontaneously.

**Sarcoma of Prostate in Advanced Age.**—Townsend reports a case which occurred in a man aged 71 which he claims is the only one on record in a man of this advanced age.

**Large Ovarian Tumor.**—The tumor in Ward's case was a multilocular cystoma of the ovary which weighed 221 pounds, 12 ounces. The patient survived the operation less than one hour.

**Radium Treatment of Cancer of Prostate.**—Young claims for his technic that by it remarkable results are often obtained in apparently incurable and very extensive cases of carcinoma of the prostate and seminal vesicles. Extraordinary functional results are sometimes obtained with relief of pain, hematuria, difficulty and frequency of urination and attending discomforts. In some cases apparently radical cures have been obtained.

**Tetanus Complicating Diabetic Gangrene.**—The case recorded by Walters seems to demonstrate that tetanus may develop as a terminal infection in patients with diabetic gangrene, and that prophylactic treatment is indicated in certain cases.

## FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

Dec. 24, 1921, 2, No. 3182

\*Influence of Foods Rich in Accessory Factors in Stimulating Development in Backward Children. H. Chick and E. J. Dalyell.—p. 1061.

\*Etiology of Rickets. C. B. Sweet.—p. 1067.

Diagnosis and Treatment of Perforated Duodenal Ulcer. F. K. Smith.—p. 1068.

\*Blue Sclerotics and Brittle Bones, with Macular Atrophy of Skin and Zonular Cataract. O. Blegvad and H. Haxthausen.—p. 1071.

Difficulties in Diagnosis and Treatment of Hepatic Abscess. G. J. Langley.—p. 1073.

Sudden Death from Asphyxia Following Regurgitations of Semi-digested Food. E. Emrys-Roberts.—p. 1074.

Case of Peliosis Rheumatica. H. V. Jackson.—p. 1074.

**Influence of Foods in Stimulating Backward Children.**—The addition of antiscorbutic juices and of fats containing the fat soluble accessory factor was found by Chick and Dalyell to have a satisfactory result in stimulating growth and progress of nine very backward children, varying in age from 12 to 31 months. Eight of the nine children treated gave a history of previous attacks of definite scurvy, and two showed bony deformities which were probably of scorbutic origin. The cases studied indicate that the child's capacity for recovery is considerable when conditions of deprivation are rectified; the normal standard could be approached in from six to twelve months, even after twenty-four months of retardation in growth and progress.

**Etiology of Rickets.**—That rickets is due to a deficiency of fat soluble A vitamin in the diet, Sweet says, has not been proved. It is primarily due to a diet actually deficient in fresh animal food, probably suitable protein, or to a disturbed digestive condition which prevents the assimilation of the same. The striking metabolic changes in rickets are due secondarily to a deficiency of secretion of one or more of the endocrine organs and probably chiefly of the thymus gland. Confinement in young animals, with its attendant evils of lack of sunshine, exercise and cleanliness are important factors in increasing the severity of the disease.

**Blue Sclerotics and Zonular Cataract.**—The most interesting feature of the case cited by Blegvad and Haxthausen was the zonular cataract which is a hereditary affection, and which has not been described before in connection with Eddowes' complex of symptoms. Further, there is the particular change in the skin which, in its development and appearance, corresponds to a description given for the first time by Thibierge, who called it *athrophodermie érythémateuse en plaques à progression exentrique*. A similar case, differing, however, in some points, was reported later by Yadassohn, who proposed the name *anetoderma erythematosodes*. The name that has been used in most of the recent publications is, however, *atrofia maculosa cutis*.

Dec. 31, 1921, 2, No. 3183

\*Present Position of Treatment of Carcinoma of Cervix. W. F. Shaw.—p. 1101.

\*Radical Abdominal Operation for Carcinoma of Cervix. V. Bonney.—p. 1103.

\*Modern Operation for Cancer of Breast. R. Coombe.—p. 1106.

Gonorrhoea Treated by Electrolysis: Results in 500 Cases. C. Russ.—p. 1108.

\*Treatment of Neglected Cases of Club Foot. W. P. Noall.—p. 1109.

\*Pigmentation of Vermiform Appendix. E. M. Cowell.—p. 1111.

Thrombosis of Inferior Vena Cava: From Puerperal Sepsis. R. R. Kerr.—p. 1112.

Common Changes in Erythrocytes. R. Craik.—p. 1113.

Case of Aneurysm of Superficial Palmar Arch. E. O'G. Kirwan.—p. 1113.

Varicocele in Female. E. L. Rowse.—p. 1114.

**Treatment of Cancer of Cervix.**—In Shaw's opinion at the present time the best hope of complete cure of cancer of the cervix lies in the combination of radium with Wertheim's hysterectomy.



**Efficacy of Wertheim Operation.**—Bonney analyzes 100 cases in which an extremely radical Wertheim operation was done at least five years ago. Twenty patients died of the operation; thirty-three died of recurrent growth; three died of other disease; four were lost sight of and forty are well after five years. These cases also show that secondary carcinomatous deposit in the regional glands may exist at the time of the operation and yet a good result be obtained. Bonney points out also that a small proportion of recurrences, probably about 5 per cent. of the total number, do occur after five years. Therefore, an absolute cure should not be claimed for anything under seven years' freedom from recurrence. Out of the eighty patients who recovered from the operation forty-eight, or 60 per cent., had their life prolonged as the result of the operation. Perfect operative skill is of vital importance in securing these results. Bonney and his colleague, Berkeley, have reduced their operation mortality from 20 to 6 per cent. This improvement is said to be due to four factors: (1) spinal anesthesia, (2) the use of "violet green" to sterilize the vagina, (3) suturing the vagina, and (4) increased operative dexterity.

**Operation for Breast Cancer.**—Combe gives the technic of an operation for which he claims much. A large portion of the arterial supply to the breast is cut off quite soon by the early division of the vessels derived from the axillary artery; there is thus no waste of time due to frequent redvision of the branches of these vessels, and there is much less loss of blood from the operation as a whole. Care is taken to make the lower external flaps of the amputation first; these incisions are thus not obscured by blood trickling down. Shock is minimized by postponing to the end of the operation the severe mutilation involved in the actual amputation of the breast; moreover, this large area is kept quite warm during the slower dissection of the axilla by a dry thick flannel placed over it. Manipulations are minimized and disturbance of malignant cells thus avoided; cut lymphatics are turned downward and forward out of the wound, and so again the risk of infection is minimized. Especially there is no manipulation of the main tumor while the axilla is being dissected.

**Operation for Club Foot.**—Noall follows closely Rowland's operative technic, removing portions of the astragalus, os calcis, scaphoid and cuboid to remodel the foot.

**Pigmentation of Appendix.**—Cowell's patient was of a naturally dark complexion, showed a sallow skin, yellowish sclerotics, and a dirty tongue. The urine was normal; the actions contained bile. On pressure deep tenderness in the right iliac fossa was obtained, and Rovsing's sign was elicited. A diseased appendix was removed. It was of a slaty grey color, and when slit open the mottled pigmentation was very striking. Six months later the improvement in both the general appearance and symptoms of this patient was remarkable. Cowell suggests the probability that all these changes are closely related to avitaminosis, since all the pathologic conditions mentioned have been produced experimentally in animals by appropriate diets.

### Journal of State Medicine, London

December, 1921, 29, No. 12

Influence of Atmospheric Conditions on Industrial Efficiency. H. M. Vernon.—p. 353.

Administrative Control of Tuberculosis. J. Crockett.—p. 363.

Civic Control of Tuberculosis. R. V. Clark.—p. 372.

### Journal of Tropical Medicine and Hygiene, London

Dec. 15, 1921, 24, No. 24

\*Exceptional Tropical Ulceration. R. W. Mendelson.—p. 317.

Treatment of Blackwater Fever. N. Crichton.—p. 318.

Treatment of Trypanosomiasis by Various Methods. C. L. Trout.—p. 321.

**Monilia in Leg Ulcer.**—Three cases of "leg ulcers" are reported by Mendelson in which the exciting cause proved to be a monilia. These three patients had all resided at the seashore for a short time in order to miss the hot season of the city and while there contracted in various ways small and insignificant abrasions which after a short time developed into very small ulcers. A rich monilia growth was obtained on glucose-agar. The cardinal symptoms in these cases were constant pain, which is unusual in an ulcer that reaches a

chronic stage, and swelling of the part affected. The application of ointments has a tendency to break down the edges of the ulcer and allow it to spread. Alcohol, if it is to be of any use, must be constantly applied, and although the secretions are lessened and the base of the ulcer becomes healthy looking, the granulations are hardened and do not grow, and as soon as the alcohol is stopped the secretions become profuse. Freezing with ethyl chlorid has a marked, but temporary effect, especially as regards the pain. The natural tendency is to complete cure in from two to three months with slight scar formation and pigmentation.

### Lancet, London

Dec. 17, 1921, 2, No. 5129

\*Origin of Anginal Syndrome. C. Briscoe.—p. 1257.

\*Spasmodic Respiratory Affections. J. P. Stewart.—p. 1261.

Nose, Throat and Ear Requirements of Airmen. D. Ranken.—p. 1263.

\*Alimentary Infections in Chronic Arthritis. N. Mutch.—p. 1266.

Chronic Suppuration of Middle Ear. A. G. Wells.—p. 1268.

Normal Limit of Agglutination for B. Dysenteriae (Flexner) and Sensitiveness of Suspensions. A. D. Gardner.—p. 1269.

\*Cases of Infected Knee Joint. P. Weatherbe.—p. 1271.

Case of Pyocoele of Frontal Sinus. J. A. Gibb.—p. 1272.

Case of Syringomyelia. W. S. Robertson.—p. 1272.

Para-Urethral Gonorrhea. F. Chamberlain.—p. 1273.

Fatal Case of Delayed Neo-Salvarsan Poisoning. D. R. C. Shepherd.—p. 1273.

**Origin of Anginal Syndrome.**—While testing the action of accessory muscles concerned in respiration Briscoe noted that some of these muscles varied greatly in intensity of action and stress in different positions of the body, and in different circumstances. When under stress these muscles became tender, and when pressure was made on these tender muscles the pain produced was not always a mere local sensation, but was referred to wide areas very similar to those concerned in angina. Next he found that in some cases which had suffered from anginal type of pain, pressure on certain of these muscles produced pain like that of the attack, and finally in some cases of angina relief of tension in these muscles was followed by cessation of pain. It is quite evident that overfatigued muscles give rise to referred pain in distant areas. The upper thoracic respiratory mechanism is excessively active under the same conditions in which attacks of angina pectoris usually occur, and stress of this nature affords a better explanation for nocturnal attacks than does cardiac strain. The respiratory muscles of this region, when hypersensitive, are the last structures in the segment to lose local tenderness and the faculty of producing referred pains by pressure. When these muscles are hypersensitive and subjected to pressure the areas to which pain is referred correspond to those similarly affected in angina pectoris, and are frequently recognized. A phenomenon is demonstrated by Briscoe which offers an explanation for the warning and sequence of spread of pain in angina pectoris. This is dependent on irritation of one of the expiratory muscles involved, and results in marked thoracic elevation. Treatment by alleviating the stress of these muscles has frequently—not always—been effective in relieving the pain without other treatment. Two attacks of angina pectoris have been observed as the result of irritation of respiratory muscles. Briscoe submits that the phenomena generally which accompany an attack of angina pectoris can equally well be explained on a respiratory hypothesis as on one of vascular origin. Further the age incidence of angina pectoris corresponds with that of ossification of the ribs and cartilages—a source of increased difficulty in respiration.

**Spasmodic Respiratory Affections.**—Stewart discusses hiccup, whooping cough, laryngismus stridulus, tetanus, rabies, epilepsy, chorea, paralysis agitans, hysteria and habit spasms.

**Alimentary Infections in Chronic Arthritis.**—An analysis of 200 cases was made by Mutch. Gout, venereal or tuberculous disease of the joints, and all cases of monarthritides have been excluded. Active sepsis was present in the throat and nose in 34 per cent. and around the teeth in 52 per cent., while infective streptococci were recovered from the feces of 84 per cent. Most of the infections are streptococcal, but a few are staphylococcal. In the present series the latter were only 4 per cent. of the whole. In about one third of the cases abnormal forms of the colon bacillus of the nonlactose fer-



menting or late lactose fermenting varieties were found in association with the cocci. In the diffuse infections the streptococci are distributed along the alimentary tract in a definite pattern. In the pelvic colon they are much less numerous than the colon bacillus. In the ileocecal region they become more conspicuous and at the higher levels are usually present in pure culture. Streptococci predominate in the small bowel and the colon bacillus in the large bowel. The precise level at which transition takes place from streptococcal to *B. coli* dominance varies in different patients, probably on account of variations in the chemical nature of the contents of the bowel determined by differences in diet, peristalsis, and ferment efficiency. The point of transition is usually in the ileocecal region, but may be on either side of the ileocecal valve. The condition of the alimentary tract dominates the outlook in rheumatoid and osteo-arthritis. In the treatment the more accessible areas of infection in the jaws, throats, and intestines were treated surgically, and all the disorders of the digestive tract which had encouraged the development of chronic infection were dealt with. Autogenous vaccines proved of great value when used to supplement these measures. They were prepared from infective bacteria of all the principal zones of sepsis. Chronic infection frequently damages the thyroid gland. In the present series minor forms of subthyroidism were very common, while well defined myxedema or goiters of considerable size were seen in 14 per cent. of cases. There is an intimate association between immunity reactions and the functions of the thyroid gland. The dry extract of the thyroid was given in all such cases with great benefit to the joints. In the present series of cases, which have been followed for varying periods up to nine years, 89 per cent. show very great improvement or complete arrest. Of the failures one fourth had received very partial treatment only and could not be inoculated with vaccines.

**Treatment of Infected Knee Joint.**—When the diagnosis is septic knee joint, Weatherbe states, the treatment should be at the earliest possible moment a free opening of that joint by lateral incisions 4 to 6 inches long, on either side of the patella, followed by thorough irrigation of the joint, breaking down of all adhesions, manipulation by full flexion and extension, introduction of several rubber drainage tubes about the size of the little or big finger according to the size of the patient, application over the wounds of wet boric lint covered with oiled silk, and creation of continuous drainage of the joint by capillary action. The dressing should be changed once a day with removal of tubes, irrigation, and full flexion and extension. This treatment should be repeated daily until the wounds are healed. This method of treating septic knee joints apparently gives the patient the best chance regarding his life and the function of his limb.

Dec. 24, 1921, 2, No. 5130

- \*Relationship of Uremia and Hyperpiesia. H. B. Shaw.—p. 1307.  
Serologic and Morphologic Characteristics of Pneumococcus. A. L. Urquhart.—p. 1313.  
Importance of Thoracic Respiration. W. A. Lane.—p. 1317.  
Rationale of Wassermann Reaction. J. E. R. McDonagh.—p. 1319.  
Sachs-Georgi Reaction in Syphilis. J. L. Brownlie.—p. 1322.  
Tumor of Right Petrous Bone. T. Anwyl-Davies.—p. 1323.  
Plague on Board Ship. W. W. Clemesha.—p. 1338.

**Relationship of Uremia and Hyperpiesia.**—Shaw endeavors to show that in hyperpiesia may be found all the manifestation of uremia; that hyperpiesia and uremia—so called—are due to the circulation of a blood poison (or poisons) which is not due to a fault of the kidney. The term uremia is a misnomer, useful clinically, but unsupported by experimental investigation. Shaw maintains that the relationship of uremia and hyperpiesia is easily settled. Hyperpiesia reveals in its advanced stages each and every manifestation met with in uremia. He believes that when a case presents so-called uremic manifestations, hyperpiesis is present, and if it is absent then at death cardiac hypertrophy will be found, showing that it had been present at one time or another. "Hyperpiesia" and "hyperpiesic," are words preferable to "uremia" and "uremic." They are infinitely more accurately descriptive. Many of the phenomena met with in the later stages of hyperpiesia, when symptoms of a so-called uremic

character develop, are much more likely to be due to toxins present in the blood as the result of some inflammation, somewhere in the body, than to metabolites present in the blood in excess owing to the default of the kidney whose duty it is to extrude such bodies.

### Medical Journal of Australia, Sydney

Nov. 26, 1921, 2, No. 22

- Industrial Hygiene as Applied to Munition Workers. E. E. Osborne.—p. 473.  
Industrial Medicine. I. Blaubaum.—p. 481.  
\*Transfusion with Small Amounts of Mother's Blood in Melena Neonatorum. B. H. Swift.—p. 482.  
Case of Retro-Bulbar Neuritis Associated with Symptoms and Signs of Disseminated Spinal Sclerosis. H. Armstrong.—p. 483.  
Case of Anthrax. H. Brown.—p. 484.

**Transfusion of Mother's Blood in Melena Neonatorum.**—Two cases are reported by Swift. The first patient was one of twins. Forty-eight hours after birth, the boy vomited some dark blood and at the same time passed a large quantity of blood by the bowel. At 10 a. m. another large amount was passed, but he did not vomit. The child was collapsed, very white, with very feeble and slow respirations. Five cubic centimeters of the mother's blood were drawn into a syringe from a vein in her arm and injected into the longitudinal sinus or one of the sphenoidal sinuses at the posterior angle of the anterior fontanel. The child was given 0.6 gm. gelatin and 0.6 gm. calcium lactate in 30 c.c. water and had small quantities of pure whey by mouth. There was a slight hemorrhage from the bowel at 3:30 p. m. The child was fed on whey every two hours and was given 0.3 gm. calcium lactate every four hours. Two days later another large amount was passed by the bowel. The child was moribund. Five cubic centimeters of blood were again taken from the mother, but this time the blood clotted, so the same quantity of citrated blood was used and injected as before. The child did not have another hemorrhage. The second case was not so severe.

Dec. 3, 1921, 2, No. 23

- \*Hereditary Optic Atrophy as a Possible Menace to Community. C. Morlet.—p. 499.  
Plague Control in Other Countries. J. S. C. Elkington.—p. 502.  
Palpable Radial Artery. G. C. Willcocks.—p. 504.  
Note on Lumbar Puncture as Diagnostic and Therapeutic Measure. I. Morgan.—p. 507.  
Amoebic Abscess of Liver. H. R. Dew.—p. 510.

**Hereditary Optic Atrophy.**—Morlet fears that this disease may become of dreadful import. He studied one family, in which there are four generations at present living—twenty-two males and thirty-one females. Of these twenty-two males, ten are boys under 19 years and twelve are adults. Of the twelve adults, only one has so far been spared his vision, the remaining eleven being all partially blind men. Eight of them became so about the age of puberty and three in later life, between the ages of 35 and 50. So that the one who has so far escaped, cannot, therefore, be declared safe, but may also become a victim at any moment. Of the thirty-one living females, seventeen are still children, while fourteen are adults. Of these fourteen adults, eleven are already married and nine of them have children. Only one female has ever suffered from the disease.

### Archives des Maladies de l'Appareil Digestif, Paris

December, 1921, 11, No. 6

- \*Dilatation of Esophagus. W. Oettinger and R. V. Caballero.—p. 369.  
\*Glycemia with Gastric Ulcer and Cancer. P. Le Noir, M. de Fossey and C. Richet, Jr.—p. 393.  
\*Mesenteric Thrombosis. F. Fernández Martínez.—p. 400.

**Idiopathic Dilatation of the Esophagus.**—Oettinger and Caballero conclude from their eight cases of this kind that the trouble is a congenital tendency to an abnormally large and long esophagus. The disturbances are mechanical and essentially chronic, with acute exacerbations as the stagnating food sets up esophagitis. The cardia has always been found normal, the esophagus with a sagging loop from its extra length, the muscle walls sometimes but not always hypertrophied. The esophagus may be stretched to a capacity up to 1,750 c.c. In Kinnicutt's case the length was 47.5 cm. The condition is similar to Hirschsprung's disease. Bard has demonstrated that the underlying cause of this visceral



giantism is that the tissues forming the walls of the organ are of an inferior grade, and stretch easily, without the normal elastic rebound. There is no basis, they say, for the assumption of a nervous or muscular spasm at the cardia or above as responsible for the dilatation. Medical measures are absolutely futile, and several surgeons have already reported successful intervention in a few cases. The only logical treatment is by anastomosis between the stomach and the overlong portion of the esophagus above the diaphragm.

**Glycemia in Gastric Ulcer and Cancer.**—Le Noir and his co-workers in continuing their research on insufficiency of the liver and kidneys in cases of gastric ulcer and cancer, found that test ingestion of 100 gm. of glucose in 250 c.c. of water, fasting, was followed by pronounced hyperglycemia only in cases with an active ulcer. In this group also there was hyperglycemia during fasting. Negative findings, however, are not conclusive. The findings from eighteen cases of ulcer and six of cancer are tabulated; they suggest a possible nervous origin for the glycemia. To the familiar symptoms of gastric ulcer we can now add the biologic data: symptoms of nervous irritation and symptoms from insufficiency of the liver and kidneys.

**Mesenteric Thrombosis.**—Fernández Martínez says that there are usually vague premonitory symptoms from the underlying abdominal arteriosclerosis, vague pains, and tendency to nausea, on a basis of arthritis, alcoholism or syphilis. Then suddenly comes agonizing pain like a stab wound, aggravated by movements and spreading throughout the abdomen, with syncope. In a recent compilation of 184 cases, the pain was near the umbilicus in forty-five, in the right or left hypochondrium in ten each, and it spread throughout the whole body in thirteen. Sometimes the pain was localized in the lumbar region. Soon after the pain and vomiting, diarrhea appears and it may be blood-streaked. The combination of blood in vomit and blood in stools is instructive. The diarrhea soon subsides as the bowel becomes paralyzed, the intestinal paralysis being more extreme than with any other form of bowel obstruction. In a case reported in detail he was misled by the symptoms to diagnose peritonitis from perforation of an unrecognized ulcer. He did not at the time ascribe any diagnostic importance to the serous and bloody diarrhea for a few hours before the tympanism became extreme. While preparing for the emergency operation, the man died, and necropsy showed abdominal arteriosclerosis, with obliteration of a mesenteric artery and a gangrenous zone 6 or 8 cm. long in the corresponding bowel. The literature on the subject is discussed, and the warning is given to be on the lookout for such cases so that the necrotic zone can be resected in time.

### Archives des Maladies du Cœur, etc., Paris

October, 1921, 14, No. 10

\*The Snap of the Diastolic Murmur. M. Roch.—p. 433.

\*Radioplastic Cast of the Heart. G. G. Palmieri.—p. 440.

**The Snap of the Diastolic Murmur.**—Roch discusses the points where it is heard loudest, and the symptomatic import of the variations in these points. He has studied it in Bright's disease, in aortic incompetence and with nervous disordered heart action, and with emphysema, etc., hampering the right heart.

**Radioplastic of the Heart.**—Palmieri has coined this term to designate a method of making a plaster image of the heart from roentgenoscopic measurements. He describes the technic he has found best adapted for the purpose, and gives illustrations of a large number of casts thus made. The roentgen measurements are taken as the patient sits on a revolving stool 25 cm. from the screen; 55 cm. from the axis of the stool to the anticathode; 80 cm. from screen to anticathode. The measurements are always taken during the ventricular diastole and respiratory pause.

### Archives Médicales Belges, Liège

July, 1921, 74, No. 7

\*Colobomatous Microphthalmos. G. M. van Duyse.—p. 593.

Phenolipoids and Antitoxic Chemotherapy. P. Pastiels.—p. 628.

Pathogenesis of Arterial Atheroma. H. Welsch.—p. 632.

Surgical Treatment of Ascites. G. Cambresier.—p. 640.

**Colobomatous Microphthalmos.**—Ten microphotographs accompany this article which was awarded the Alvarenga prize for 1920 by the Belgian Academy of Medicine. The bilateral microphthalmos was accompanied by a true cyst of the orbit and numerous malformations. Another male child with various malformations had been born to this couple.

### Bulletin Médical, Paris

Nov. 12, 1921, 35, No. 46

\*Sclerosis of the Lung. P. Gastinel and P. Jacob.—p. 901.

**Sclerosis of the Lung.**—This anatomic and clinical study of sclerosis of the lung shows that syphilis alone is able to realize the clinical picture of any and every form of pulmonary sclerosis, although the form suggesting pneumonia is rare. The most common form is that with dilatation of the bronchi, so that some insist that syphilis is responsible for bronchiectasia in practically every case. A tracheo-bronchial syphilitic fibrous process frequently is accompanied by symptoms of mediastinitis. The symptoms from the lungs may be dominated by those from the bronchial stenosis. Another point to be borne in mind is that the tuberculous process in a syphilitic soil is apt to be of a sclerosis type, even when the syphilis is not directly responsible. This is common in children with inherited syphilis. The triad, apical sclerosis, enlarged glands at the hilus and emphysema at the base, with no signs of tubercle bacilli, was found in eighteen cases, and in thirteen of them the Wassermann reaction was positive, including five cases in which the patient had no suspicion of his infection with syphilis. The sclerosis may entail asthma secondarily. The asthma may subside and yield to disturbances from congestion in bronchi and alveoli, with dyspnea and bronchorrhea. This group of symptoms forms what has been called *asthme intriqué*, which might be translated interlocking asthma.

Nov. 26, 1921, 35, No. 48

\*Helminthiasis. E. Brumpt.—p. 943, etc.

\*Idem. C. Joyeux.—p. 944, etc.

**Helminthiasis.**—This number of the *Bulletin* reviews the recent literature on varieties of helminths that affect man, the symptoms from them, differential diagnosis, treatment and prophylaxis, the subjects treated by different authors. Joyeux classes them by the organs they infest, and again by their geographical distribution. Brumpt shows by their zoological history the means by which we can ward off infestation with the different types of helminths. He remarks that the difficulty in exterminating the oxyuris is due to the fact that the itching it causes at the anus, with the resulting scratching, gets the ova under the finger nails, and in the morning they get from the finger nails into the food. The infection thus is being constantly renewed. He advises wearing tight drawers, to prevent direct scratching, and special care of the finger nails, cutting them short.

Dec. 3, 1921, 35, No. 49

\*Monilia Pneumonia. Assimis.—p. 969.

Dec. 10, 1921, 35, No. 50

Dementia Præcox and Its Simulation. R. Benon.—p. 985.

**Monilia Pneumonia.**—In Assimis' case at Athens the symptoms suggested merely pleurisy, although the moniliasis process was in the lung of the man of 58, a farmer, previously healthy. Weakness, lassitude, a cough but little expectoration, an area of absolute dulness from the tip of the scapula to the base, and complete apnea in this area, remittent fever but no pain, were the elements of the clinical picture accepted as pleurisy with effusion although punctures at different points were negative. Nothing was done for the supposed pleurisy beyond puncturing and giving a tonic. At about the seventh month symptoms of extreme toxic action became evident and proved fatal. Possibly the punctures may have contributed to the increase in virulence.

### Encéphale, Paris

September-October, 1921, 16, No. 8

Sclerosis with Slow and Relapsing Course. André-Thomas.—p. 416.

The Intellectual Territories of the Brain. D. Anglade.—p. 423.

Pathologic Anatomy of Pineal Gland. M. Laignel-Lavastine.—p. 437.

Conc'n.



- Mechanism of Clonus. P. Sollier.—p. 449.  
Physiologic Sequence of Volitional Movements. Noica.—p. 451.  
Genital Obsession in a Woman. H. Claude and H. Biancani.—p. 456.  
Professional Imprint in Psychopathies. Chavigny and Cuny.—p. 463.

### Journal d'Urologie, Paris

October, 1921, 12, No. 4

- \*Epididymitis in Gonorrhea. A. Lavenant.—p. 233.  
\*Hypernephroma of Kidney. Bégouin and Darget.—p. 261.  
Annual Meeting of French Urological Association.—p. 267.

**Epididymitis and Vaginalitis in Gonorrhea.**—Lavenant discusses the bacteriology, pathogenesis and clinical aspects of these complications of gonorrhea. His experience indicates that secondary or associated infections are encountered in from 20 to 30 per cent. of all cases of gonorrhea, and that epididymitis does not develop unless the urethra contains evidence of secondary or associated infection. There seems to be a constant ratio between the bacteria in the urethra and those found in the epididymitis and in the vaginalitis effusion. The infection may induce pain and fever with little effusion, or the effusion may be extensive without pain or fever. In Fournier's statistics, the epididymitis generally developed between the eleventh day and fifth week, but in eighty-one cases, it was later than this, up to the fifth month. Lavenant gives the details of twenty-three cases; the streptococcus, staphylococcus, colon bacillus or enterococcus alone or two associated were found in the vaginalitis effusion, the gonococcus only in 25 per cent. Guinea-pigs inoculated with the effusion showed that the virulence was slight. The discovery of associated infection in the urethra may warn of possible complications of this kind.

**Hypernephroma of the Kidney.**—Bégouin and Darget, in commenting on the case described, warn that catheterization of the ureter may upset the balance temporarily so that functional tests may give misleading findings. Eight days at least should be allowed to pass before the Ambard formula can be applied with any expectation of reliability after the ureter catheter has been left in place for an hour or two. When withdrawn at once, the ureter catheter does not affect kidney functioning materially. All the functional findings in the case described, in a woman of 51, testified that nephrectomy was out of the question. But the kidney was removed, nevertheless, in December, 1920, and the woman was restored to complete health. The paraperitoneal route gave ample access for removal of the large tumor and the adipose tissue surrounding it. The capsule of the kidney seemed to be intact. The first symptom had been sudden, violent pain in the right flank in 1915.

### Paris Médical

Nov. 26, 1921, 11, No. 48

- Epochal Periods in History of Anatomy. A. Latarjet.—p. 409.  
\*Mishaps with the Arsenicals in Syphilis. L. Archambault.—p. 418.  
Are Vaccines Equivalent? J. Marais.—p. 421.

**Untoward By-Effects of Arsphenamin.**—Archambault states that in his last forty-one cases of syphilis being treated with arsenicals, he had to keep 2 of the patients for a few hours after some of the injections, on account of the annoying by-effects of the drug. Another patient had a severe nitritoid crisis on the steps as he was leaving. Another fell unconscious on the street, and was brought back into the office by two passers-by. All these patients had borne the previous injections without harm. He used to keep a good amount of the drug on hand, but now buys it only as needed. It is his impression that these untoward effects are more common in persons with the inherited taint. Venesection in the ietus case did not bring the blood for several minutes, and consciousness was not regained for a full hour.

### Revue de Chirurgie, Paris

1921, 59, No. 5

- Hernia at Spigelius' Line. A. Augé and R. Simon.—p. 297.  
Central Luxation of Femur. E. Delannoy.—p. 317.

1921, 59, No. 6

- \*Dilatation of Esophagus. L. Sencert and R. Simon.—p. 355.  
Nonmalignant Intestinal Tumors. P. Brocq and J. Hertz.—p. 377.  
Oral Sepsis and General Surgery. J. Tellier.—p. 390.  
\*Anastomosis of Gallbladder. X. Delore and P. Wertheimer.—p. 400.

**Idiopathic Dilatation of the Esophagus.**—Sencert and Simon ascribe this condition to a congenital malformation of the esophagus similar to that with megacolon, megarectum, etc. The tissues are either too weak to resist ordinary strain and thus stretch, or the esophagus is abnormally large. The disturbances date from childhood, but they develop insidiously and progressively until between 20 and 30 they become unbearable. The esophagus is not only too wide, it is also too long, as a rule, and gets kinked. The various procedures in vogue neglect this latter element in the clinical picture, and hence are liable to fail to insure a permanent cure. In a typical case described in detail in a young man, roentgenosecopy showed that the esophagus above the diaphragm was so long that it sagged into a loop. Through the laparotomy incision along the left costal arch, the esophagus was drawn down while the assistant held the liver out of the way. A segment of the esophagus, 8 cm. long, could thus be pulled down into the abdomen; there was not much hypertrophy. They fastened the esophagus with three stitches to the diaphragm, and made a longitudinal incision 4 cm. long in the cardia region, and closed it by suturing it transversely, in tiers. The young man left the hospital in two weeks, eating at will, free from regurgitation and dysphagia, and has had no further disturbance, except that after a hearty meal he drinks a swallow of water to aid in the complete evacuation of the esophagus. Roentgenosecopy shows that the esophagus is still dilated, but it forms a straight passage to the stomach and the contents pass slowly but completely into the stomach in the course of three minutes. The operation is thus a complete success.

**Anastomosis Between Bile Ducts, Stomach and Intestine.**—Delore and Wertheimer analyze a total of 3 cholecystocolostomies, 2 cholecystojejunostomies and 12 cholecystogastrotomies, with no mortality. The symptomatic benefit with the last mentioned is beyond question. The pruritus subsides and with it the jaundice, as a rule, and the progress of the cachexia is arrested. The complete cure in some cases showed that the diagnosis of malignant disease had been unfounded. Even when the cancer continued its progressive course, the operation gave temporary and often quite durable relief. The gallbladder has to be distended to some extent for effectual suture to the stomach, and hence the operation has to be reserved for the aged, the debilitated, and for cases in which access to the common bile duct is difficult. The anastomosis is generally made on the antrum, in the anterior wall, and suturing is preferred to a button except when haste is necessary.

1921, 59, No. 7-8

- \*Brachial Birth Paralysis. Froelich.—p. 419.  
Shape of Appendix Segment of Intestine. G. Milhaud.—p. 451.  
\*Treatment of Perforated Gastric and Duodenal Ulcer. P. Uhlrich.—p. 467.

**Brachial Birth Paralysis.**—Froelich reviews the outcome in 10 cases of brachial paralysis in the new-born; 20 in very young children, and 7 in children between 10 and 15. He has never encountered but 3 cases in which the total paralysis of the arm was grave and there seemed no outlook for improvement. The total paralysis at birth generally heals without disturbance, but exceptionally it may entail a flail shoulder joint. Later there may be contracture, with displacement of the head of the humerus. Or there may be ankylosis of the head, or the arm may be shortened, the movements of the shoulder restricted; this may exist for years before it is detected. He discusses the treatment for each of these types, with instructive examples. The treatment for the new-born consists in immobilizing the arm in a position which frees the roots of the plexus from traction, and is antagonistic to the position entailed by the pathologic contracture. The arm should therefore be held in 90 per cent. abduction, the forearm flexed at a right angle, the hand extended, the hand and fingers in supination, as shown in one of the nine illustrations.

**Perforated Gastric and Duodenal Ulcers.**—Uhlrich tabulates the 31 cases he has found on record in which a perforated gastric or duodenal ulcer was treated by immediate transverse resection. Recovery was prompt and complete in all but 2 after the gastropylorotomy or duodenopylorotomy.



This magnificent series, he says, teaches that a perforated ulcer should be merely turned in and sutured, or else should be treated by the maximum transverse resection to thoroughly eradicate the disease process. Half-way measures are futile. It is not a mere casual coincidence that Gauthier and five other surgeons almost simultaneously decided separately to apply extensive transverse resection as the one logical measure under the circumstances. Their success has demonstrated the superiority of the method over all others except when conditions permit only the most rapid and harmless palliative operation. The extent of the ulceration, the rigid walls of the hard ulcer compelled the resection, and the results surpassed all expectations. The interval ranged from one hour to twenty-seven but in the majority from four to six hours. In one case that terminated fatally, the interval was thirty-six hours. The only other fatality was due to extraneous circumstances. In one of the cases the resected segment showed signs of malignant degeneration of the ulcer.

### Schweizer Archiv f. Neurol. u. Psychiatrie, Zurich

1920, 7, No. 2

- \*Characteristics of Hereditary Degeneration. K. Schaffer.—p. 193.
- Development of the Reactions and the Plantar Reflex in the Prematurely Born and to the Age of Two. H. Bersot.—p. 212.—Conc'n. Vol. 8, p. 47.
- Choroid Plexus in Organic Brain Disease. Kitabayashi.—p. 232.
- \*Anatomy of Optic Nerve Fibers. M. Minkowski.—p. 268. Conc'n.
- \*Epilepsy, Anaphylaxis and Dysthyroidism. V. M. Buscaino.—p. 304.
- Trauma of the Skull and Korsakoff's Psychosis. R. Benon and R. Lehuhe.—p. 316.
- War Neuroses and Psychoanalysis. A. v. Müralt.—p. 323.
- Plantar Reflex and Lesions of Sciatic Nerve. H. Bersot.—p. 339.
- The Steinach Operation. G. Hotz.—p. 344.

**Hereditary Degeneration.**—Schaffer presents evidence to demonstrate that the general pathologic histology of family diseases and inherited degeneration is determined by uniform embryologic changes in the central nervous system. Diseases of a familial hereditary type are not only clinically but anatomically alike. The type of disease is determined by the extent and the intensity of the histologic changes.

**Comparative Anatomy of Optic Nerve.**—Minkowski discusses the course, the terminals and the central representatives of the crossed and uncrossed optic nerve fibers in certain mammals and in man.

**Epilepsy, Anaphylaxis and Dysthyroidism.**—Buscaino found octahedral crystals of presumably protein origin in the thyroid tissue in 84 per cent. in thirty-nine persons with idiopathic epilepsy or other disease inducing convulsions. In sixty-one other persons with no history of convulsions they were found only in 15 per cent. This and other data presented sustain, he says, his assertions made in 1915 that the idiopathic epileptic seizure is an attack of anaphylaxis induced by abnormal proteins getting into the blood. He thinks that the source of these abnormal proteins is probably in the thyroid.

### Archivio di Patologia e Clinica Medica, Bologna

October, 1921, 1, No. 1

- Differential Diagnosis Both a Science and an Art. G. Viola.—p. 3.
- Artificial Pneumothorax from Standpoint of Pathologic Anatomy and the Clinic. A. Crosti.—p. 23.
- \*Pathogenesis of Anemia with Nephritis. R. Grignani.—p. 48.
- Refractometry for Clinical Use. F. Schiassi.—p. 59.

**The "Archivio."**—This newly founded, fine journal aims to record the progress in internal medicine as an applied science. It is published by Cappelli of Bologna as a companion of the Italian *Archivio di Chirurgia*, and the editorial staff comprises Zoja, Viola and Schiassi. Each article is to be accompanied by a summary in French.

**The Hemoglobin Metabolism with Kidney Disease.**—Grignani presents evidence to show that there is some factor in nephritis which has an injurious action on the blood-forming apparatus. In eight cases described in detail this had induced grave anemia; in some it was of the pernicious type. There is no abnormal destruction of erythrocytes, but a reduction in the numbers produced. Inadequate nourishment may be responsible in some cases. The oligochromocytemia in nephritis may escape detection on account of the hydremia, but the numbers of erythrocytes in actual fact are below normal.

### Policlinico, Rome

Nov. 28, 1921, 28, No. 48

- \*Cesarean Section After Ventrofixation. P. Gaifami.—p. 1607.
- Phenol in Treatment of Erysipelas. C. Arrigoni.—p. 1612.
- \*Treatment of Anthrax in Man. R. Monteleone.—p. 1613.
- \*Spasmophilia. C. Moschini.—p. 1616.

Dec. 5, 1921, 28, No. 49

- Arsenical Treatment of Nervous and Mental Disease. G. Bianchi.—p. 1645.
- Cinchonin in Treatment of Malaria. A. Sanguinetti.—p. 1652.
- Physiopathology of the Nasal Cavities. T. Manciolini.—p. 1653.

**Drawbacks of Ventrofixation of the Uterus.**—Gaifami has had to apply a mutilating form of cesarean section in five cases to overcome the evils entailed by ventrofixation of the uterus. He declares that ventrofixation is a long backward step in gynecology.

**Anthrax in Man.**—Monteleone extols the fine results of antianthrax serotherapy, as he witnessed it in thirty-five cases. His research has confirmed that the anthrax bacilli lurk in the tissues to the farthest limits of the edematous zone, and hence cauterization is not effectual as it cannot be applied over this entire zone.

**Spasmophilia and Bronchotetany.**—Moschini describes three typical cases to sustain his assertions in regard to a group of cases in children with symptoms of bronchopneumonia, capillary bronchitis or asthma, in which the necropsy findings reveal no anatomic lesions to correspond. The disturbance must be of a functional spasm nature. The group comes under the heading of bronchotetany, as part of the spasmophilic diathesis. The differential diagnosis can be based on the signs otherwise of manifest or latent tetany. The importance of exact differentiation is evident, as dropping milk from the diet may attenuate or cure the bronchotetany, even without other measures.

### Revista Médica del Uruguay, Montevideo

November, 1921, 24, No. 11

- \*Tuberculosis of the Skin in Uruguay. J. Brito Foresti.—p. 501.
- \*Fatal Chorea. Luis Morquio.—p. 527.
- \*Epithelial Cancer. C. Stajano and C. V. Nario.—p. 542.

**Skin Tuberculosis in Uruguay.**—Brito Foresti relates that the cutaneous manifestations of tuberculosis are rather rare in Uruguay forming only about 1 per cent. of skin diseases in general. Erythematous lupus is responsible for 60 per cent. and ordinary lupus for 15 per cent. of all the tuberculous skin manifestations. He summarizes the 229 cases he has encountered since 1896, classifying them under eight headings.

**Fatal Chorea.**—In the two cases described by Morquio, the girls of 14 and 11 were taken suddenly with intense chorea. Only the younger child had a history of rheumatism. The intense chorea finally subsided and paralysis followed, accompanied by fever, and this progressed to a fatal termination seven and three weeks after the first onset of the chorea. Necropsy showed superficial and diffuse encephalitis. In another case the chorea developed suddenly but this yielded after a few days to the clinical picture of lethargic encephalitis. Morquio discusses the connection between chorea and epidemic encephalitis, saying that there may be a chorea disease and a chorea that is merely a syndrome. He asks "Can cases of recurring chorea or chorea developing after a fright be explained as the flaring up of the latent virus of epidemic encephalitis?"

**Factors in Epithelial Cancer.**—Stajano and Nario urge the necessity for study of precancer lesions to throw light on cancer itself. They argue that the long continued irritation from a patch of leukoplakia, for instance, finally induces a neuritis, and the ascending inflammation reaches the trophic center in time. As the vitality of the trophic center declines, it loses its normal control over the tissues innervated by it, and anarchy in the tissue cells is liable to result. The injury with vulvar eczema, kraurosis, etc., is more and deeper than the visible lesions. These lesions are the results of the growing old of a certain area of the body. Senescence may be produced in a certain segment even when all the rest of the body is young and vigorous, and the precancer lesions develop in a segment of this kind. Their symmetrical arrangement sustains this conception. The trophic centers seem to suffer more the shorter the distance from the precancer lesions.



**Revista de Psiquiatría, Lima**

July-October, 1920, 3, No. 1-2

Association Tests in Children. V. Izcue.—p. 5.

Postoperative Dreams. N. Barsallo.—p. 9.

\*Psychology of the Sick. H. Valdizan.—p. 19.

Psychology and Physiology from Medical Standpoint. Delgado.—p. 39.

**Psychology of the Sick.**—Valdizan begins his study of the psychology of the sick child by saying "From the United States of North America from which come so frequently so many and such fine suggestions for the psychiatrist, came not long ago an article that every physician should know and ponder. . . . I refer to the article by Patrick in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, Jan. 10, 1920, 'The Patient Himself.'" Valdizan discusses the child patient, and comments on the psychology of children in general and the influence on it of sickness.

**Archiv für Verdauungs-Krankheiten, etc., Berlin**

October, 1921, 28, No. 5-6

Nomenclature of the Stomach. F. Groedel.—p. 245.

\*High Stenosis of Duodenum. H. Nick.—p. 265.

\*Radiology of Duodenal Ulcer. T. Bársony (Budapest).—p. 275.

Casein Tests for Tryptic Ferment in Feces and Duodenal Juice. W. Schoppe.—p. 289.

The Pylorus in Relation to Peptic Ulcer. G. Kelling.—p. 317.

Roentgenology of Pylorospasm and Stenosis. Bauermeister.—p. 322.

\*Pluritis in Relation to Pain in Stomach. K. Rennen.—p. 328.

\*Indications with Acute Hemorrhage from Stomach or Duodenum. H. Finsterer.—p. 337.

**High Stenosis of the Duodenum.**—Nick diagnosed in the two cases described stenosis of the pylorus, probably malignant, but the operation revealed stenosis of the duodenum, about 3 cm. below the pylorus, with periduodenitis from perforation of a gallbladder empyema into the duodenum in one case, and in the other, a hard ulcer that had involved the pancreas. In both cases there was ectasia and retention, with lactic acid and hypochlorhydria, but very little hypertrophy of the muscle.

**Radiology of Duodenal Ulcer.**—Bársony gives the contrast meal fasting, and insures the filling of the duodenum by blocking it with pressure from without. Among the points brought out by his research on the radiology of the duodenum is that spastic hour-glass contraction of the stomach is due to segmental contracture of the stomach itself, while the "cascade" shape of the stomach implies factors outside of the stomach, possibly an overlarge and heavy colon. The possibility of a duodenal ulcer should be borne in mind with this, as also with uncompensated stenosis that is not accompanied with vomiting at first. Symptoms from the right hypochondrium should suggest in women, gallstones, but in men, duodenal ulcer. Another point he emphasizes is that the pains with a duodenal ulcer occur usually in the afternoon at first, and not in the night until a later stage. With gallstones, the pains generally develop toward midnight, and they occur only at intervals of several days or weeks. With duodenal ulcer, they occur generally every day for a time and then after a longer or shorter pause reappear in the same way.

**Pains in the Stomach with Pleurisy.**—Rennen warns that when there is pain in the stomach for which no visceral cause can be discovered, above all, no blood in stomach content or stools, the pleura should be investigated before assuming an ulcer or gastric neurosis. Special search should be made for diaphragmatic pleuritis as an early manifestation of pulmonary tuberculosis. Roentgen-ray examination and a tuberculin test are indispensable. By this means much anxiety and work are spared both the patient and the physician, as specific treatment in an astonishingly short time will free the patient from his gastric pains.

**Treatment of Acute Stomach and Duodenal Hemorrhage.**—Finsterer urges immediate operation, and points to his latest series of sixteen cases of acute hemorrhage treated by resection without a fatality, except from diabetic coma in one case, although the interval was less than twenty-four hours only in three of the cases. He operates under regional, not general anesthesia, and uses only a 0.25 per cent. solution of procain. Resection cures the patient permanently, while internal treatment leaves him exposed to danger of perforation or deep

arrosion hemorrhage. In one case perforation occurred just as the laparotomy was commenced, the twelfth hour after the hemorrhage. A second ulcer was found in this case, and the operation cured the patient permanently. He does not operate in every case; in six cases during the same period he did not regard operative treatment as indicated. These six patients were young girls, and there were no symptoms suggesting a chronic burrowing ulcer, and all recovered.

**Deutsche medizinische Wochenschrift, Berlin**

Nov. 3, 1921, 47, No. 44

Chemotherapeutic Antisepsis. III. Morgenroth et al.—p. 1317.

Virulence of Apathogenic Bacteria Enhanced by Chemical Substances.

B. Lange and M. Yoshioka.—p. 1322.

Artificial Increase of Virulence by Lactic Acid in Experimental Mouse

Tumors. P. Rostock.—p. 1323.

Electric Reactions of Pathologic Human Muscles. E. Rehn.—p. 1324.

Roentgen Dosage in Relation to Roentgen Burns. Kurtzahn.—p. 1326.

Suppuration in Nasal Sinus as Cause of Disease Below. Stepp.—p. 1328.

Typhoid-Like Ulcers in the Stomach. J. Seiffert.—p. 1329.

Chancroid Vaccine. G. Stümpke.—p. 1331.

Physiology of Sex Determination. T. Péterfi.—p. 1332. Cont'n.

Osteomyelitis and Acute Arthritis. G. Ledderhose.—p. 1333.

**Deutsche Zeitschrift für Chirurgie, Leipzig**

November, 1921, 167, No. 1-2

\*Retrograde Incarceration of W Hernia. E. Pólya.—p. 1.

\*Causes of Congenital Torticollis. A. Schubert.—p. 32.

Congenital Median and Lateral Fistulas in Neck. Blaesén.—p. 60.

\*Nature of Hypertrophy of the Prostate. R. R. Niemeyer.—p. 65.

Fibromatosis of Mamma in Relation to Cancer. Lukowsky.—p. 81.

\*Operation for Perforated Gastric Ulcer. W. Noetzel.—p. 116.

\*Incarceration in Slit in Mesentery. A. Sohn.—p. 124.

\*To Insure Continence of Artificial Anus. Kurtzahn.—p. 129.

**Retrograde Incarceration.**—Pólya adds 6 more cases to the 4 he recently published, and summarizes 6 others from Hungarian literature, which brings the total of cases of retrograde incarceration of a W hernia on record to 100 in accessible literature. He discusses the mechanism, and says that the correct diagnosis was made in 2 of his cases. The loop inside the abdomen was necrotic while the loop in the hernia was comparatively normal. The gravity of the general symptoms in comparison with the visible findings, and the brief duration of the incarceration are instructive. In 3 of his 10 cases the incarcerated hernia was at the umbilicus; it was in the inguinal region in 3 of 130 cases, while no instance was known in his 109 cases of incarcerated femoral hernia. The last loop of the ileum was always the one involved. By cutting around the hernia and drawing the whole out, without opening the sac, the retrograde loop was discovered. If gangrenous, the whole can be resected without opening the sac. Extensive resection was required in 4 of his 6 cases, with 2 deaths. In some of the cases, 369, 367 and 465 c.c. of the bowel had to be resected. Bowel functioning was fairly good thereafter, although the patients were poor and unable to follow any special diet.

**Congenital Torticollis.**—Schubert comments on the frequent hereditary character of congenital torticollis, and its combination with other embryologic defects. Recent reexamination of twenty operative cases has confirmed him in the belief that the primary cause is of central nervous origin, not from intra-uterine pressure.

**Hypertrophy of the Prostate.**—Niemeyer argues that the senile changes in other organs are in the nature of atrophy, not hypertrophy, as in the prostate. His study of thirty-five cases has convinced him that the hypertrophy is a compensating hyperplasia on the soil of senile involution. This conception of the hypertrophy as a reaction to senile involution throws light on tumor growth in general after middle age.

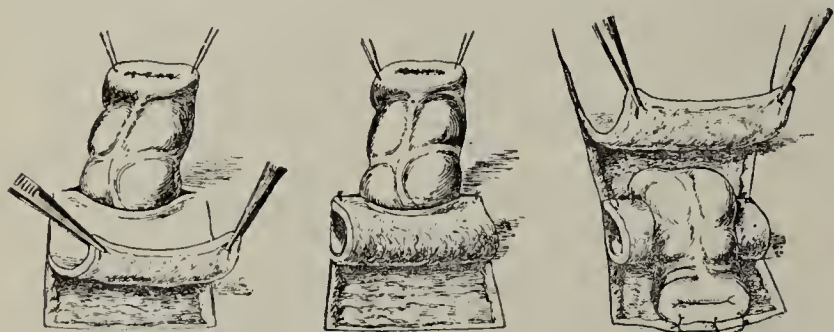
**Perforated Gastric Ulcer.**—In Noetzel's latest series of 26 cases, 2 died in the 14 cases in which the interval before operation was less than twelve hours; 4 of the 7 with interval up to twenty-four hours, and 4 of the 5 with an interval up to several days. In a number of the cases the perforation occurred without any symptom that had attracted attention to the stomach before. In such cases the patients were well nourished, and the outcome was favorable even when the interval was long, especially in younger subjects. He has never ventured resection, fearing that the inflamed walls of the stomach would be too friable for suture. Enderlen has



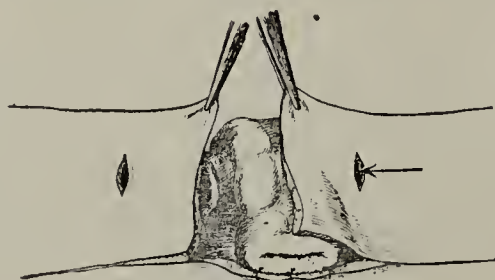
recently reported a fatality from this cause, the suture after resection giving way at one point. Recent reexamination showed excellent functioning in a patient treated in 1912 by suturing the tissues over the perforation, plus gastro-enterostomy, his constant technic.

**Ileus from Incarceration of Bowel in Slit in Mesentery.**—Sohn adds another case to the list of fifty-two on record with a gap in the mesentery of the small intestine. He also describes what he says is the fifth case in which a gap in the mesocolon was accompanied by volvulus of an hour-glass stomach.

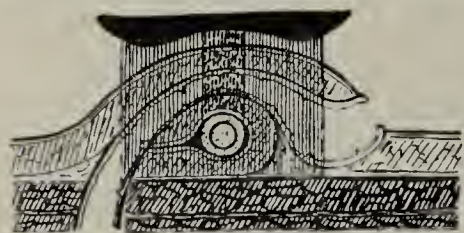
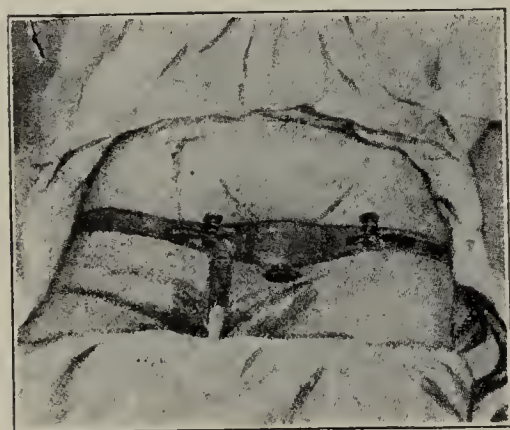
**To Insure Continence of Artificial Anus.**—Kurtzahn gives an illustrated description of his method of rolling up a square skin flap to make a tube as with a cineplastic amputation. The stump of the intestine forming the artificial anus



is lifted up, and the skin tube is sutured in place across below it, a few inches from the end of the stump. The stump is then brought down over the tube, and skin flaps from each side are sutured over both bowel and tube. A rubber tube, plugged with rubber, is passed through the skin tube which thus lifts up the bowel, and a truss presses the bowel against this elastic background. The illustrations show the technic and its application in two cases with perfect success, restoring the patients to active life with a perfectly continent artificial



The skin flap and tube.



The special truss and cross-section.

anus for months to date. In the first case a metal bar had been used in the tube, and this proved too irritating. The man, a prominent government official, had probably applied too much pressure as he wished to prevent passage of flatus. There has been no disturbance in the second case, using rubber instead of metal. Both patients had had the rectum resected for cancer, and the new anus was made as above described at the same sitting. The larger the tube, the easier to keep clean. The openings of the tube are at some distance above and each side of the anus. He describes further a procedure with a bridge flap of skin below which allows the artificial anus to protrude beyond the level of the skin around. This allows the pressure from the truss to be applied at different points, and as the protruding anus formation can be taken in the hand, the feces can be deposited directly in a vessel without soiling the tissues around. This technic requires two or three sittings.

## Jahrbuch für Kinderheilkunde, Berlin

October, 1921, 96, No. 3-4

\*Congenital Heart Defects. H. Mautner.—p. 123.

\*Nongonococcus Vulvovaginitis in Children. M. A. Tsoumaras.—p. 156.

\*Sugar Content of Infant Stomach. P. Hoffmann and S. Rosenbaum.—p. 164.

\*Etiologic Diagnosis of Umbilical Tetanus. J. Zeissler and R. Käckell.—p. 176.

\*Water Content of Blood. K. Benjamin.—p. 181.

\*Nontuberculous Respiratory Disease in Children. R. Lederer.—p. 198.

**Congenital Heart Defects.**—Mautner gives nearly five pages of bibliographic references by titles, set solid, to complete this study of the embryologic-mechanical development, the pathology and the clinical aspects of congenital heart defects.

**Epidemic of Nongonococcus Vulvovaginitis in Little Girls.**—In the epidemic of twenty-five cases in the children's clinic and hospital at Athens, described by Tsoumaras, the acute clinical picture closely resembled that of gonococcus vulvovaginitis except that the urethra was not involved. The fact that none of the children complained of smarting during urination was the only differential feature of the clinical picture. The diplococcus found in the pus cells of the vaginal secretions was Gram-positive, of coffee-bean shape, growing in agar in punctate colonies, not killed by a temperature of 45 C. in the incubator, the cultures still showing signs of life after the twelfth day. A rabbit developed fever and lost weight progressively after intravenous inoculation of this paragonococcus. The blood of the children and of the rabbit was sterile. Treatment was with potassium permanganate and Wright's method and with an autogenous vaccine, but not much was accomplished with it and he is hoping to get an antiserum from the rabbit infected. Vigorous measures prevented the further spread of the epidemic, but the purulent secretion from the vagina still persisted when the children were taken home by their parents. In one case the girl had had fever from April to September, ascribed to malaria, although the blood did not confirm this diagnosis, and in November the vaginal secretion became purulent and tumors as large as a pigeon's egg developed in one elbow and ankle and both knees. The condition has persisted with only slight change for the better during the several months to date.

**The Stomach Sugar Curve in Infant Feeding.**—In this report of research on acute nutritional disturbances in infants, Hoffmann and Rosenbaum call attention to the secretion in the infant stomach which occurs regularly—evidently for dilution purposes—as soon as the proportion of albumin in the food surpasses that of breast milk. Their charts of this "stomach sugar curve" show that the dilution of the sugar in the stomach content with a given intake can thus serve as an index of the secretion of gastric juice.

**The Water Content of the Blood in Children.**—Benjamin compares the blood to the overflow tube in a basin, as the blood in adults never retains on an average more than 1.55 per cent. of the water intake. It passes the overflow on to the tissues, the musculature taking up on an average 67.89 per cent. In young infants the growth depends on the water intake more than later in life, but the plasma itself is not diluted except in children inclined to dropsy. His research on twenty-four children showed that those of the doughy type and those with the exudative diathesis had a higher water content of the blood, regardless of the intake of fluids. The proportion of calories and the digestibility of the food had more influence on the dropsical tendency than the absolute amount of the water intake.

**Chronic Nontuberculous Respiratory Affections in Children.**—Lederer analyzes 13 cases of congenital chronic respiratory affections, 10 cases in which the respiratory affection was acquired within three weeks of birth, and 50 cases in which it was acquired later. The congenital cases are generally the result of injury at birth or of some familial predisposition, and they are maintained or aggravated by rachitis, intercurrent infection or a damp, cold environment. There were 2 deaths in this group and 5 deaths among the 10 who had acquired the respiratory affection soon after birth. In 10 older children with chronic persisting bronchitis, only 2



threw it off; in 4 with chronic pneumonia, one died, as also one of the 4 children with bronchiolectasia. In the 5 with recurring chronic bronchitis and 5 with recurring pneumonia, the influence of exposure to cold and damp was striking, but 3 of the bronchitis and 4 of the pneumonia children have been cured; 2 after 3 recurrences, one after 4, and one after 7 recurrences. In these cases bronchiolectasia is undoubtedly an important factor. The bronchitis did not seem to be modified by removal of adenoids in some of the cases. In a few cases of rachitic tracheobronchitis and of recurring bronchitis, artificial heliotherapy had a remarkably favorable effect. The details are given of each of the 73 cases, many of them followed for years. The child that had had 7 recurrences of pneumonia before it was 18 months old, and none since, is now, twelve years later, apparently normal.

### Medizinische Klinik, Berlin

Oct. 30, 1921, 17, No. 44

- \*Spinal Cord Tumors. E. Redlich.—p. 1315. Conc'n No. 45, p. 1351.
- \*Ultimate Outcome of War Nephritis. F. Deutsch.—p. 1318.
- Treatment of Cold Abscess. M. Jerusalem.—p. 1321.
- \*Experiences with War Neuroses. M. Fraenkel.—p. 1322.
- Effects of Silver Salvarsan in Syphilis. H. Engleson.—p. 1323.
- \*Varices and Pregnancy. Ada Stübel.—p. 1325.
- \*Salvarsan Upsets Ion Balance. F. Jacobsohn and E. Sklarz.—p. 1327.
- Mode of Action of Elements of Food. K. Blühdorn.—p. 1331.
- Trauma as Factor in Aneurysm. Lenzmann.—p. 1333.

**Spinal Cord Tumors.**—This is a comprehensive postgraduate lecture. Redlich remarks that we can count on about ten malignant tumors in the spine to one benign tumor, and states that a serous meningitis and disseminated sclerosis may sometimes simulate the clinical picture with a tumor. With a tumor shutting off the communication with the brain, the spinal fluid below it contains an excessive amount of albumin and globulin, but the cell count is usually practically normal. The fluid may be yellow and may coagulate; this occurs more particularly with tumors in the cauda region, while a simple increase in the albumin content speaks for a tumor higher up. Another sign of compression from a tumor is the abnormal behavior of the pressure in the fluid when the head is bent over. The removal of a tumor is generally borne relatively well, although in one personal case the patient died two days after removal of a large glioma. In future he proposes to operate at two sittings. Mingazzini and others have reported 50 per cent. cured; Hildebrandt up to 65 per cent. Krause has a record of 44 cases with 14 completely cured and 6 much improved; 9 did not survive the operation. Förster's record is 9 extramedullary cases, all cured. Redlich, himself, has had 21 cases operated on, and 5 of the 8 extramedullary tumors are completely cured, as also 3 of the 7 cauda tumors; 2 are materially improved and one somewhat improved.

**Ultimate Outcome of War Nephritis.**—Deutsch has reexamined recently 200 war nephritis cases and found 49.5 per cent. apparently quite cured; 29 per cent. have persisting disturbances entitling to a disability pension.

**Traumatic Neuroses.**—Fraenkel remarks that of the more than 2,000 cases of war neuroses that he encountered, scarcely one is left now. All such cases vanished like dew before the sun when the war was over, and this experience has taught how to treat the traumatic neuroses of peace. By applying the measures found so effectual for the war neuroses, he cured two cases of disabling traumatic neurosis of eighteen and eleven years' standing.

**Varices and Pregnancy.**—Stübel was told by 48 of 54 women with varicose veins that the varices had appeared first during a pregnancy. The temperature of the skin over the varicose veins was from 1 to 4 degrees higher than elsewhere. Abdominal tumors do not induce the development of varicose veins. If pressure from the gravid uterus was responsible for the varices, they would be more liable to develop symmetrically, and there would be a tendency to edema, and the region would be cooler instead of warmer than usual. The first appearance of varicose veins at puberty in 2 cases and at the menopause in one case, and the aggravation during menstruation in 18 of 36 cases—all these are arguments that point to dilatation of the vein as the primary

factor, and that this is the result of loss of tonus, possibly from some nervous or endocrine influence. This entails the secondary changes in the vessel walls.

**Arsphenamin Disturbs the Ion Balance.**—Experimental evidence is presented that the toxicity of arsphenamin can be enhanced by increasing the potassium ions in the blood. The rabbits died as if struck by lightning when an otherwise non-fatal dose of arsphenamin was accompanied or followed by a potassium salt. This is accepted as sustaining the theory that the greater toxicity which arsphenamin seems to be displaying since the war is due to the more vegetable diet of the populace. This provides too much potassium and not enough calcium, the result being an upset in the ion balance in the organism. The arsenic element in the arsphenamin, synergizing with the excess of potassium, enhances the toxicity of the drug.

### Münchener medizinische Wochenschrift, Munich

Oct. 28, 1921, 68, No. 43

- Regular Changes in Lipoid Content of Blood Under Shock Therapy (*Reiztherapie*). E. Gabbe.—p. 1377.
- The Pathology of Pulmonary Tuberculosis. Huebschmann.—p. 1380.
- Researches on Blood Coagulation. III. E. Wöhlisch.—p. 1382.
- Formation of Indol and Phenol by Bacteria. M. Neisser.—p. 1384.
- Postoperative Parotitis. F. J. Kaiser.—p. 1385.
- Pneumothorax Treatment. J. Neumayer.—p. 1387.
- How Childbirth May Be Made Easier. M. Samuel.—p. 1388.
- Vision. F. Schanz.—p. 1390.
- The Availability of Diagnostic Tuberculin. E. Diehl.—p. 1392.
- Simplification of Cutaneous Tuberculin Test. Brandes.—p. 1392.
- Combined Neo-Arsphenamin and Luetin Therapy in Case of Malignant Syphilis. R. Müller and H. Planner.—p. 1393.
- "Nature and Origin of Diastatic Ferments." E. Rothlin.—p. 1393.
- Severe Types of Ascariasis. R. Müssig.—p. 1395.
- Partial Prolapse of Bladder Through Female Urethra. Hahn.—p. 1397.
- Bovine Diphtheria Antitoxin in General Practice. Bieling.—p. 1397.
- Use of Narcotics in Heart Disease. Grassmann.—p. 1397.

### Zeitschrift für Tuberkulose, Leipzig

November, 1921, 35, No. 3

- Composition of Friedmann Tuberculosis Remedy. Heymann et al.—p. 161.
- \*Research on Tuberculin. H. Selter and E. Tancre.—p. 171.
- \*Calcium Treatment in Pulmonary Tuberculosis. H. Maendl.—p. 184.
- \*Serologic Diagnosis of Pulmonary Tuberculosis. E. Peters.—p. 196.
- Milk Not a Substitute for Tuberculin. W. v. Friedrich.—p. 200.

**Research on Tuberculin.**—Selter and Tancre report that heating tuberculin up to 150 C. did not modify its action when injected into guinea-pigs. This fact confirms that tuberculin is not an antigen. The inflammatory local reaction to tuberculin is specific; it differs essentially from the local reaction to peptone, dysentery toxin and other proteins. Tuberculin subjected to the action of pepsin digestion does not become more toxic but loses its active element.

**Calcium in Treatment of Pulmonary Tuberculosis.**—Maendl presents his second report on the benefit from intravenous injection of calcium in pulmonary tuberculosis, which he has been applying for four years at the Alland-Sanatorium. With severe hemoptysis, he gives every eight hours 5 c.c. of a 10 per cent. solution of calcium chlorid until there is no further hemorrhage, and continues it once a day for several days thereafter. A hot arm bath before the injection aids in finding the vein, also the repeated opening and shutting of the fist after the constricting band is applied. He has given systematic courses of intravenous injections of the calcium chlorid to 250 patients, a total of 4,000 injections. They are made every day or second day, to a total of twenty, and then suspended for a week or two and resumed again. He ascribes to this treatment the subsidence of the subfebrile temperature in a number of rebellious cases, and says that the effect on the cough, expectoration, night sweats and shortness of breath was decidedly favorable. This drug induces local necrosis when injected subcutaneously or into a muscle, but he has had no necrosis with the intravenous technic in the last years. The injection never induced fever. He compares his experience with the conflicting testimony of others in regard to calcium chlorid by the vein in various diseases.

**Refractometry and Viscosimetry of Tuberculous Serum.**—Peters was unable to confirm that these methods of investigation throw light on the diagnosis and course of tuberculosis, except that long repeated examinations showing a decline in



the albumin and globulin content of the serum indicates an upward, favorable trend.

### Zeitschrift für Urologie, Leipzig

1921, 15, No. 6

Suprapubic Prostatectomy. Ringleb.—p. 221.

\*Primary Carcinoma of Seminal Vesicles. Brack.—p. 232.

Bilateral Catheterization of Ureters. A. Narath.—p. 237.

\*The Epididymitis and Deferentitis Epithelium. D. Ohmori.—p. 240.

**Primary Carcinoma of the Seminal Vesicles.**—Brack says that he could find records of only six cases of this kind in the literature, but he has encountered two, himself, at necropsies. Metastasis is early and extensive, but there are no local symptoms until the malignant disease is far advanced. The patients were all aged.

**Changes in the Epithelium with Inflammation of Epididymis and Vas Deferens.**—Ohmori discusses the histologic changes in eleven gonorrheal or tuberculous cases.

1921, 15, No. 7

Operation for Pseudo-Stone in the Ureter. N. Kleiber.—p. 263.

\*Radiotherapy of Disease of Sexual Organs. F. M. Meyer.—p. 269.

Diagnosis of Ureter-Vagina Fistula. H. G. Pleschner.—p. 274.

Indications for Operation with Urinary Calculi. v. Rihmer.—p. 276.

Gonococcus Infection of Hydronephrotic Kidney. Dozsa.—p. 280.

\*Plastic Operations on Urethra. E. Pfeiffer.—p. 282.

**Radiotherapy for Disease of the Sexual Organs.**—Meyer's verdict is negative in regard to nonspecific catarrhal affections of the urethra and also for gonorrhea, in male or female. The roentgen and quartz lamp rays and even diathermy have proved ineffectual in his ten years of trials with a large material. But condylomas of all kinds yielded to well filtered and not too small doses of the roentgen rays, and this he regards as essential progress. Phagedenic ulcer molle also responded favorably to artificial heliotherapy. Rebellious syphilitic buboes, rebellious leg ulcers and alopecia may be favorably influenced by artificial heliotherapy in stimulating doses. Plastic induration of the penis subsided materially under the roentgen rays, and he advises to apply them early in such cases. Tuberculous epididymitis, hypertrophied prostate and bladder cancers should always be given operative treatment, but when this is not practicable, radiotherapy may give great relief. The spastic elements in the clinical picture may subside under it.

**Plastic Operations on the Urethra.**—Pfeiffer states that his reconstruction of the urethra, even for gaps of 6 to 8 cm., always healed smoothly and without mishaps later. His success is due, he is confident, to his principle of never using a retention catheter. He systematically diverts the urine, making the small incision into the bladder a week before the plastic operation on the urethra, except when a rupture forces him to operate at the one sitting. With the careful technic he uses, the fistula into the bladder always healed smoothly at the proper time.

1921, 15, No. 8

\*Functional Tests of the Kidneys. Richter.—p. 317. Idem. Casper.—p. 330.

Cystoscopic Findings in Paretic Bladder. E. Pfister.—p. 343.

Contrast Fluid for Pyelography. K. Scheele.—p. 347.

**Tests of Kidney Functioning.**—Casper remarks that a permanent functional disturbance always indicates that part of the parenchyma is not working, but it gives no hint as to the reason of this. This and the following issue of the *Zeitschrift* are devoted almost entirely to the lively discussion on this subject at a joint session of the organized internists and pediatricists and the urologists.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 8, 1921, 2, No. 15

Influence of Fatigue on Certain Optic Phenomena. Sanders.—p. 1820.

\*Anemia in Twins. T. Halbertsma.—p. 1837.

Principles for Treatment of Diabetes. H. A. Lubbers.—p. 1841.

Pseudodiphtheria Bacilli Not Avirulent Diphtheria Bacilli. J. W. Janzen.—p. 1847.

\*Initial Symptoms of Tabes. G. C. Bolten.—p. 1851.

**Comparative Therapeutics of Twins.**—Halbertsma was treating anemia in a pair of twins and compares the effect of transfusion of 130 c.c. of the father's blood (citrated) in one twin, with the effect of iron and arsenic drugs in the other.

They were prematurely born girl twins, weighing at 8 months 4,650 and 5,600 gm. and both presenting the clinical picture of pseudoleukemic anemia plus rachitis. The one given the transfusion was the most seriously affected, but it began to improve promptly and soon caught up with and surpassed the other twin in weight, while the blood improved and the spleen grew smaller. In the child given only iron and arsenic, the spleen had grown larger and the rachitis more severe, and the blood showed 1 per cent. myelocytes and 2 $\frac{3}{4}$  per cent. nucleated red corpuscles, in contrast to the corresponding figures of  $\frac{2}{3}$  and  $\frac{2}{3}$  in the transfusion child.

**Diagnosis of Incipient Tabes.**—Bolten describes some cases of unmistakable incipient tabes in which none of the four specific tests of spinal fluid or tests of the blood elicited a positive reaction. In some cases isolated paralysis of the ocular muscles, beginning atrophy of the optic nerve, with sluggish pupil reactions or anisocoria, may be regarded as testifying to tabes, even in the absence of all other signs, as also a symmetrical hard ulcer on the soles, the falling out of the hair and of sound teeth, a spontaneous fracture, or isolated crises in the larynx, bladder, stomach or arms. These may long precede other manifestations of the disease. One supposedly healthy woman at her third pregnancy had periods of pain in the anal region, but they did not return for six months after the birth of a healthy child. She consulted several physicians, but no one thought of tabes until the anal crises returned and with them other symptoms of tabes. A man of 30, otherwise healthy, applied for treatment of a symmetrical hard ulceration on both soles; it was not mal perforant, and the pupil and other reflexes were normal. Under treatment for syphilis, the long rebellious lesions healed, but he neglected to return for further treatment, and three years later lancinating pains and the pupil reflexes confirmed the diagnosis of tabes. A spontaneous fracture with no tendency to consolidation was long the only sign of tabes in another man of 32.

### Ugeskrift for Læger, Copenhagen

Dec. 15, 1921, 83, No. 50

\*Treatment of Chronic Polyarthritis. A. Faber.—p. 1663.

**Treatment of Chronic Polyarthritis.**—Faber refers to measures that can be carried out in the home after a course of treatment elsewhere, saying that in no other pathologic condition is the active personal cooperation of the patient so important. He must learn to help himself, and the physician can teach him how to do this, and encourage him to keep up his efforts. With crippling arthritis of the hand, the physician must ponder whether amputation and a good artificial hand might not be a gain. In one case he released the fluid in the crippled knee joint and injected a solution of phenol with good results; the pains nearly entirely vanished and the gait was much improved. The aim in treatment otherwise is to get the best function possible out of the crippled joint, and the constant and active use of the muscles that move the diseased joint is the best of all means for mobilizing exudates, warding off adhesions, etc. For this, daily gymnastic exercises are useful, and getting the patient interested in some amateur manual training work, a work bench or book binding work. Women can use a sewing machine, worked by foot or hand, and any form of knitting or the like is useful to train the arm and hand. A music loving patient can be encouraged to practice on the piano. If the patient can mount a bicycle, this is of course excellent. With a crippled foot, it is often possible to improve conditions by an insole or heel adapted to throw the weight on other muscles. This may at least relieve pain if it does not improve the gait. The use of an invalid's chair is perhaps the most difficult point, as they are not constructed with a view to aiding the patient to exercise his limbs, as they should be, for many cases. A tricycle would be better than these except that the seat is so uncomfortable. Better models should be devised for rolling chairs and tricycle. He has found it useful sometimes to give a little salicylate to precede the exercises. He sometimes advises a pause for a few days in the exercises, and gives bromids. This soothes and modifies the disturbances of a vasomotor nature.



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## BONE AND JOINT CHANGES IN CON- GENITAL SYPHILIS

WITH REPORT OF CASES \*

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The more usual clinical signs of congenital syphilis, such as the characteristic rash, snuffles, rhagades, eye changes, hutchinsonian teeth and visceral changes, present a picture of rather common incidence in outpatient departments and hospital wards. The pathology of the bones, however, with the concomitant clinical symptoms and signs occurring in this disease, seems to be less emphasized if of not less common occurrence, and is for this reason of sufficient interest to warrant discussion, especially in view of the many possibilities of errors in diagnosis. The aphorism that syphilis simulates all other diseases is particularly true of the skeletal pathology of this widespread disease.

The bone lesions present themselves in a variety of forms, and are of comparatively common occurrence. Probably the most frequent of these are epiphysitis; osteitis; painless hydrops articuli; periostitis, including dactylitis, and changes in the skull, such as craniotabes, thickening of the parietal and frontal bones, and a localized thickening of the bones with softening, known as caries sicca. Stoll<sup>1</sup> described a new condition which he calls "knock-knee-elbows" due to an overgrowth of the internal condyle of the humerus which throws the forearm to the outer or radial side. Kirmisson<sup>2</sup> calls attention to pathologic fragility, and cites a case of a spontaneous fracture in a syphilitic child, aged 1 year.

### AGE INCIDENCE OF LESIONS

Regarding age incidence, Findlay<sup>3</sup> states that bone changes may be present at birth or may develop later. In his series of about thirty-five cases, nineteen occurred during the first five months of life. Concerning the lesions seen in later childhood, appearing in the so-called osteitis syphilitica tarda, he gives the average age of incidence as from 8 to 10 years. These

later lesions may, however, occur at any age. Skillern<sup>4</sup> cites a case of syphilitic periostitis and osteitis of the phalanges of the middle finger in a colored man, aged 30. Clogg<sup>5</sup> says that the majority of cases of syphilitic epiphysitis occur during the first few months of life, the third month being the commonest period. He mentions the elbows, wrists and knees as the parts most frequently involved. In the patients whose histories we report, the ages ranged from 6 weeks to 9 years.

### PHASES OF PATHOLOGY

The pathology of these conditions presents some interesting phases. The first changes are characterized by periosteal thickening and the formation of granulation tissue. This granulation tissue causes an absorption of the already formed bone; and, after replacing it, later undergoes calcification. In this early stage of granulation tissue the roentgen ray may fail to detect any lesion because the pathologic calcified areas have not developed. Findlay describes a distinct epiphyseal variety of bone lesion (Wegner's osteochondritis), characterized by a broadening of the epiphyseal line with later fatty degeneration and necrosis, which gives rise to a yellowish epiphyseal zone with spontaneous separation of diaphysis and epiphysis.

Findlay sharply differentiates the pathology of the early from the late or "tardy" lesions. Under the heading of late bone lesions he mentions two types of osteoperiostitis: (1) the sclerosing or condensing, and (2) the gummatous, with necrosis and softening. The sclerosing type of lesion is characterized by increase in the size of the bone which produces a deformity. In the case of the tibia the periosteal new formation, occurring chiefly on the anterior surface, may give rise to the so-called "saber tibia." The gummatous type is characterized by necrosis, softening and abscess formation, especially in bones exposed to trauma.

Regarding dactylitis, Nichols and Ely<sup>6</sup> believe that this lesion is essentially a gummatous formation. They describe two varieties: the first or superficial form, affecting the subcutaneous connective tissue, the fibrous tissue and the soft parts; the second involving the bone or periosteum. In the first variety the dorsal surfaces are more liable to this form than the palmar, and the proximal phalanges are especially affected. The skin is purplish; the parts increase in size, and are tense and hard, or soft and semifluctuating. The gummas may break down but do not tend to suppurate. In the second form there is destruction of the bone and peri-

\* From the Medical Service of the Children's Hospital.

1. Stoll, H. F.: The Clinical Diagnosis of Heredisyphilis, J. A. M. A. **77**: 923 (Sept. 17) 1921.

2. Kirmisson, P.: Rév. gén. de clin. et de thérap. **30**: 1 (Jan. 1) 1916.

3. Findlay, Leonard: Syphilis in Childhood, Oxford Medical Publications, 1919, p. 48.

4. Skillern, P. G.: Internat. Clin., Series 23, **3**: 207, 1913.

5. Clogg, H. S.: The Diagnosis of Some Chronic Joint Affections, Internat. Clin., Series 16, **3**: 96, 1906.

6. Nichols, J. B., and Ely, L. W.: Diseases and Deformities of the Hands and Fingers, Reference Handbook of the Medical Sciences **4**: 867-901, 1914.



osteum. Relative to the joint changes, a not uncommon condition is the painless effusion of the knee joints which is at times associated with an osteoperiostitis of the lower end of the femur. Findlay and Riddell<sup>7</sup> have described a case which they designated "gummatous synovitis simulating rheumatoid arthritis" in which nearly all the joints of both limbs were affected.

The characteristic skull changes of congenital syphilis correspond to the general bone pathology. A thickening of the parietal and frontal bones in the region of the anterior fontanel, giving a square appearance to the head, has been termed the "hot cross bun head." We have observed this in only a few instances. Many writers regard this conformation, when typical, as pathognomonic of syphilis.

#### ACUTE EPIPHYSITIS

The symptoms and signs are in the main characteristic, especially in the infant, while in the older child variations are often encountered. In acute epiphysitis the onset is usually quite sudden with some constitutional reaction in the form of vomiting and gastrointestinal disturbances, followed by some degree of paralysis. The mother may state that the child was in apparently good health when suddenly it became ill with fever, vomiting and diarrhea. Following this there is usually a history of the child's crying continually when handled and especially on any movement of the extremities that happen to be involved; shortly after, an apparent paralysis is noticed by the mother. There may be some swelling and tenderness around the joints involved. However, in some instances there are no external signs, and even roentgen-ray examination may fail to reveal any definite pathologic condition. The Wassermann reaction will usually be found positive; but with the clinical picture just described, in an infant under 6 months of age, a negative reaction should not too greatly influence one in ruling out a syphilitic condition.

Case 1 is typical:

CASE 1.—V. D., a colored girl, aged 6 weeks, admitted, July 31, 1921, with Parrot's pseudoparalysis of both arms, was said by the mother never to have had any skin lesions, and had seemed in perfect health since birth. Since July 24 the child had no motion of the arms, and cried whenever they were handled by the mother. Physical examination revealed no signs of specific disease. The child was placed on inunctions and neo-arsphenamin. Three days after admission the Wassermann report came back three plus. Improvement was noted within two weeks, and on discharge the child could move both arms to a moderate degree. A roentgenogram in this case was reported negative.

That even the very young infant may have acute rather than latent symptoms of periosteal or perichondrial inflammation should always be borne in mind. Case 2, in which there was a very acute bone lesion, is instructive in this regard:

CASE 2.—W. S., a colored boy, aged 6 weeks, admitted, June 3, 1921, suffered from colic and tenesmus, the frequent passage of loose, green stools, and pain, swelling and tenderness of the left leg. The child had lost weight and had been quite ill. The Wassermann reaction was negative, but roentgen-ray examination revealed a definite osteoperiostitis of the left tibia. Specific treatment was instituted with prompt improvement.

#### LATE LESIONS

The late or tardy syphilitic manifestations in the long bones of older children are distinct in their clinical manifestations from those seen in the infant. The suggestive thickening and broadening of the bony structure, especially near the joints, the vague pains and sometimes lack of symptoms pointing to a constitutional disease usually cause these patients to appear in the orthopedic division of the outpatient department.

The subjoined histories are quite characteristic:

CASE 3.—*Acute osteoperiostitis.* H. L., a colored girl, aged 10 years, came under observation, May 19, 1921, with a swelling of the right leg. The mother stated that in the preceding November the child had sustained a fall, and that since that time the leg had been sensitive to touch and had been steadily growing larger. The Wassermann reaction was three plus. Roentgen-ray examination revealed a thickened cortex of the right tibia and to a lesser extent of the left. Routine antisiphilitic treatment was instituted, with marked improvement of the condition.

CASE 4.—R. R., a white boy, aged 7 years, came under observation, Jan. 15, 1921, complaining of pain in both knees. The mother stated that in December the joints had been swollen, tender and painful, and she thought that the swelling was increasing. The uncle stated that the father had syphilis. The child was

anemic and poorly nourished, there was general glandular involvement, and both knees were tender and swollen. The Wassermann reaction was three plus. Roentgen-ray examination disclosed osteoperiostitis of the tibiae with extensive involvement in the region of the condyles. Treatment was instituted and the child was discharged, March 3, improved. April 30, he was returned to the dispensary with involvement of the left arm. He was placed on a second course of treatment. The Wassermann reaction at this time was one plus.

#### DACTYLITIS

Dactylitis manifests itself as a gradual swelling with discoloration and tenderness of the phalanges involved, usually painless. Especially at first the lesions are frequently multiple, symmetrical, and there may be other signs of a syphilitic process in the nature of characteristic skin eruptions, condylomas and snuffles, with a strongly positive Wassermann reaction. A not uncommonly associated osteoperiostitis involving the tibiae presents a characteristic bowing with many palpable nodules. The child fails to thrive, and there is usually some elevation in temperature, with a history of frequent intestinal upsets, as in Case 5:

CASE 5.—G. P., a colored girl, aged 8 months, came under observation with a dactylitis involving the fingers of both hands and the little toe of the left foot. The mother stated that at 2 months of age the child had a diffuse skin eruption

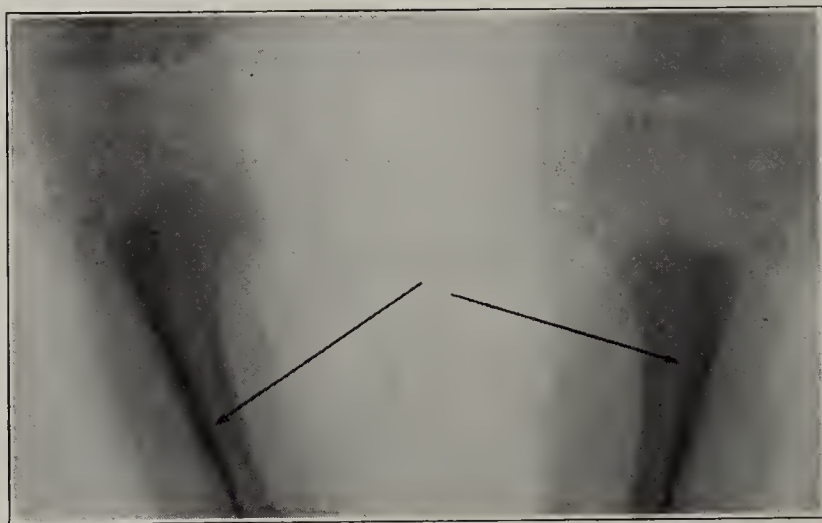


Fig. 1 (Case 2).—Osteoperiostitis of tibiae; Wassermann reaction negative.

7. Findlay and Riddell: Glasgow M. J., January, 1906, p. 13.



which later disappeared. Gastro-intestinal disturbances also occurred. Three weeks prior to admission there was a swelling of the right index finger and the ring finger of the left hand, and to a lesser extent of the left little toe, with redness and some tenderness. Physical examination revealed ulcerating condylomas around the vulva and anus, with several small, hard nodules over the right tibia. The Wassermann reaction was three plus. Roentgen-ray examination disclosed extensive bone changes in the fingers mentioned, the tibia and both elbows. The child was placed on routine anti-syphilitic treatment, with slight improvement, and was referred for further treatment following the mother's request to take the child out of the hospital.

CASE 6.—*Syphilitic dactylitis*. G. G., a colored boy, aged 2 months, came under observation, Aug. 18, 1921, with swollen fingers of the left hand and swelling of several toes of the left foot. The proximal phalanx of the left index finger was enlarged, discolored and tender; also the fourth toe of the left foot and to a lesser extent the fifth. The child snuffled; the spleen was palpable three finger breadths beneath the costal margin; the epitrochlears were enlarged; there was a desquamation of the soles of the feet, and there were several flat sores around the anus and scrotum. The Wassermann reaction was three plus. The stools were undigested. Treatment was promptly instituted. The child is still under observation and treatment.

The supposed comparative rarity of syphilitic dactylitis is not borne out by our observation of bone lesions as appearing in negro children. Out of seven skeletal lesions due to syphilis among negro children treated in the wards of the Children's Hospital in the last six months, two were dactylitis. Findlay states that he has come across this condition only twice. It is undoubtedly of more frequent occurrence in the American negro than in white children.

#### JOINT CONDITIONS

In cases involving the joints, either in the form of an effusion or an osteochondritis or both, the onset may be gradual. This is especially noted in the older children. There may be a negative history regarding early syphilitic manifestations, and the child is, to all appearances, in good health. The first complaint is of pain in a joint, commonly the knee, usually worse at night. This is a significant point in the matter of diagnosis. The mother almost invariably pays little attention to it, considering the condition as one of "growing pain." Later the joint begins to swell and is usually associated with some degree of tenderness. Other joints then become involved, and within a short time the character of the pathologic process may be brought to light by the development of other signs of syphilis. Roentgenograms may reveal a thickening of the periosteum at the condyles, or, not infrequently, show no changes at all. Fever may or may not accompany the condition.

One of our patients, presenting the symptoms and signs and the history described, developed interstitial keratitis two weeks following admission to the hospital:

CASE 7.—F. P., a colored girl, aged 9 years, came under observation, Sept. 16, 1921, with complaint of pain and swelling of both knee joints. About two weeks before, the child complained of pain in the right knee, worse at night, following which the joint began to swell. Shortly after, the mother stated that the left knee began to pain, followed by swelling. Both joints were tender at the time. Examination revealed both knees markedly swollen and tender, with a suggestion of fluid on palpation. The temperature was normal. The Wassermann reaction was three plus. Within a few days the tenderness and pain subsided. The child was placed on inunctions and neo-arsphenamin. Two weeks later the left eye revealed a well-marked interstitial keratitis. The child is still under observation.

In contrast to this is the case involving a joint, in which the onset is acute. This is likely to be seen in the infant, and is often associated with a rapid destruction of bone tissue with necrosis, softening and abscess formation. There may be little or no constitutional reaction, and the Wassermann reaction may be negative. Roentgen-ray examination, however, usually reveals the true nature of the lesion. Occasionally a septic joint presents a similar picture, and it is of vast importance to be able to differentiate. We shall discuss this more fully under the heading of differential diagnosis. The skull changes are fairly typical, and are commonly associated with other stigmas of syphilis.

Case 8 is an instance of the acute type in the infant:

CASE 8.—T. J., a colored girl, aged 4 weeks, was admitted, Sept. 23, 1921, with a swelling of the right knee, and slight fever. The child took its formula well and there was no diarrhea. Examination revealed a marked swelling of the right knee joint, with redness, tenderness and fluctuation. There were a few papules on the face, but the child had no definite stigmas of syphilis. Roentgen-ray examination revealed a destructive process involving the distal extremity of the right femur. Within a few days the right arm became

involved, manifested by swelling and tenderness at the wrist. A roentgenogram disclosed extensive destruction of the entire right radius. The Wassermann reaction in this case was negative, but the bone changes were strongly suggestive of a syphilitic process, so the child was placed on antisyphilitic therapy, and is at the present writing much improved and still under observation.

#### THE DIAGNOSIS OF BONE LESIONS

The diagnosis, under ordinary conditions, should offer no difficulties. The history, if carefully obtained from the mother, will usually reveal some previous manifestations of the disease. A history of some syphilitic lesion in the mother or father, with positive blood findings, together with a knowledge of the behavior of the child's health since birth, will help to substantiate a suspicion of a syphilitic condition. An acute onset with a localized swelling, tenderness and pain over a joint or bone in an infant should suggest, among other possibilities, an osteitis or a periostitis of

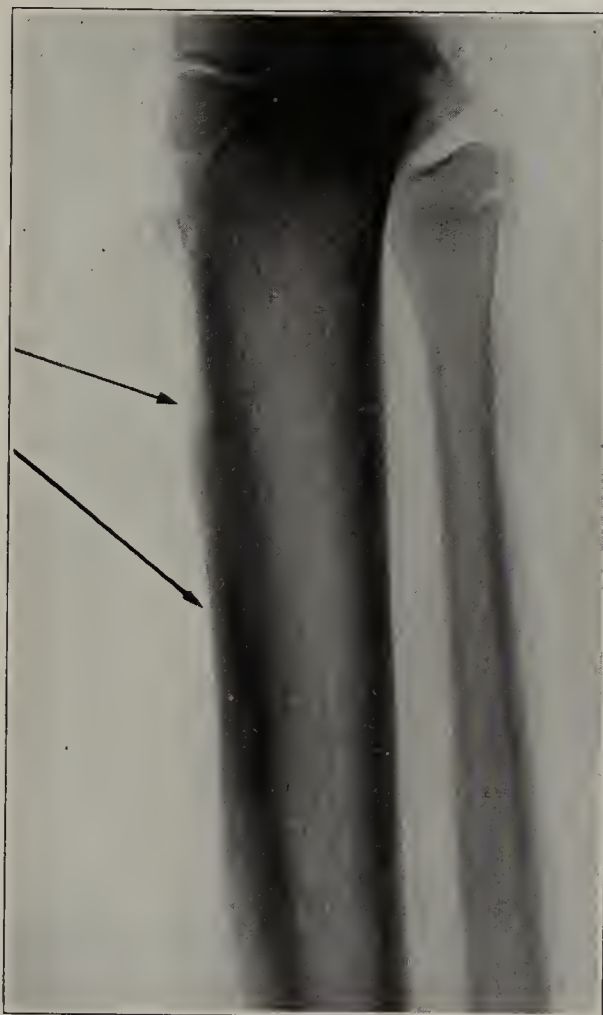


Fig. 2 (Case 3).—Osteoperiostitis: cortex of right tibia (anterior and middle portion) greatly thickened; Wassermann reactions, three plus.



syphilitic origin. Roentgenologic examination will usually reveal characteristic changes in the bone or joint, while the presence of other signs of syphilis will give confirmatory evidence. Regarding the Wassermann reaction in these cases, it is well to say that while a positive reaction is undoubtedly of great significance, a negative by no means rules out a syphilitic process in the presence of definite clinical findings. We can best emphasize the relative value of the Wassermann test in the diagnosis of hereditary syphilis by quoting Ugon<sup>8</sup> in his summary following an analysis of 2,414



Fig. 3 (Case 4).—Osteoperiostitis: anterior cortices of tibiae thickened, and slight evidence of a destructive process along the image of the internal condyles; Wassermann reaction, one plus.

Wassermann examinations done on 2,103 infants. In 1,972 cases the clinical findings and the blood reaction were in accord, whereas in 131 cases they were contradictory. He concluded that:

The complexity of the test, the scrupulous care with which it must be performed, and the diverse factors which modify the substances involved therein prevent us from being categorical regarding its findings. . . . The test should be considered as a diagnostic element of the first order, added to the physical findings and clinical course of the case. . . . It cannot supplant physical and clinical findings; it should complete them.

In the differential diagnosis of the various syphilitic bone lesions a number of conditions must be considered. Acute epiphysitis (Parrot's pseudoparalysis) must be differentiated from (1) Erb's paralysis, (2) scurvy and (3) acute poliomyelitis. The first condition mentioned appears very shortly after birth, the palsy is characteristic, and there is a history of a prolonged, difficult labor or of instrumental delivery. Clinical and physical findings relative to syphilis are negative. Scurvy occurs usually in later infancy, the feeding history is suggestive, tenderness and swelling are marked, there is bleeding from the gums, and the roentgen-ray examination reveals a subperiosteal hemorrhage with the characteristic "white line." Regarding poliomyelitis, in an infant under 6 months, the age itself suggests a syphilitic process. Findlay says: "It may be taken as an axiom that loss of power of a limb in an infant under 6 months of age is due to syphilitic osteitis." The history of exposure to poliomyelitis, the prevalence of the disease in epidemic

form, and characteristic spinal fluid findings will obviate any difficulties in diagnosis. Acute osteitis of the tibiae with saber deformity is to be differentiated from a similar deformity due to rachitis. The former is a curve due to periosteal new formation and thickening of the bone, while the latter is a curving of the bone due to a deficiency of calcium and phosphorus. The syphilitic type is an apparent curvature, while the rachitic type is an actual one. Roentgenologic examination of the bones will confirm this differentiation. The age of onset is important. Rickets is rarely present in the bones in the first few months of life. Syphilitic epiphysitis and osteitis are seen at an early age. The ribs are rarely affected in syphilis, and commonly in rickets. Syphilitic bone enlargements have a tendency to involve the shaft by periosteal implication. Rachitic enlargement is usually limited to the epiphyses, and there is seldom pain or tenderness except in acute cases. Osteoperiostitis with necrosis and abscess formation may sometimes be mistaken for tuberculous osteomyelitis. The roentgen ray will aid greatly in differentiating. In the syphilitic variety there is a great amount of periosteal thickening, with the areas of necrosis situated in the center of the shaft. In the tuberculous type there is usually surface ulceration of the bone, with a localized thickening of the periosteum around the area of ulceration. A history of nocturnal pain may be significant of a syphilitic condition. The Wassermann test will in many cases confirm the diagnosis. A comparatively rare condition which one may occasionally be called on to differentiate from a late syphilitic osteitis is a malignant tumor of the suprarenal (neuroblastoma),<sup>9</sup> which has a tendency to bone metastases. The roentgen ray and the Wassermann test, together with the history, clinical picture and physical findings, will decide the nature of the disease.

A septic infection with localization in a joint often presents a similar picture to that of the syphilitic epiphysitis with abscess formation. A marked constitutional reaction in the absence of a positive blood



Fig. 4 (Case 5).—Syphilitic dactylitis; Wassermann reaction, three plus.

reaction and other stigmas of syphilis, together with the finding of a focus of infection, decides strongly in favor of a septic process.

Still's disease, while presenting some similarities to a syphilitic process in the form of multiple joint involvement, is associated with enlargement of the lymphatic glands, leukocytosis, secondary anemia and constitutional disturbances, and commonly occurs in later childhood.

8. Ugon, Armand: Early Hereditary Syphilis and the Wassermann Reaction, Arch. Españ. de Pediat., August, 1920, p. 485.

9. Carter, W. E.: Medullary Malignancies of the Suprarenal Gland, Report of Four Cases, Am. J. Dis. Child. 22: 244 (Sept.) 1921.



The chief condition from which syphilitic dactylitis must be differentiated is tuberculous dactylitis (*spina ventosa*). The latter is more frequent, usually involves the first phalanx of the index finger, and is most commonly seen in early life, during the second and third years. The syphilitic type presents multiple, symmetrical lesions with other signs of syphilis.

#### THE TREATMENT OF SKELETAL LESIONS

The treatment should be promptly instituted, and consists of mercurial inunctions and the administra-

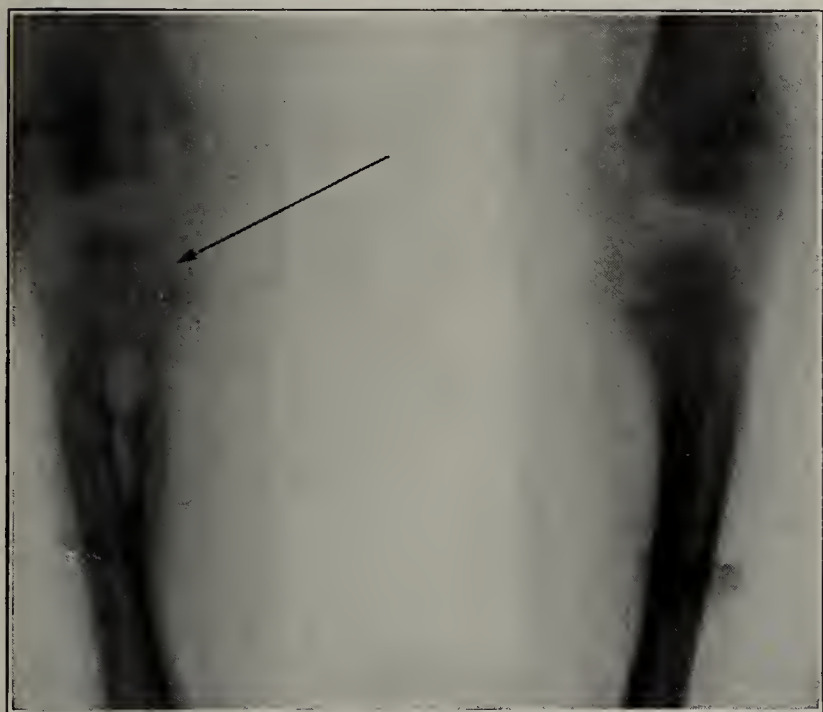


Fig. 5 (Case 5).—Osteoperiostitis: periosteal elevation along right tibia, with rarefied area in the proximal extremity; Wassermann reaction, three plus.

tion of arsphenamin or neo-arsphenamin. We have seen excellent results from weekly injections of neo-arsphenamin (intravenous), mercurial inunctions applied three times weekly during alternate weeks, and the intramuscular injections of mercuric chlorid. The neo-arsphenamin was given in the dose of 15 mg. per kilogram of body weight; the mercuric chlorid in the dose of  $\frac{1}{2}$  minim of a 1 per cent. solution per kilogram of body weight. In some late cases, potassium iodid, 5 grains (0.324 gm.) three times a day, is of some benefit. The length of time during which treatment is carried out depends on the individual case. The Wassermann reaction and the disappearance of symptoms and signs offer the guide. The question of treatment affords a topic for lengthy discussion, which we shall not attempt here.

The cases reported, which have all been found in the wards of the Children's Hospital, Washington, D. C., within a period of nine months, illustrate many of the points discussed with reference to pathology, symptoms, signs, diagnosis and treatment. They serve also to bear out the observations of other clinicians to the effect that in some cases of hereditary syphilis the Wassermann reaction may be absent, and rather emphasize the importance of the contributory evidence of syphilitic bone disease which may be furnished by the roentgen ray. This bears out Hochsinger's observation that in practically every infant dying of syphilis, gross bone lesions could be observed, and the roentgenogram looms larger as a possible aid to diagnosis of congenital syphilis even in cases presenting no obvious bone lesions.

## CONGENITAL DISLOCATION OF THE HIP \*

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CHICAGO

In view of the astonishingly wide variation of opinion with regard to the treatment and results of congenital dislocation of the hip, and in view of the fact that control of these cases in early life is one of the most important requisites toward a favorable prognosis, discussion of this subject is desirable.

#### HISTORY

Congenital dislocation of the hip has been recognized since the time of Hippocrates, who described it and regarded it as curable. In 1710, Zwinger mentioned the occurrence of this deformity in three children in one family. In an interesting old monograph published in 1826, Dupuytren gives us the first comprehensive picture of the condition. Mechanical treatment was instituted in 1838 by Pravaz, who replaced the head by means of extension but was unable to retain it in the acetabulum. Nearthrosis was performed in 1879 by Roser and Hunter. Hoffa, and later Lorenz, were the first to devise technics for the treatment of the deformity by open operation, and many others have followed them. The next most important step in the treatment was the manipulative method devised by Paci in 1889, with the modifications of Paci's technic by Lorenz in 1895 and later by Schede and various other workers. In America the accomplishments in this field of surgery have been numerous.

TABLE 1.—METHODS OF PACI AND LORENZ GIVEN BY PACI

Paci's Method. Published in 1889	Lorenz's* Method Published in 1896
Anesthesia	Anesthesia
I Stage: Reduction	I Stage: Reduction
(a) Flexion	(a) Forced extension*
(b) Gradual abduction	(b) Flexion
(c) Outward rotation combined with more forcible abduction	(c) Forced abduction to a right angle
(d) Stretching	(d) Outward rotation*
II Stage: Formation of new joint	(e) Gradual stretching
	II Stage: Formation of new joint

\* Lorenz, A.: The Bloodless Treatment of Congenital Dislocation of the Hip Joint, *Med. Press & Circ.* 70: 158, 1900.

#### INCIDENCE

Congenital dislocation of the hip is not an infrequent deformity, and yet it is not so common as tuberculous spine or tuberculous hip. Probably it occurs as often as, or a little less frequently than, uncomplicated congenital clubfoot. In a hasty survey of the records at St. Luke's Hospital, Chicago, for the Tuesday and Thursday orthopedic clinics, I compiled from the reference cards thirty-three cases. Eleven others, which were not mentioned among the hospital lists, were recorded at the office as having been referred to the clinics. This makes a total of forty-four cases observed in a two-day-a-week orthopedic clinic with an attendance averaging between thirty and fifty patients a week. If no allowance is made for lost reference cards, we may count these forty-four cases as having been observed during a period of eleven years. Accord-

\* From the University of Illinois College of Medicine and the orthopedic department of St. Luke's Hospital.

\* Owing to lack of space, this article is abbreviated in *THE JOURNAL*. The complete article appears in the author's reprints.



ingly, there were four cases a year, an incidence perhaps relatively low.

The deformity is much more common in girls than in boys. Its incidence in girls is usually reported as ranging from 80 to 89 per cent. Of the forty-four patients treated in the St. Luke's Hospital clinics, thirty-three were girls. Therefore, in this series the percentage was slightly lower than the average, being 75. There were no negroes, and rickets was present in only one case.

#### ETIOLOGY

There are many theories regarding this deformity. It has been attributed to heredity; intra-uterine pressure; injury at birth; the effect of malposition of the child in the uterus, associated with pressure; anomalies; arrested development; perverted development, and various other factors. Numerous authors disregard hereditary influence, but many others support it. Crookshank and Newberry reported bilateral dislocation of the hip in female twins 8 years and 11 months of age. In both, there was marked displacement of the head of the femur on the dorsum ilii on either side. These children belonged to a family of seven others, six of whom were older and one younger. None of the others exhibited any malformation. Crookshank states that apparently the twins were the "joint products of one ovum and therefore, unless the operation at a later date of some factor affecting both embryos identically could be assumed, it must be thought that the condition determining the deformity existed at the time of fertilization."

I recall instances in which both the mother and a child were similarly affected; in which a grandmother and a grandchild had the deformity, and in which two children in the same family were thus crippled. If heredity is not the cause, it seems at least to present itself as a factor in the final result.

Intra-uterine pressure, normal or abnormal, should not be discarded as a causative element if it is associated with a hereditary tendency and faulty development of the anatomic structures about the hip joint. Call the responsible factor arrested development, perverted growth or what you please, if the foundation or construction of the hip joint architecture varies from the normal so that its elements are weakened at any formative stage, pressure within the uterus or when the child begins to stand may result in dislocation. The three factors heredity, perverted or arrested development, and intra-uterine pressure may certainly be kept under suspicion.

#### PATHOLOGY

The pathology of congenital dislocation of the hip is for the most part a deformed anatomy. The head and neck, and at times the shaft of the femur, lack size and symmetry. Normal development often appears to have failed. The femoral head may be flattened, the neck small and short, and the angle of the head and neck to the shaft may be abnormal. Coxa vara or valga, or rotation may be present. In older cases, the head and neck of the femur may be absorbed. The acetabulum is often shallow, its lips are low or absent, and its cavity is filled with soft tissue. In older patients often a deep new or secondary acetabulum is formed at the new point of function of the femoral head on the ilium. The capsule and ligamentum teres are stretched and often twisted. The muscles about the joint become short in order to adapt themselves to the shortened leg. Osteoarthritis, or at least the roentgen-ray evidence of it, appears around the joint and is a frequent development in the older patients, especially when the patient is heavy.

#### TREATMENT

The reduction of congenital dislocation of the hip should usually be manipulative; infrequently it should be operative.

1. *Open or Operative Reduction.*—Open operation has a very distinct place in the reduction of congenital dislocation of the hip, but should be used only in carefully selected cases. If a case is in the manipulative class, i. e., if the patient is not over 6 years of age and the leg is not more than 2 inches (5 cm.) short, manual replacement should be attempted. If this fails, the limb should be put up in plaster in a position of flexion, abduction and outward rotation for one or two weeks, after which period a second trial at closed reduction should be made. If this also fails, a second cast should be applied in order to take advantage of the additional relaxation of the tissues produced by the first cast. The second cast should be removed in two weeks. Following its removal, the skin

should be prepared for four days and the hip then opened for reduction.

Among the routes of approach to the hip joint are Brackett's lateroposterior route, Smith-Petersen's supra-articular subperiosteal approach, Galloway's anterior and posterior routes, and Sherman's approach.

#### CLOSED REDUCTION

2. *Extension Reduction.*—I have never used mechanical extension as a method of effecting reduction and



Fig. 1.—Two brothers, aged 19 and 13½, with bilateral, congenital dislocation of the hips unreduced and unreducible, complaining of pain and tiring quickly. Such cases emphasize the importance of having this type of dislocation under observation by the third year of age. Note prominence of trochanters and space between upper third of thighs. These boys have an uncle who has been lame from birth and two sisters with marked right dorsal scoliosis.



believe that, as such, it is ineffective. In certain older cases in which the prospect of manual reduction was slight, I have used mechanical extension for a few days for preliminary stretching of the parts.



Figs. 2 and 3.—Bilateral unreduced congenital dislocation of the hip neglected in early life (patients shown in Figure 1). Note deep malformed sockets and obliteration of the true acetabula.

3. *Machine Reduction.*—I have never made use of machines in attempts at reduction. In those cases in which I have seen the reduction tables used, they seemed either unsatisfactory or unnecessary.

One's most valuable aid in the management of these cases is a skill developed in the fingers by extensive and thorough digital examinations made before and at the time of manipulation for reduction. The use of the machine not only robs the operator of this most valuable aid, but endangers the patient because it attempts reduction blindly and applies dangerous force.

4. *Manual Reduction.*—The most important aid in successful manual reduction of congenital dislocation of the hip is the good fortune to have the case under control by the time the patient is 3 years of age. Its future course may then be guided, and operation performed, when indicated by the condition of the parts.

The second most important aid in the manual treatment of this deformity is the ability to interpret the condition and the relations of the structures of the hip joint by means of one's fingers. The roentgen ray should be used only to confirm and supplement the manual examination, and the plate should never be examined until the surgeon is satisfied with his manual interpretation.

The third most important aid is gentleness in the manipulation to effect the reduction. There should be no rough treatment of the hip. The best results are obtained when the muscles and other tissues are given time, during the manipulative stretchings, to accommodate themselves to the changed conditions effected by the flexion, abduction and rotation. This is true both when the hip slips into the acetabulum easily and also when manual reduction fails. In the former type of case, the muscles which are stretched only enough to allow the head to enter the socket act as elastic bands and hold it snugly in place. In those cases in which manual reduction is impossible, the carefully stretched tissues will be of more aid in the open reduction than those violently handled because, though longer, they will resume their elasticity sooner and function better. Another advantage of gentle manipulation is that it is followed by much less blood clot, and therefore open operation, if indicated, is facilitated and the chance of infection is decreased.

Formerly it was the practice of certain surgeons to attempt to deepen or manufacture an acetabulum. After the replacement was complete, the operator placed his hand on the knee and, the leg being flexed, forcibly rotated the head of the femur in the socket. Such a practice severely damages the socket and the head, neck and shaft of the femur. It also disturbs growth, which is so greatly needed by a joint which has lacked function, and it predisposes to pathologic changes such as arthritis.

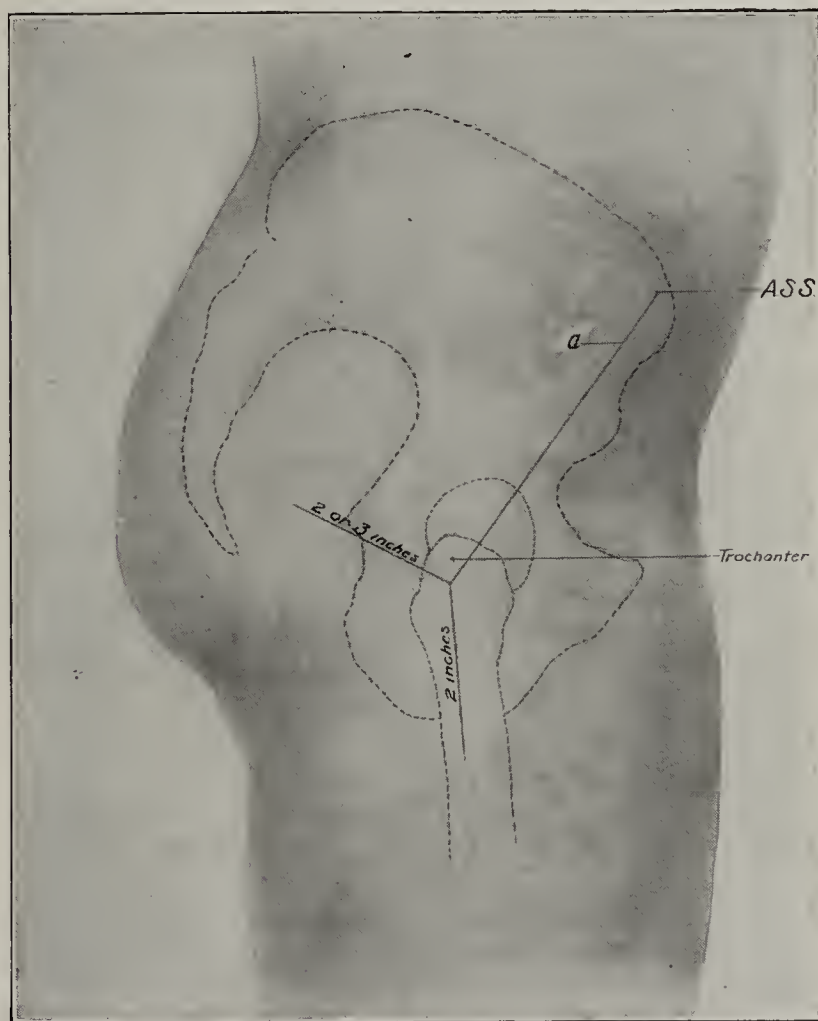


Fig. 4.—Lateroposterior route. In this illustration and Figures 5 and 6 the Brackett approach to the hip joint is shown. This diagram outlines the skin incisions and their lengths with an outline of the underlying bone. The incision at A, beginning at the anterior superior spine, and extending obliquely downward and outward, should terminate at the middle of the outer side of the trochanter.

*Direct Reduction Without Preparatory Stretching of the Tissues:* When the patient is between 3 and 4½ years of age and the shortening does not exceed 1½



inches (3.7 cm.), direct (continuous motion) reduction should be attempted. The surgeon takes a position at the orthopedic table by the side of the dislocated hip; he places the fingers of one hand over the

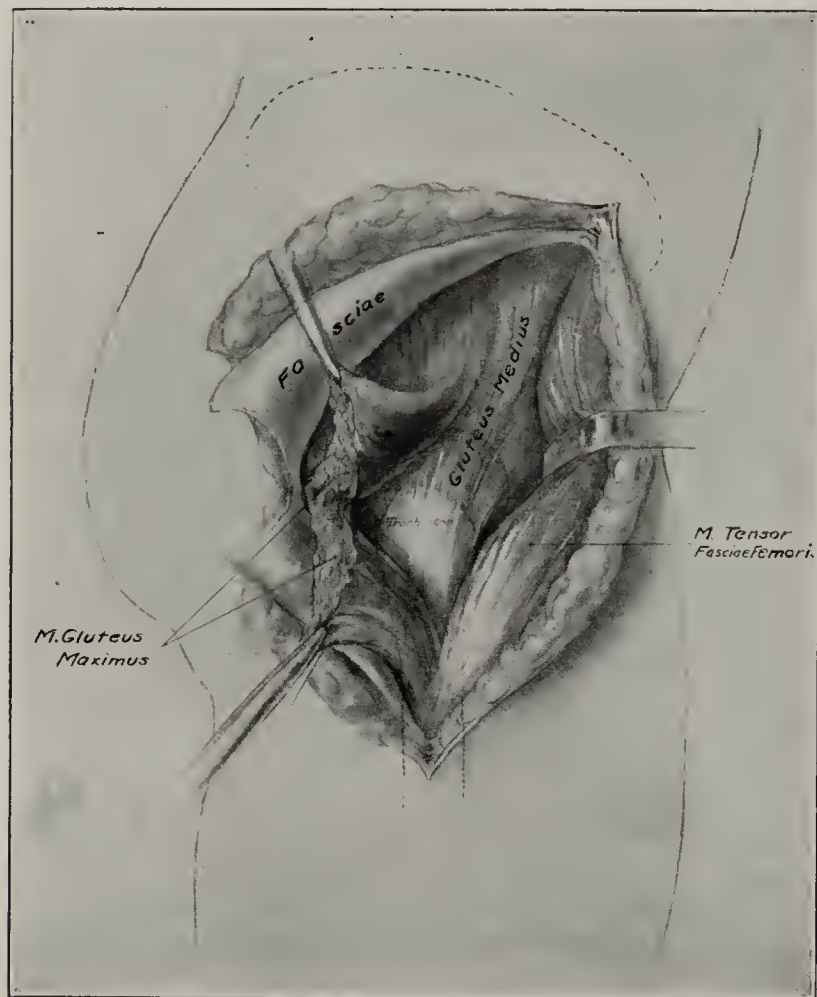


Fig. 5.—Right angle incision, cutting skin fascia and the gluteus maximus muscle; the tensor fasciae femoris muscle is shown drawn anteriorly; the trochanter, with the attachments of the gluteus medius, gluteus minimus and piriformis, will be shown turned back in Figure 6.

trochanter, feeling the head of the femur through the gluteal muscles; he places the thumb anteriorly below the crest of the pelvis, finds the artery, and places the other hand on the knee, with the leg flexed on the thigh. While the assistant stands on the opposite side of the table and steadies the pelvis, the operator flexes the thigh firmly but slowly and cautiously until the knee approaches the chest or the extreme of flexion, as judged by the resistance. Frequently the position of the head will then be below the acetabulum as is shown in Figure 7. From this flexed position, with no pause in the movement, the thigh is brought slowly into abduction until the angle formed by the thigh and chest in the axillary line is a right angle. Replacement will often be effected as this position is reached or is slightly exaggerated while moderate rotation is made with the left hand and the femoral head and neck are lifted forward and toward the crest, with the right hand (Figs. 7, 8, 9 and 10).

**Reduction Following Preliminary Stretching of the Tissues:** If the muscles give considerable resistance, evident from the feel and inability to abduct the thigh fully, repeated stretching is necessary. This should be done gradually, some time being consumed for the movements and massage. Then one should repeat the firm flexion, abduction, outward rotation, and forward and upward lifting with the knee hand. If necessary, hyperabduction is added so as to bring the knee to a point back of a plane through the hips and rotate outward. If reduction fails, one should cautiously bring the thigh to full flexion with the leg

straight, the foot close to the patient's face, strongly abduct, rotate outward, and try as before. If this fails, extreme flexion is again produced, and a roentgen-ray examination in this flexed position is made to determine the position of the head in relation to the socket, and the hip is put up in the flexed abducted position, rotated in or out as indicated by the sensation of firmness. A cast is applied for one or two weeks, and then reduction is attempted again. If this is again unsuccessful, treatment should be given by the open method if in the judgment of the operator the tissues will permit it, i. e., if he believes that they will not show trophic changes following the reduction because of the tenseness of the muscles.

**Position of Reduced Hip for Fixation in the Cast:** When the hip is successfully reduced, it should not be redisplaced. One hand should be kept over the pelvis, and the thigh should be moved with the other, the position of greatest stability thus being determined, and the hip should be fixed in plaster in this position. I call this position, whatever it may be, Ridlon's position. It may prove to be Lange's position, i. e., flexion 90 degrees, abduction 90 degrees, inward rotation. If the upper lip of the socket is flat and the head slips out easily, it should be Werndorff's position. Werndorff's position consists in axillary abduction or the extreme degree of negative abduction in which the upper thigh is fixed to the thorax. The most favorable position may be also the Lorenz position, i. e., right angle abduc-

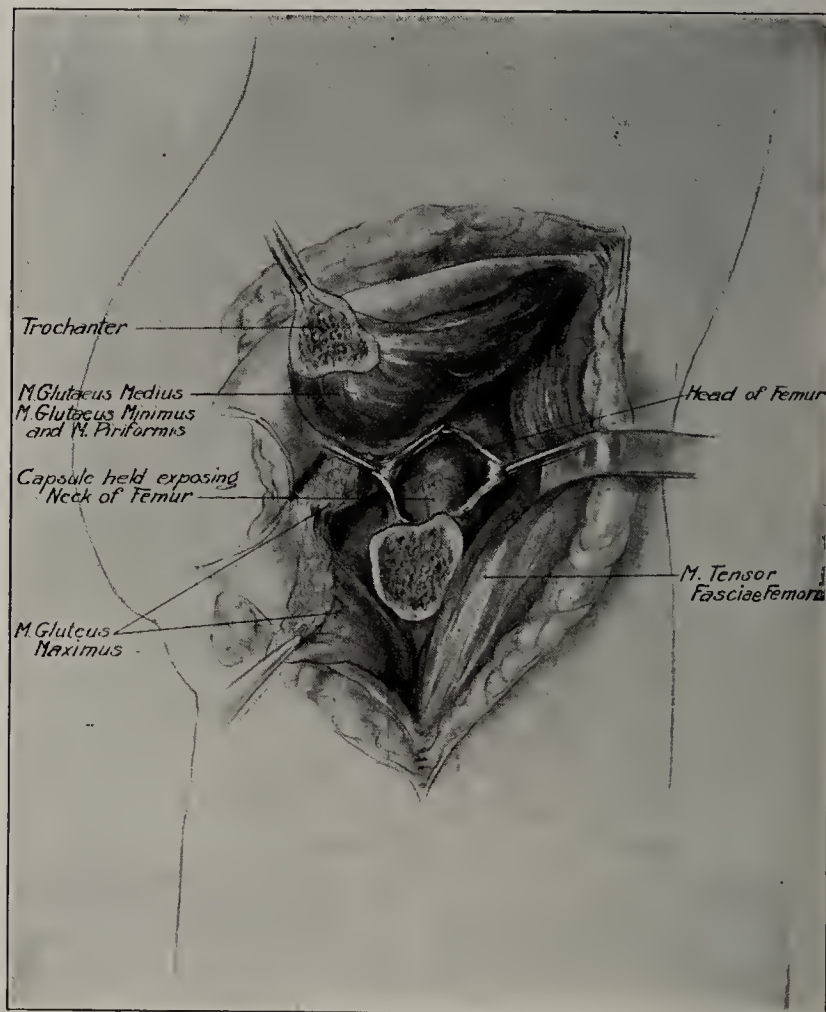


Fig. 6.—Field after outer and upper surface of trochanter has been chiseled off; to it are attached the gluteus medius, gluteus minimus and piriformis muscles; the neck of the femur has not been damaged; the capsule is laid open and the neck and head have been exposed.

tion, the thigh being fixed in extreme abduction and slight overextension for a period of from four to five months.

**The Cast:** The technic of applying the cast requires mere mention. The cast should be a strong and



evenly applied single or double spica. Stockinet, sheet wadding and felt should be used to protect, especially the anterior spines and the sacrum. Two pieces of felt, each 1 inch (2.5 cm.) thick, should be placed over the sacrum. The morning after operation, one piece of it should be removed. This practice will be found greatly to relieve the pressure at a critical spot on the back.

**Inclusion of the Knee in the Cast:** The knee is not usually included in the cast. If it is believed that the knee structures have been strained, the leg should be included for a week and then released, the cast being cut off at the upper edge of the patella.

**Length of Time the Cast Should be Worn:** Fixation should be continuous, in most cases for from seven to ten months without change of position. The cast may be changed every two, three or four months as may seem necessary. In cases in which the entrance of the head into the socket, as judged both by the sound and by the sensation to the hands, indicates a good prognosis, the initial position in flexion and abduction need not be continued as long as seven months, and the leg may be brought down slightly in four or five months.

**Walking in the Cast:** Function should be encouraged as soon as possible, whether the dislocation is unilateral or bilateral. It is difficult to convince the parents that a child who has had both hips reduced will walk while he is in the abduction cast, but he will.

**Observation After Reduction:** Frequent examinations should be made during the period of fixation in the cast. One's fingers can easily feel the artery, and, by moving the knee, one can determine the position of the femoral head with reference to the artery. Inspection and encouragement of walking are essential. Of minor importance is the examination of the skin and the instruction of the nurse or parent regarding its care.

**Release from the Cast:** The child should be released from the cast preferably in the hospital, where it may be kept under observation and given proper massage and exercise afterward. The posterior half of the cast should be saved. At the end of a day or so the child may go home, carried in the posterior shell of the cast. If hospital release is impossible, the cast may be split in the office. The sides are cut down and the top is removed, the lower shell being saved. The patient is removed, the hip is examined, and the parents are instructed how to massage and replace the child in the cast. Following release from the cast either at the hospital or at the surgeon's office, the child should be allowed to remain out of the cast, kicking about the bed for a week or so, but should not be allowed to stand. If at examination at the end of two weeks the position of the hip is satisfactory, standing and walking may be allowed but should not be forced. The

patient is then ready for discharge except for occasional observations.

#### COMPLICATIONS DURING TREATMENT

Probably the most frequent accident during treatment is fracture of the neck of the femur. Even as strong an advocate of manipulative treatment as Lorenz has reported eleven cases of such fracture. I have witnessed three cases, all in patients whose muscles and femur were atrophied by cast fixation following a preliminary trial at reduction. An atrophied femur will fracture easily.

The second most frequent complication occurring during reduction is paralysis. This may involve the sciatic, peroneal or crural nerves, and may be permanent or temporary. Paralysis occurred in only one of my cases. In this instance the sciatic nerve was affected but the condition was only temporary.

Other complications reported by Lorenz are rupture of the femoral artery in one case and gangrene requiring amputation at the hip in another. These accidents must be very rare.

#### PROGNOSIS

The prognosis of congenital dislocation of the hip is problematic. This is shown by the necessity for the appointment of a commission to investigate the subject, and the fact that in the recent report made by this commission after a year's examination of case records, patients and roentgenograms at various clinics in different cities, it asks for more time in which to gather material and to draw conclusions. It is evident, however, that much progress has been made in the management of this deformity, and that this progress is due to the same desire that prompted the appointment of the commission to study the condition, present data and make recommendations. We know that there is no standardization of methods of manipulation or operation and that often there is very little care in the selection of cases. We feel also that our percentage of good results is below what it should be.

An idea of the results obtained so far may be gained from consideration of the following reports:

Ridlon states that "good results have been obtained in from 50 to 80 per cent. of the cases."

In 1910, Brackett reported cures amounting to 76.3 per cent. following manipulative treatment at the Boston Children's Hospital during the years 1906-1908, as against cures amount-

ing to 5 per cent. following similar treatment during the years 1896-1902. The improvement in results following open treatment was, he thinks, almost as striking, the percentage of cures for the years 1904-1906 being 73, while that for the years 1896-1902 was 32.

Soutter reported the results of an investigation of 240 cases of congenital dislocation of the hip. Of 160



Fig. 7 (M. L.).—Girl, aged 7½, with bilateral congenital dislocation of the hip reduced when she was 3½ years old. The hips have been in for four years. The roentgenogram shows perfect reduction but a good deal of cloudiness about the heads and sockets. The symmetry is only fair. The right buttock is small and the gluteal crease on the right side is slightly low. The right head probably rides a little high. Function is excellent, though at times there is a slight limp.



of these which have been analyzed, reduction was effected in 120 and was not effected in forty. Of the forty patients with unreduced hips, twelve never returned for operation or advice, fifteen have no acetabulum,<sup>1</sup> and ten are unaccounted for. Of the patients with bilateral dislocation of the hip which was successfully reduced, 67 per cent. had an excellent gait,



Fig. 8 (M. L.).—Roentgenogram taken when patient was 3½ years of age. Head, necks and height indicate a good prognosis as to retention and no trouble in the reduction, although there may be capsule or other soft tissue interference. True sockets at A.

27 per cent. a good gait, and 6 per cent. a fair gait. Of those with bilateral dislocation which was successfully reduced, 65 per cent. have an excellent gait, 20 per cent. a good gait, and 15 per cent. a poor gait.

Turley has recently made an interesting report of the examination of a case of congenital dislocation of the hip fifteen years after Lorenz reduced the deformity by manipulation. The findings of the examination are given briefly as follows:

General appearance robust; walks without a limp. The right gluteal region is flatter and the right thigh and leg less in circumference than the left. The spine is straight. There is no perceptible pelvic tilt. There is but a slight difference in the length of the lower limbs. Flexion, extension, adduction and abduction are not limited. Roentgen examination: Development of the right femur below the neck is the same as the left. The head of the right femur is deformed, being somewhat mushroomed, and there is a slight coxa vara.

This was only one of six cases in which operation was performed by Lorenz in one clinic in which perfect functional results were obtained. In 1904, Ridlon reported perfect functional results in only one tenth of twenty-nine patients operated on by Lorenz. Lorenz claimed that in his own country he obtained good functional results in 50 per cent. of these cases; but probably this was due to the fact that the after-treatment was carried out under his personal supervision.

Stern reported cases treated by the Lorenz closed method with these results: anatomic cures, six; perfect functional results, one; good functional result and transportation, with good function, three; redislocation, failure, one hip, and untoward results, none. Ideal results were obtained, therefore, in 63.3 per cent. of the cases.

In a paper read recently at Toronto, Galloway reported the following results in thirty-eight open

operations on thirty-one patients: cures, twelve; good results, fourteen; failures, six; doubtful results, six. In the cured cases one hip was practically indistinguishable from the other.

Sherman reports that he has reduced twenty-eight hips in twenty children by arthrotomy. Of these, seventeen hips are known to be in a stable position with the head in the acetabulum. In children under 7 years of age there is ample range of motion at the hip, and no tendency to ankylosis has been observed, but in older children ankylosis must be combated. In an active child the joint may work loose. It was found that some hips reluxated because the period of fixation in the plaster cast was too short.

The prognosis in my own cases has been greatly influenced by eight factors:

1. Early recognition of the case and observation until reduction is attempted. In recent years we are getting the cases at an earlier age because of a better understanding of the situation by the nurses and the laity. Much credit in this educational work must be given to the nurses. Though very few training schools give their nurses a course in orthopedic surgery, the girls are learning its importance and are obtaining graduate instruction regarding deformities from the social service, city health, industrial and visiting nurse organizations so that they recognize the fact that when they bring a 3 year old child with congenital dislocation of the hip to the orthopedic surgeon they have done probably the most important thing in its treatment. It is discouraging, indeed, to have a girl, like M. R. (Fig. 11), appear for treatment at the age of 12 years. Both hips were very high; the femoral heads were buried in their new sockets; the thighs were large,

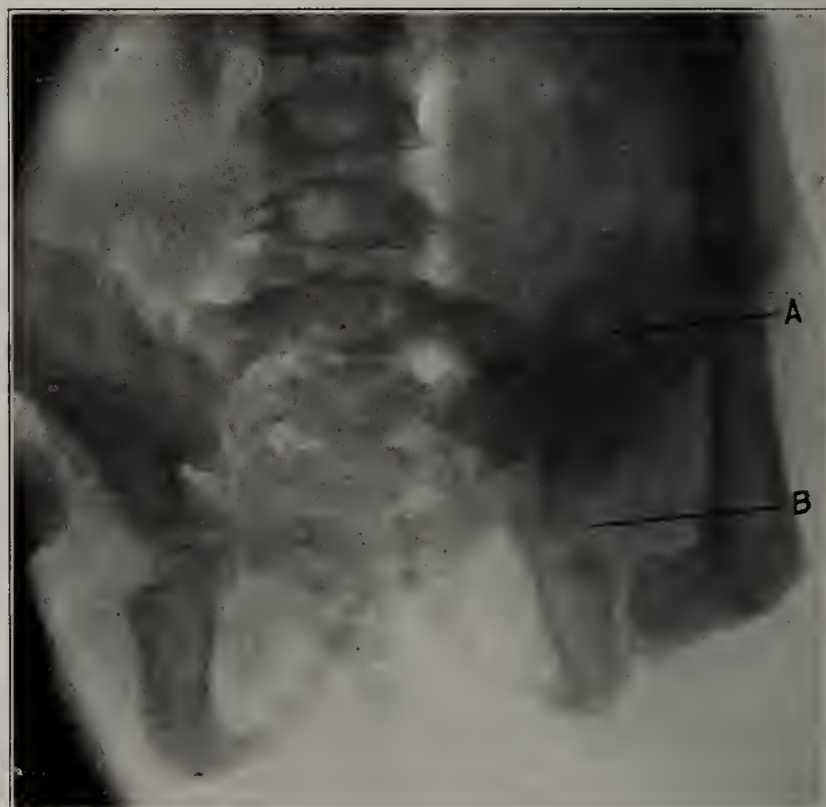


Fig. 9 (M. L.).—At left, the femoral head is seen in its natural dislocated position. At right, the femoral head is seen below the true acetabulum, and the shaft of the femur, the knee and the leg lie on the abdomen and chest. The femoral head is in process of reduction; it has moved down from A, the false socket, and is ready to slide into the true socket B through the notch when abducted and lifted upward and forward with the fingers of the "pelvis hand." This reduction was done under the roentgen-ray tube. The various positions were noted.

short, and strong-muscled. All in all, this was a case absolutely out of the question for treatment. When this patient was 3 years of age, reduction should have been easy.

1. Since the development of 9,000 roentgenograms there has been no case reported with absence of an acetabulum.



2. The anatomic condition of the parts making up the joint. When the bone and cartilage of the femoral head and the socket approach the normal and there is no twist to the femur, the result should be good. I have been impressed, however, with good results in some cases in which the anatomy predicted the contrary, and I attribute this outcome to a correct under-

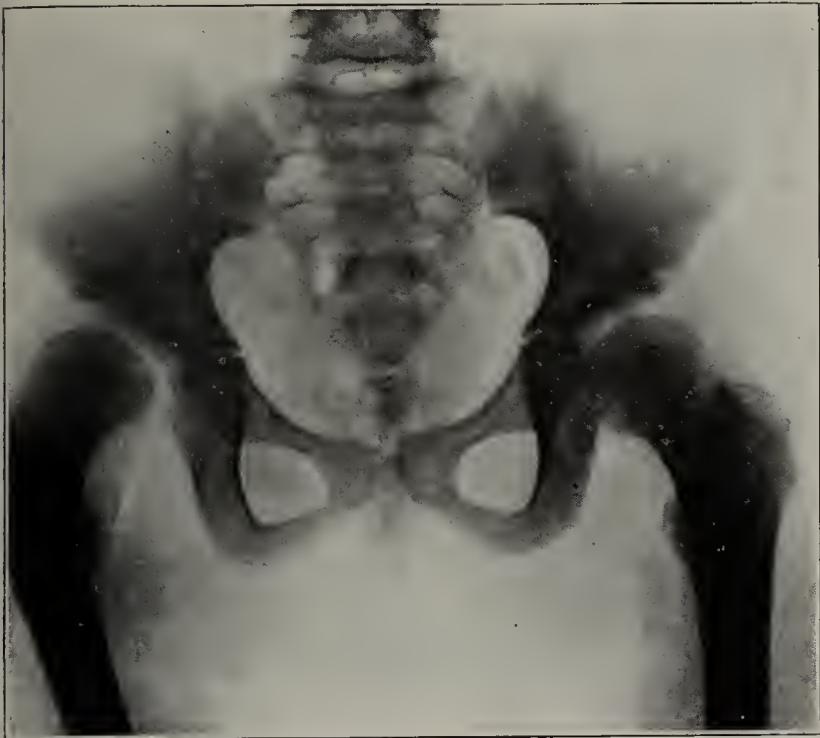


Fig. 10 (M. L.).—The pelvis four years after reduction of hips. The false sockets are barely distinguishable. There is considerable cloudiness about the heads and necks. Function practically normal.

standing of the anatomic condition and proper manipulation.

3. The choice of operation or method of effecting reduction. In this connection the report of the commission regarding standardization will be most welcome.

4. The age of the child at the time reduction is effected. We are learning, however, that the height of the femoral head above the acetabulum and its position, above, back or anterior to the socket is the true guide to the most favorable time for reduction. Ridlon's rule is the safest to follow: "All patients under 2 years of age and with shortening of less than 1 inch, and all patients over 5 years of age with shortening of over 2 inches should be excluded." If this rule is followed, i. e., waiting in the early cases for sufficient shortening, and discarding the older patients with too much shortening or referring them for the open method, our percentage of good results will be increased. In the cases of patients over 5 years of age with shortening over 2 inches (5 cm.), instead of discarding the case immediately my habit has been to attempt reduction by the closed method, as indicated in my discussion of the treatment.

5. Dexterity on the part of the surgeon in the use of either the closed or the open method.

6. The position in which the limb is placed after reduction.

7. Treatment during fixation and walking during the time the cast is worn.

8. Treatment after the cast is removed.

#### TENTATIVE RESULTS IN PERSONAL CASES

When I heard the commission's report in Boston in June, I began an investigation of my own cases. Those patients treated in my clinic at St. Luke's Hospital

whose present addresses could be obtained from the index card are now coming in for roentgen-ray examination and study. The cases I treated in ten years' service at the Cook County Hospital are not included. What I offer, then, is only a preliminary report.

In all, there were forty-four cases and fifty-six hips. Twenty of these cases, or twenty-six hips—the condition being bilateral in six cases—were those of patients 6 years of age or older<sup>2</sup> (Table 2). In this series, eighteen operations were done. Reduction was effected in five cases, in one of which the dislocation was bilateral. One hip was redislocated because of the development of trophic changes. Eleven hips (seven

TABLE 2.—RESULTS IN PATIENTS OF 6 YEARS OR OLDER

Patients 6 years of age or older.....	20
Dislocation bilateral .....	6
Total number of dislocated hips.....	26
Operations attempting reduction.....	18
5 hips (1 bilateral) reduced; one was redislocated because of trophic changes in the skin	
11 hips (7 patients) not treated; outlook too poor	
1 hip out; unsuccessful trial at reduction; open method not tried as muscles were too tense and the outlook was poor	
1 hip marginal	
1 hip questionable	
7 case records not found	

TABLE 3.—RESULTS IN YOUNGER PATIENTS

Patients under 6 years of age.....	24
Dislocation bilateral .....	6
Total number of dislocated hips.....	30
Operations attempting reduction.....	40
15 hips reduced; anatomic results fair to good; function good; parents pleased	
3 hips out; patients did not return after removal of cast; another trial at reduction should be made	
2 hips out; redislocations; waiting for more shortening before another trial at reduction is made	
2 hips marginal; one has function fair to good	
2 hips questionable	
6 case records not found	

cases) were not treated because the prognosis was too unfavorable. One hip remained out, as attempts at manual reduction failed and the open method was not tried because the muscles were too tense. One hip is marginal. In another case the result is questionable.



Fig. 11 (M. R.).—Pelvis of girl, aged 14, showing high femoral heads in false acetabula. The true sockets are not obliterated. The patient complains of pain and of tiring quickly. She walks with effort and shows marked lordosis and a shortened trunk.

The results in seven cases are not yet known. Only the filing card was found. In none of these cases was the machine or reducing table used.

There were twenty-four cases of patients under 6 years of age (Table 3). In six of these the dislocation was bilateral. Therefore, these cases included thirty

2. This age limit is the age arbitrarily set by the Commission on Congenital Dislocation of the Hip of American Orthopedic Association in its report of June, 1921, and is used here to conform with its method.



hips. Forty operations were performed. Fifteen hips were reduced with a fair to good anatomic result and good function. The parents were pleased. Three hips remained unreduced and the patients did not return after release from the cast. In two cases the dislocation recurred, and at the present time I am awaiting further shortening before having another attempt at reduction. Two hips are marginal. One of these patients has a fairly good function. In two cases the result is questionable. The results in six cases are not yet known because only the index card was found. In one case of bilateral dislocation the anatomic results are perfect and function is good, but the patient limps slightly when fatigued. Possibly we should not regard as failures the five cases in which the hip is still out, the two cases in which it is marginal, and the two cases in which the results are questionable because, as the patients are still under 6 years of age, the prospect of a successful result in another attempt at reduction is at least fair.

#### CONCLUSION

It is urged that all those who have had experience in the treatment of congenital dislocation of the hip make a detailed report, thus aiding in establishing standards of management which cannot fail to improve our results.

30 North Michigan Avenue.

## TUBERCULOSIS OF THE SPINAL CORD WITH PECULIAR CHANGES

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**CASE 1.**—*Tuberculous spinal meningitis with a peculiar clinical course:* In the beginning of February, 1921, a woman, aged 25, became ill with coryza, cough and fever, and then headache and pains in the back, but no vomiting. A little later, according to Dr. Hatlehol, the neck became stiff, it became more and more difficult to turn in the bed, and the legs, especially the left, became paretic; the abdominal reflexes below the umbilicus disappeared, and there was some hyperesthesia in the lower extremities. There were no symptoms pointing to the cranial nerves; the pupils were equal and reacted properly. Retention of urine developed, the urine contained blood and casts, and the patient entered the hospital under the diagnosis of nephritis. Lumbar puncture, February 24, gave 1,100 cells per cubic millimeter, mostly lymphocytes; cultures of the fluid remained sterile, and no tubercle bacilli were found. The Wassermann reaction of the blood was negative. The fever continued, the lower extremities became completely paralyzed, and irregular contractions appeared in the right arm and right half of the face. The patient died, March 3, in coma.

The clinical picture suggested poliomyelitis, but the meningitic phenomena were more marked than usual in this disease, and the course pointed rather to a tuberculous process.

At necropsy there were found caseous tuberculous lymph nodes in the hilum of one lung; a small cavity in the apex of the left lung surrounded with some small tubercles; scattered miliary tubercles in the spleen, a single caseous focus in one kidney; tuberculous meningitis at the base of the brain, and a tuberculous spinal meningitis of unusual distribution. The dura over the entire cord was adherent to the leptomeninges by fibrinous exudate, and the leptomeninges were infiltrated with a fibrinopurulent exudate throughout so that the cord and its membrane filled the canal completely. On the cut surfaces in various parts of the cord there was no evident separation between the meninges and the cord substance, which was swollen, soft and edematous,

the substance flowing out over the cut surface. The distinction between gray and white matter was indefinite, the horns being barely recognizable. From the membranes, injected streaks passed into the substance of the cord. In the cauda equina there was much exudate and there were also tubercles.

Under the microscope there was found a severe inflammation in the membranes, the exudate surrounding vessels and nerves; the vessels, especially the arteries, showed in places proliferation in the wall, in places focal necrosis but no

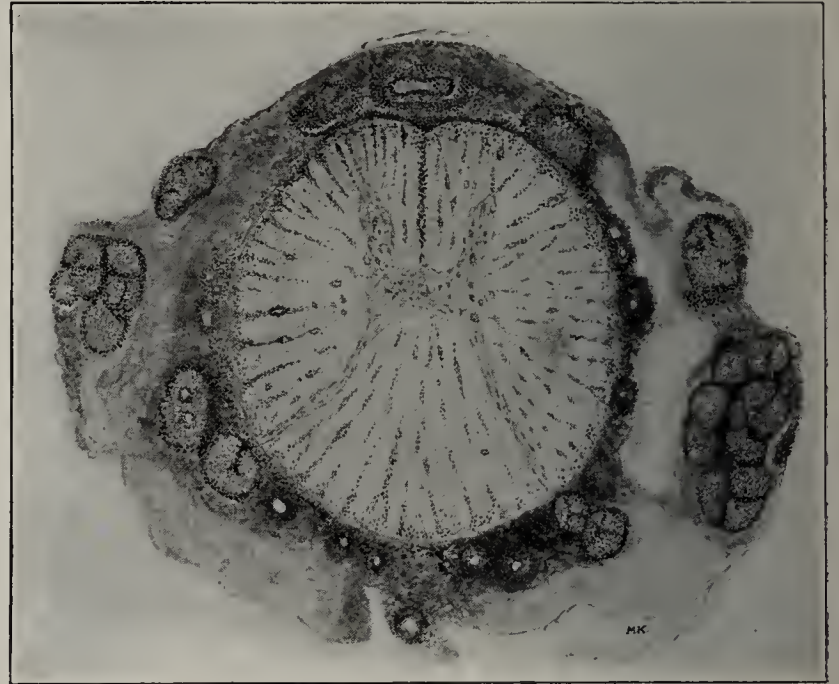


Fig. 1.—Section at level of eighth dorsal segment.

definite tubercles; all nerve roots were infiltrated with cells, and the nerve fibers, particularly in the dorsal and lumbar regions, were degenerated; at the periphery the cord was markedly edematous, notably in the dorsal part, and from the membranes extended a peculiarly distributed inflammatory process in the form of stripes along the vessels everywhere (Fig. 1). This inflammatory process was most marked in the dorsal region, which is represented in Figure 1, and in which the gray substance was involved much more than in the cervical region, the picture reminding one of acute poliomyelitis with degeneration of the ganglion cells. In the lumbar region the white substance was especially involved (Fig. 2). In the spinal ganglions was a similar inflammatory process with caseous nodes and tubercles and some degeneration of the ganglion cells. It should be noted that everywhere in the exudate in the membrane was an extraordinarily large number of tubercles.

We have here a diffuse meningomyelitis involving the whole cord. It is of special interest that the process spread from the membranes along the vessels into the cord—another example of the perivascular extension into the cord of an infectious process similar to that described in acute poliomyelitis<sup>1</sup> and in the case of the brain in lethargic encephalitis.<sup>2</sup> It seems that tuberculous spinal meningitis rarely takes the course it did in this case. There may be doubt as to whether the symptoms depended on the changes in the cord itself or in the nerve roots and spinal ganglions; but it seems reasonable to assume that the changes in the membrane and the roots therein were the most important at the same time as the changes in the cord itself, and, with the marked edema, must have resulted in great functional disturbances. The edema may have been caused partly as the result of the inflammatory changes in the veins and resulting stasis, but it may also have

1. Harbitz and Scheel: *Pathologisch-Anatomische Untersuchungen über akute Poliomyelitis*, 1907.

2. Harbitz, Francis: *Norsk. Mag. f. Lægevidensk.* 82:21 (Jan.) 1921.



been produced by toxic action from the great number of tubercles in the membranes.

**CASE 2.—Solitary tubercle in the spinal cord:** A man, aged 23, who died after being in the hospital for two months (Dr. M. Krohn), had had an illness which began with weakness and a tired feeling, followed by paresis in both lower extremities, particularly the left, which increased steadily at the same time as disturbances of sensibility appeared together with fever. The roentgen ray revealed numerous closely packed shadows in the lungs as well as in the region of the hilum glands, but only shortly before death did active pulmonary symptoms develop together with pyuria.

The postmortem examination disclosed an extensive tuberculosis of the thoracic lymph nodes from which there had developed a miliary tuberculosis of the lungs, in which the tubercles were largest and most numerous in the upper lobes, with miliary tubercles also in the liver, spleen, kidneys and meninges. There were found also caseous nodules in the suprarenals, the kidneys and the prostate as well as two tuberculous ulcers in the urinary bladder. In the brain there were found, in addition to scattered tubercles in the meninges, solitary tubercles in the cerebellum, the pons and the hemispheres.

There were no macroscopic changes in the spinal meninges. In the fifth and sixth thoracic segments the cord was soft, and in the gray substance was a solitary tubercle (Fig. 3) about 2 c.c. (three-fourths inch) long and in the middle about 1 c.c. (three-eighths inch) in diameter, surrounded by soft, hemorrhagic cord substance. Microscopically this tubercle showed a caseous, degenerated structure surrounded by a tuberculous granulation tissue and a hyperemic softened border zone that separated it from the more normal cord substance, of which there was very little, in some places hardly any, the continuity of the cord being practically interrupted at the site of the tubercle. There was some round-cell infiltration with numerous tubercles in the meninges, but this process, which was acute, did not extend into the cord along the vessels as in the first case. Below the solitary tubercle the substance was edematous, especially in the eleventh and twelfth dorsal segments; there was also definite

a form of toxic action from the tuberculous infection which we know may cause degeneration in internal organs such as the kidney and the central nervous system.<sup>3</sup> The case is rather rare. Doerr,<sup>4</sup> in 1911, compiled seventy-four cases of solitary tubercle in the cord, and since then only a few have been added. Most of the cases occurred in children or young persons with extensive and widespread tuberculosis in other organs, and the infection of the cord develops



Fig. 3.—Solitary tubercle in dorsal region.

hematogenously in the same way as solitary tubercles of the brain. Any part of the cord may become involved, there being no tendency to localization in any particular part. Such tubercles grow slowly, and the symptoms are those characteristic of tumors of the cord. In one case, recovery followed operative removal of the tubercle.

## CHRONIC SCLEROSING OSTEOMYELITIS

REPORT OF A CASE \*

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In a recent paper, G. Fosdick Jones<sup>1</sup> calls attention to the apparent rarity of this disease, as described by Garré, gives a complete bibliography, and enters into the description of the diagnosis so well that reiteration seems superfluous. All that is called for, therefore, is the reporting of cases as they may arise, and the directing of attention to certain salient points. In the case here reported, the existence of a previous suppurative bone disease, the history of long continued tonsillar infection, the many acute infections, and the amount of sclerosis warrant a full report.

### REPORT OF CASE

**History.**—J. D., a schoolboy, aged 13, came under observation in the orthopedic clinic of the Samaritan Hospital, April 29, 1921, with a complaint of pain and enlargement of the left tibia, beginning two years before, and with a febrile attack, but no history of trauma. Pain was inconstant both as to character and to time, but seemed to be worse at night.

3. Bassoe, Peter: Combined Degeneration with Visceral Tuberculosis, *Arch. Int. Med.* **21**: 519 (April) 1918.

4. Doerr: *Arch. f. Psychiat.* **49**: 406, 1912.

\* From the Orthopedic Clinic of the Samaritan Hospital.

1. Jones, G. F.: Sclerosing Nonsuppurative Osteomyelitis as Described by Garré, *J. A. M. A.* **77**: 986 (Sept. 24) 1921.



Fig. 2.—Section through lumbar region.

atrophy of the fibers in the lateral motor tracts. Above the tubercle there was degeneration in Goll's columns and in the periphery of the lateral column posteriorly, but less edema than below.

This is a typical instance of a solitary or conglomerate tubercle in the cord, with almost complete transverse separation of the cord with typical ascending and descending degenerations. Besides the tubercle there was a not very pronounced meningitis, a marked edema of the cord below the tubercle, due perhaps to



The enlargement had been progressive, and there had been a steady decline of general health. At no time had there been any discoloration or pus formation, or (so far as could be determined) any induration of the soft tissues. The patient's father and mother were living and well; he had four brothers and two sisters who appeared to be healthy. No history of tuberculosis was obtainable. The patient had had measles, pertussis, varicella, diphtheria, scarlet fever, influenza and many attacks of sore throat. Four years before he had an abscess in the right inguinal region. This was operated on, with a diagnosis of hip disease. The operative wound healed well, and since that time there had been no further trouble with the hip. No history of any traumatic conditions could be obtained.

*Examination.*—The boy was pale, anemic and undersized, and weighed 65 pounds (29.5 kg.). The head and eyes were negative. There was right submaxillary, supraclavicular and bilateral inguinal glandular enlargement. The epitrochlear gland was not enlarged. There was a scar about 4 inches (10 cm.) long in the right inguinal region, above and parallel to Poupart's ligament. There was no thickening or tenderness in this region. The spine and all the joints were negative. All of the extremities, except the left lower, appeared to be normal. The left leg showed a fusiform swelling from the tubercle of the tibia; to the middle of the shaft of that bone the enlargement was regular in outline, and no nodosities could be seen or palpated. Palpation disclosed no sense of thickening in the soft tissues over or about the mass. The mass was of bony consistency and was continuous with the shaft of the bone on all sides, giving the impression of uniform bony enlargement. Tenderness was absent. There was no discoloration. The knee and ankle joint moved freely. There was a slight limp, but not enough to interfere with locomotion. The pediatrician reported a mitral systolic murmur, accentuation of the second sound in the tricuspid area, and no demonstrable lesion in the lungs. The nose and throat service reported that the nose was open and free, with thick, pasty mucus on the turbinates. The tonsils were of medium size and cryptic, and probably were infected. The teeth were in fair condition except for three slightly carious ones. The urine, blood Wassermann test and von Pirquet test were negative. The blood presented the typical findings of a secondary anemia. The roentgenologist reported as follows: "Some evidence of a healed bone condition, probably an osteomyelitis of the right ilium. There is no pathologic finding in the right hip joint. This finding would probably explain the abscess of four years before. The left tibia shows a uniform, fusiform enlargement, from the middle of the shaft to the upper epiphysis, with a complete obliteration of the marrow cavity in this area, except for a small area about 1½ inches (4 cm.) below the tibial tubercle. There is no periosteal thickening. The obliteration of the marrow cavity is due to the cortex, which is enormously thickened, encroaching on it. The case is one of osteomyelitis probably of syphilitic origin."

*Operation and Result.*—With all these reports and our own findings in mind, we decided that there was an area of infec-

tion in the bone that had been walled off and showed in the rarefied area that appeared where the marrow cavity should be; that the infection was of extremely low grade and probably of tonsillar origin, and that the wisest course would be to trephine the bone over the rarefaction and clean out whatever material might be found, having the nose and throat surgeon perform a tonsillectomy at the same time. Accordingly, the patient was admitted to the hospital, and on May 13, under ether anesthesia, a long anterior incision was made. The periosteum was but slightly thickened; it stripped easily. Measurement was made from the tibial tubercle to a point overlying the cavity, as shown by roentgen ray. The Albee motor with a drill attached was used to open the bone. The drill worked with difficulty; owing to the extreme eburnation encountered, it was necessary to drill more than one-half inch (12.7 mm.) before the cavity was opened. The drill brought up what appeared to be normal marrow tissue. A special drill was then taken and the opening enlarged, and

a curet was used to clear the cavity. Nothing was obtained except the marrow-like material; this appeared somewhat drier than normal marrow. The cavity was small, about three-fourths inch (19 mm.) long and one-half inch (12.7 mm.) deep, being entirely surrounded by the dense bone. All lips and overhanging bone were cut away by the drill. The question then arose as to the proper treatment of the cavity. With the work of G. M. Coates on the blood-clot dressing of the mastoid in mind, and believing that we were dealing with noninfected bone, it was decided to close tightly and without drainage, thereby leaving the newly formed clot in place. Two layers of 0 chromic gut were used, a running suture being employed in the deep structures and an interrupted suture in the skin. Sterile dry dressings were applied, and the patient was returned to the ward and kept in the hospital until May 30. At the time of discharge, there was a skin infection in the incision, which soon healed. A roentgenogram in August disclosed obliteration of the bone cavity. The pain was relieved at once and the boy goes about with little if any limp.

The bony enlargement still persists and appears to be a permanent condition. His general health has consistently improved, the tonsillectomy, no doubt, having much to do with the improvement. About two weeks before we last saw him he developed a small, ulcerated area over the middle of the incision; this was purely superficial and has healed.

Before seeing Dr. Jones' paper, I thought that this was a case of low grade infection, causing osteogenesis instead of destruction, the source of the infection being tonsillar or else a legacy from one of his numerous acute infections. Since perusing his work, I have altered the diagnosis to that of Garré's sclerosing osteomyelitis, but still believe that, etiologically, focal or preceding infection plays the greatest rôle.

#### SUMMARY

This is a case of sclerosing osteomyelitis, with a nontraumatic history, but with a history of many acute



Chronic sclerosing osteomyelitis of tibia.



infections and one site of focal infection. The marrow cavity was completely obliterated, except for a negligible area. Further, closure of the incision, without drainage, was productive of a happy result. My only regret is that I did not have the material from the cavity examined microscopically and cultures taken.

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## A CASE OF TABETIC CHARCOT'S SPINE

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A white man, aged 54, married, was first admitted to the hospital, complaining of weakness and vomiting, in June, 1920. He had no children, and there had been no miscarriages.

He had been a heavy drinker, and he admitted gonorrhea occurring twenty years before, but denied chancre. He came from a healthy family.

He had had malaria, in 1903, while living in Kansas City. For twelve years he had suffered from "shooting pains" in the legs, night sweats and shortness of breath. There had never been any swelling in the limbs. He had had heartburn and difficulty in walking. He had suffered from spells of vomiting for four years, and complained of diarrhea and hemorrhoids almost all his life. He had headaches on the right side, had been unconscious and cyanotic twice, and saw double for two weeks, two months previously. He suffered from vertigo; numbness in the outer side of the feet and hands, and polyuria, nycturia, pyuria, dysuria and incontinence of both urine and feces.

Seven years before, he began having loss of balance, accompanied by "shooting pains" in the legs, when going up stairs. Six months later, he became bloated and had severe abdominal pains at times, lasting about fifteen minutes. During these attacks he felt as if his skin were stretched too tight over the abdomen. A year later, he began to have attacks of vomiting, but he was completely relieved by morphin. He soon became unable to walk at night and could not tell where his feet were unless he watched them. There was some pain in the sacral region. His vision grew continually worse.

The patient could walk with crutches. He had a slight kyphosis in the lower part of the spine. The right eyelid drooped slightly, but the two eyes reacted equally to light and accommodation; the glands were slightly enlarged, the heart and lungs were negative; the pulse was 80; blood pressure, 130 systolic, 80 diastolic. There was no abdominal tenderness or enlargement of the spleen, and no pain over the spine. A very decided Romberg sign was noted. There was diminished pain sense and sense of position over the legs and arms, especially on the right side, and a general marked loss of reflexes, with entire absence of the knee-jerk.

The Wassermann reaction was four plus, both on the blood and the cerebrospinal fluid.

Lumbar puncture gave blood-tinged fluid, under no pressure. There were 42 lymphocytes and 7 endothelial cells. Albumin was present.

The blood count was: hemoglobin, 80 per cent.; red cells, 4,550,000; white cells, 12,000, of which 63 per cent. were polymorphonuclears and 33 per cent. lymphocytes. The red cells showed the changes of secondary anemia. The blood was negative for malarial parasites.

Cystoscopic examination revealed trabeculation of the bladder wall, with decided loss of power.

Roentgen-ray examination of the spine at this time revealed a mild osteoarthritis of the lumbar spine.

The patient was treated with arsphenamin, and on his discharge, mercury and potassium iodid were prescribed.

On his return to the hospital, in March, 1921, the following report was made:

The symptoms have remained the same except that the gastric crises have become more regular. In the last two weeks the area of anesthesia over the legs has become suddenly extended. The left eye does not react to light, and the right eye reacts only slightly.

The fourth lumbar spine has become very prominent. This was first noticed in November, 1920. There is a slight dorsal curve to the right. There is a tenderness over the lumbar muscles. There has been a slight increase in the tabetic symptoms throughout. He is able to get about on crutches with difficulty.

Roentgen-ray examination at this time revealed a very large dense, bony deposit, surrounding the second, third, fourth and fifth lumbar vertebrae and sacrum.

The patient was fitted with a back brace and, after the usual course of arsphenamin, was discharged. The Wassermann reaction on discharge was: alcoholic, two plus; cholesterinized antigen, four plus.

### COMMENT

Charcot's spine is a comparatively rare condition. Charcot did not have a case in his series. Rotter,<sup>1</sup> in 1817, described 112 cases of Charcot's joints, none in the spine.

As late as the twentieth century, it was possible to collect only fifteen cases from the literature, and only one of these occurred in America. The analysis of these cases, collected first by Jean Abadie, and summarized by Cornell,<sup>2</sup> in 1902, gave the following statistics:

Syphilis was present in six cases, absent in six, probable in three. Sex: eleven males; four females. Age: eleven between 50 and 60; the youngest 35; the oldest 66. Ataxia: in eight cases, extreme; in six, moderate; in one, slight. Other lesions occurred in 60 per cent.

Tabetic joints may occur at any stage in the development of the disease, although they seem to be more common in the preataxic stage. In syringomyelia, Charcot's joints develop at a late stage.



Fig. 1.—Roentgenogram showing bony deposit.

1. Rotter: J. Die Arthropathien bei Tabikern, Arch. f. klin. Chir. 36, 1887.

2. Cornell, W. B.: A Case of Tabetic Vertebral Osteoarthritis, with Radiograph, Bull. Johns Hopkins Hosp. 13: 242-243, 1902.



It is rather characteristic that they develop rapidly, and it is interesting to note that in the present case the roentgenograms taken only nine months previously revealed nothing of the present condition, unless one concedes a direct progression of the osteoarthritic changes.

### A SIMPLE APPARATUS FOR ADMINISTERING OXYGEN\*

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In the administration of oxygen it is desirable to employ a method that (1) offers an effective supply of oxygen; (2) causes minimal discomfort to the patient, and (3) must not involve a wasteful expenditure of oxygen. In general, past methods<sup>1</sup> have not been satisfactory for prolonged oxygen therapy. Probably the most commonly used method, the tube and funnel method, is the most ineffective and wasteful. Meltzer<sup>2</sup> has estimated that it adds less than 2 per cent. oxygen to the inspired air. The effective methods which involve the use of a face mask<sup>3</sup> usually cause such discomfort and objection on the part of the patients who are urgently ill as to render them undesirable for general use. In our experience the pneumonia patients, particularly, complained of the feeling of suffocation which they said the mask produced. An oxygen chamber admittedly possesses maximum effectiveness and causes no discomfort and, if the danger of combustion in the oxygen-rich atmosphere is guarded

The apparatus here presented is simple in construction and makes use of principles by no means new. It was developed and used in the investigation referred to above, and has been recently modified so as to make it generally applicable.

As shown in Figure 1, the patient breathes room air through his nose and oxygen through his mouth. The mouth connection is the soft rubber mouthpiece used in the Benedict respiration apparatus, with the exception that the margins are cut down somewhat to minimize any pressure between the lips and teeth. The opening in the mouthpiece is large enough to allow respiration to take place through it without resistance.

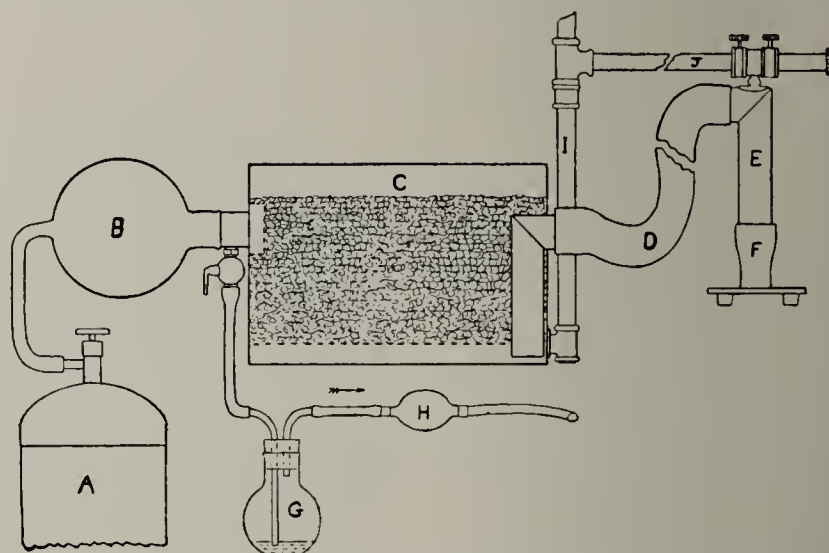


Fig. 2.—Diagram of apparatus: A, oxygen tank; B, collecting and rebreathing bag; C, soda-lime canister; D, rubber tube; E, metal connection; F, rubber mouthpiece; G, barium hydrate bottle; H, rubber bulb; I, J, E, adjustable metal bars.

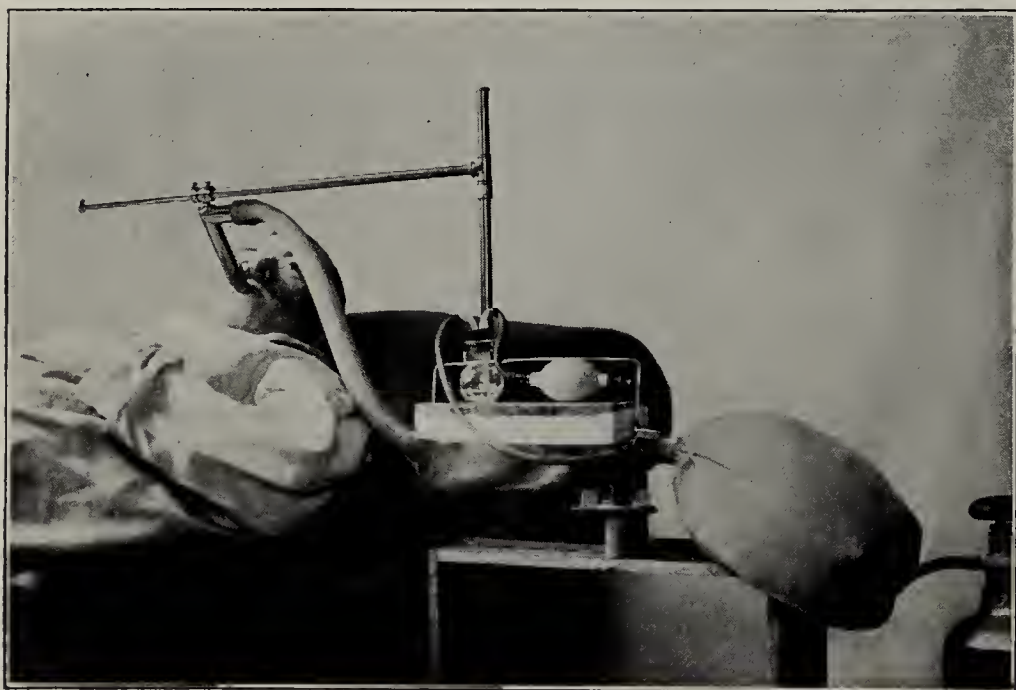


Fig. 1.—The patient breathes oxygen through his mouth and room air through his nose. The inhaled oxygen is rebreathed, and the exhaled carbon dioxide is absorbed in the soda-lime canister. An extra mouth-piece is shown on the stand.

against, appears to be the ideal way to provide oxygen therapy. This method, unfortunately, is only within the reach of institutions with abundant resources, and is obviously impossible for patients treated in the home.

\* From the Medical Service of the Massachusetts General Hospital. The expense of this work was in part defrayed by a grant from the Proctor Fund of Harvard University for the study of chronic diseases.

1. Barach, A. L., and Woodwell, M. N.: Studies in Oxygen Therapy, I, In Cardiac Insufficiency and Related Conditions; II, In Pneumonia and Its Complications; III, In a Type of Shallow Breathing Occurring in Lethargic Encephalitis, *Arch. Int. Med.* **28**: 367, 395, 421 (Oct.) 1921.

2. Meltzer, S. J.: Therapeutic Value of Oral Rhythmic Insufflation of Oxygen, *J. A. M. A.* **69**: 1150 (Oct. 6) 1917.

3. Haldane, J. S.: Therapeutic Administration of Oxygen, *Brit. Med. J.* **1**: 181 (Feb. 10) 1917.

The margins support it between lips and teeth without leaking. The patient rebreathes oxygen through his mouth, the carbon dioxide being absorbed by soda-lime, and admits air through the nose, diluting the inhaled oxygen. The dyspneic patient usually breathes through both nose and mouth so that respiration in this manner takes place more naturally than in the normal person.

The construction of the rebreathing outfit may be seen from Figure 2. Oxygen is admitted from the tank, A, into the collecting or rebreathing bag, B, passes through the soda-lime canister, C, through the rubber tube, D, the metal connection, E, and the mouthpiece, F, into the patient. The exhaled air in the patient's mouth passes in the reverse direction. The small bottle, G, contains barium hydrate and is connected by tubing and stopcock to the canister to serve as a test of the soda-lime.

Pressure on the bulb, H, draws air through the barium hydrate. The solution is left clear if the soda-lime is functioning perfectly, but a white precipitate is formed (barium carbonate) if any carbon dioxide has passed the soda-lime unabsorbed. Three removable adjustable metal bars, I, J, E, regulate the position of the mouthpiece. The junction of the lid with the body of the canister is not air tight, so that a strip of adhesive tape must be fastened around it. This applies to the rectangular shaped canister (Fig. 1), which was designed because of its portability. A cylindric canister needs only a rubber band around it to make it air tight. Its disadvantage is that it occupies more



room in a suitcase or handbag and is thus less easily transported.

In beginning the administration, the position of the mouthpiece is adjusted so that no pressure is brought to bear on the patient's mouth, and the margins are inserted between the lips and teeth. Oxygen is run into the rebreathing bag and the patient either naturally or by instruction begins to breathe through mouth and nose. The proportion of respiration taking place through the mouth, i. e., the inhaled oxygen, can be roughly estimated by the excursion of the rebreathing bag. One may hold the nose closed for a few seconds, forcing all respiration through the mouth, and compare the excursion of the bag at that time with the excursion when the nose is free. The percentage of oxygen inhaled when the nose is left open has a range of between 40 and 70 per cent. in individual cases. Exceptionally a patient may for a while go above or below this range, but this is usually easily remedied by instruction.

There are two precautions to be observed. One is to test the soda-lime frequently to see whether it is absorbing carbon dioxide perfectly. If a white precipitate forms after drawing the expired air through the barium hydrate, the soda-lime should be discarded and the can refilled. The length of time that the soda-lime remains effective varies; it may last fifteen hours or even longer. Pressure on the rubber bulb every fifteen minutes or so insures the early detection of impaired soda-lime. The test is so easily performed that there is no excuse for the rebreathing of carbon dioxide through imperfect soda-lime. There is a little rebreathing of carbon dioxide through the dead space of the rubber connecting tube, but this is slight, and since the nose is open, allowing free diffusion of carbon dioxide, negligible. The second precaution should be against giving pure oxygen, as pure oxygen continuously inhaled for several days is probably injurious. The nose should therefore always be left open and the patient encouraged to breathe through both mouth and nose. This precaution should be especially heeded when oxygen is to be given for several days or more.

The method has been used for one year at the Massachusetts General Hospital in the treatment of pneumonia and a variety of other conditions. In our experience the results fully justified its use. It yielded an effective concentration of oxygen to the inspired air, although the total consumption was only moderate, owing to the rebreathing. The saving of oxygen due to the rebreathing is to a certain extent offset by the expense of the soda-lime. The various parts of the apparatus, exclusive of the oxygen tank, could be collected in a handbag and readily transported. It is believed that the method is satisfactory for consistent oxygen therapy.<sup>4</sup>

33 East Sixty-Eighth Street.

4. The apparatus is made by Mr. Warren E. Collins, 584 Huntington Avenue, Boston.

## SHELL FRACTURE OF THE SPINE AND CHANGES IN KIDNEY AND BLADDER FUNCTION

FURTHER OBSERVATIONS

ROBERT E. CUMMING, M.D.

DETROIT

In 1919, Plaggemeyer<sup>1</sup> reported certain observations regarding a series of twenty cases of shell fracture of the spine, from the sections of neurosurgery and urology of Walter Reed General Hospital. Dr. Plaggemeyer's studies covered the months of February, March, April and May, 1919. Further complete surveys of remaining hospital cases were made in February, May and July, 1920, and in March, 1921. Nine additional cases have been added.

An end-result has apparently been obtained in these cases. The men are being discharged from the hospital, and will no longer be subject to study. It is a significant fact that, of the surviving patients, only one will require permanent institutional care; and that this is not necessary even in his case was proved by his driving an automobile, unassisted, more than 3,000 miles while at home on furlough, and moreover, he has become an expert wireless operator.

As parallel case types we have studied two series of cases, one consisting of five tabetics under 35, and the other of twelve patients picked at random from the wards, because of certain cystoscopic findings which seemed to relate their condition to neurologic syndromes.

We believe that the ultimately good functional results—that term being used to refer to the ability to live in good general health—in the cases of shell fracture are in part due to the fact that the injury occurred while the men were young.

The treatment has been a process of watchful waiting. We have refrained from indiscriminate catheterization, and depended entirely on the administration of accepted urinary antiseptics, at intervals, as prophylaxis against infection. However, when instrumentation has been definitely indicated, as in one case of old pyonephrosis, with persistent symptoms dating back to early infection with catheters, cystoscopy and comparative function tests were performed, and no harm resulted. The patient was afterward successfully carried through nephrectomy, which was followed by definite improvement in health and kidney function.

No development of stone or renal infection, and simply a slight persistence, in a few cases, of a low-grade cystitis, give us encouraging proof that the original idea of avoiding instrumentation was the correct one. No patient has developed a late uremia, although many have undergone repeated operations for septic bone, orthopedic or peripheral nerve conditions. There has been no evidence of hydronephrosis, or decrease in kidney function, which maintained itself in normal limits, throughout the two years and more covered by these observations. The blood chemical findings have been repeatedly within the range of normal, with no single pathologic retention.

It should be recalled that we are dealing with a condition resultant from a traumatic myelitis of more or less complete transverse extension. The sudden occur-

1. Plaggemeyer, H. W.: Shell Fractures of the Spine, with Observations on Kidney and Bladder Function, J. A. M. A. 73: 1599-1604 (Nov. 22) 1919; Observations on Certain Relations Between Shell Fracture of the Spine and Changes in Kidney and Bladder Function, J. Urol. 3: 367-406 (Oct.) 1919.

**Bubonic Plague at Lisbon.**—The *Medicina Contemporanea* gives the report of Dr. A. de Faria on the small epidemic of plague at Lisbon in 1920. The sixty cases were all mild except two, and in two cases the disease was of such an abortive type that it was scarcely recognizable. The buboes were in the femoral region in 50 per cent. of the cases; in the inguinal in 15.5 per cent.; in the neck in 10.3 per cent. but in only two instances were any found in the axilla. The first symptom in nearly all the cases was a severe chill, soon accompanied by extreme malaise and fever. Only a few vomited. In a few cases the first symptom was pain in a gland, fever developing as the pain became more intense.



rence of the injury, and the immediate onset of the symptoms, certainly admit the possibility of complete subsidence and clinical recovery. Patients with injuries of such mild extent were not sent to this hospital, which has served as a clearing house for chronic conditions, a haven of last resort for the seriously injured soldier.

Our cases in which there was relatively complete recovery can be explained by the fact that early severe pressure was recognized, and removed by débridement or other early treatment, and not followed by infection or inflammatory destruction. Cases of actual, permanent and complete recovery should admit no possibility of nerve injury other than temporary pressure phenomena.

The series comprises injuries in extent of location, from the sixth dorsal to the cauda equina region, and we must recognize changes in bladder and kidney function as due to interruption of central nervous system control and not to disturbed segmental distribution alone. We must here call to mind the fact that sphincteric control is of reflex origin, and the loss of control resultant from a break in the reflex arc, so that if the motor root regenerates, the arc is not reestablished unless the sensory also recovers. Recovery of sphincteric control has been slow to appear, whether the lesion was distant to the segmental control area or involved the segmental area itself.

We must recognize the theoretical possibility of regeneration of tissues, whether the lesion occurred near the cauda, in the nerve root or in the cord substance. Remembering peripheral nerve regeneration and the proved possibility of aiding it by approximation of severed nerve ends, is it not reasonable to suppose a possible recovery for primary nerve roots and cord tissue?

The nerve cell probably functions in nutrition and regeneration of nerve fibers or axons. The nerve cells of the anterior, or motor roots, are situated within the gray matter of the anterior horns of the cord. The axons are, then, entirely peripheral to the cord. The cells of the posterior nerves are, however, situated in the posterior root ganglion, which in turn is situated near the intervertebral foramen. The posterior root may therefore be of considerable length, especially in the lumbar and sacral regions, forming the cauda equina. If the cell controls regeneration and nutrition, then regeneration following a lesion of the posterior root between ganglion and cord would be expected to proceed from the ganglion to the cord, while regeneration following a lesion of a peripheral nerve extends from the ganglion distally. As Tinel's sign, or distal tingling on percussion, is considered to be a function of regenerating sensory fibers, then this sign does not occur in lesions of the cauda equina, because of the protection of the vertebrae against stimulation of the regenerating portion of the nerve. After reaching the cord, the posterior root fibers become medullated cord

fibers, without neurilemma, in which regeneration does not appear to occur clinically; hence the lack of sensory improvement in cauda lesions.

The fact that there has been no recovery of primary sensory roots or of cord lesions is significant, and vouched for by the neurologic surgeons in attendance in this series of cases. Except for relief of pressure, as by laminectomy or removal of shell or bone fragment, no operative measures have been attempted, and those minor ones were performed at the first hospital halt along the line of evacuation.

#### INCONTINENCE

Following through the various phases of incontinence, which came after a period of catheterization in all except one case, our patients have been observed to develop automatic bladders which have served them well, and cause no anxiety as to the ability to return to normal pursuits of living.

There have been examples of paradoxical incontinence, which occur early, or at the cessation of catheter practice, and of true incontinence, the condition which would persist in some instances were it not for the automaticity brought about by the patient's own effort and habit, and which in some cases still occurs, when the habit of regular scheduled nocturnal micturition is not carried out. In such cases the incontinence is readily taken care of by the nightly use of a urinal. Absolute incontinence occurs only very early or in the terminal state, according to our observations, owing, perhaps, to the relative youth of the patients.

After the establishment of incontinence, catheterization has never been necessary for the relief of bladder filling, and in this fact lies the great value of abstention from early catheterization, and the potential fact that infection, proved more deadly than obstruction, has been avoided.

When automatic bladder action was established, and the general wasting of these very sick patients controlled, the urea nitrogen retention subsided, and there was a synchronous increase in kidney function. During the two year period of further study, this relation, normal blood findings, balanced by functional test results of normal range, remained constant. All infection, save a mild cystitis in a few cases, subsided early.

One factor in the permanent damage resulting, of profound interest to the patient himself, and admitting serious drawbacks to morale and the desire of achievement, is the sex function loss. The patient broods terribly because of this, reports feeble erections, or seminal emissions, as though they were gold mines, and never gives up hope of returning power; the unfortunate part is that after the shock injury subsides, and the patient is convalescent, his sex ideas return.

It is easy to understand how large an item of importance in the prognosis is this probable permanent loss

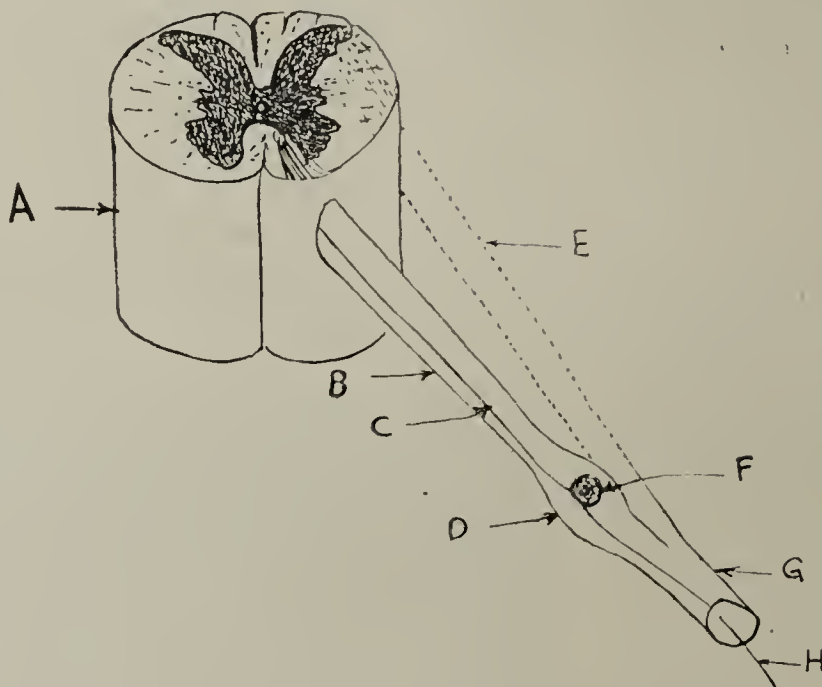


Fig. 1.—Anatomic details of posterior nerve roots: A, spinal cord (posterior view); B, posterior root; C, axon of sensory nerve; D, posterior root ganglion; E, anterior root (motor); F, ganglion cell (cell body and nucleus of sensory neuron); G, peripheral nerve; H, afferent nerve fiber (dendrite of ganglion cell).



f sex power. In tabetics and in prostatics we are dealing with another type, men who, while still hopeful, in some measure at least feel themselves guilty of over-indulgence, and therefore deserving of loss of power. They may have attained an age at which they admit they are not far from the time of physiologic loss.

The rectal sphincteric involvement has continued a course parallel to that of the bladder; the patients take daily enemas and use liquid petrolatum or mild laxatives. If a strong drug is used, the bowel becomes incontinent; sensation of bowel evacuation is as absent as that of micturition. By roentgen-ray studies, a distinct tendency to visceroptosis has been noted; but such an occurrence may be the result of periods of emaciation early in the course of the disease, and of neurotrophic significance, rather than a factor increasing spastic bowel paralysis.

We still maintain that there is no element of back pressure on the kidney and ureter that might preface nitrogen retention and uremia, and be evidenced by a lowered kidney function. The low average kidney excretion is due to a certain amount of permanent renal fibrosis. Cystograms made in several cases show no reflux of the opaque solution into the ureters or kidneys.

#### RETENTION

In regard to the matter of bladder retention, the factor that links up these spine fracture cases to the prostatic syndrome, we may say that we have carefully determined residual urine amounts in as many cases as possible, exerting the utmost care to avoid infection in catheterization, and combining the investigation with function tests. We have found in each instance a surprisingly constant residual urine, and in nearly all, an extremely low one. The average we report is relatively high, we admit, but is arrived at by considering, along with the majority of cases, two or three running 100 c.c. (27 fluidounces) or more over the entire time of investigation. In this minority we still have no evidence of back pressure, and are led to presume that the bladder is still in the stage of relative tone, corresponding to that stage in prostatism which is the forerunner of the "don't care" stage of atonicity. The back pressure has not yet begun to collect its toll. The question naturally arises as to whether we should not take the case with a large retention in hand, and attempt to increase the ability of the patient to bring about a condition approaching normal emptying (for the automatic ladder type). By means of mass reflex stimulation or by occasional catheterization, improvement should be expected. With this idea in mind we selected two cases for the use of sinusoidal electrical stimulation.

#### SENSORY AND MOTOR PHENOMENA

Many peculiar phenomena of sensory nature, sometimes resulting in motor disturbances, such as persistent painful crampings, have been observed in these cases. Some have been fairly constant, and of much importance as neurologic evidence of disease. The manifestations have in several instances occupied regions above the zone supplied by the injured area in the cord or nerve roots.

Clinically, the patients have recovered a certain amount of motor power in all except one instance, that of the paraplegic patient who was referred to as being permanently an institutional case. All the patients were litter cases on admission to the hospital, and yet they had been ill many months. By the end of the first year, however, definite motor power had returned, and now every man, save one, is ambulatory. I wish to

emphasize here that the motor nerve roots have shown evidence of return of function, while sensory losses have remained permanent.

The sensory nerve roots, then, lacking regeneration, have failed to demonstrate recovery; I consider this evidence, in all except one case, of a failure of return of the reflex control of the sphincters. Improvement from the state of automaticity will not take place, and we must tell the patient that his bladder will not improve.

Prognosis, then, depends on the recognition of the reflex arc control for sphincteric action, and the reasonably sure fact that the permanent break is on the sensory nerve root side. Explaining the persistence of sphincteric loss, when the lesion is in the cord, we turn to other types of cord lesions, and find a ready explanation in the accepted theory that cord tissue does not regenerate.

#### FINAL CONDITION OF PATIENTS

Clinically speaking, the patients have shown steady improvement, with gain in weight, return to normal color, and the return of blood pressure from approaching an asthenic state. We may picture a man, permanently lame, but young and eager to get around, and therefore managing to do so; a man who must at intervals resort to the closet and spend a little time forcing urine from his bladder; who must give himself an enema daily, and who otherwise may go about, a useful citizen. Doing this, we have the type exemplified by these recovered (?) shell fracture cases.

We have attempted by generalities to convey the late stages of this game against profound injury, as an entity; the bladder and kidney function has preserved an even keel, except in those cases in which there was severe infection and the patients succumbed early in the fight.

The various complications we might expect, due to bladder stasis, possible back pressure on the ureter and kidney, to early bed invalidism, to atrophy of parts, to neurotrophic injuries, local or general, and in view of early careless instrumentation, we have not encountered. We admit a certain amount of permanent renal fibrosis, dating back to the period immediately following injury.

In two cases coming to necropsy, not included in the twenty-nine of the series, having uremic symptoms as terminal findings, no hydronephrosis was found. This bears out the original contention that infection is the deadly element.

#### METHOD OF INVESTIGATION

Our manner of survey has been systematized along the lines followed in the study of the original series. Intervals elapsing by arbitrary choice, the periods of survey were chosen in an attempt at uniformity. During the time between surveys, routine urinalyses have been made every one to four weeks, and any chance symptom referable to bladder or kidney disease was immediately followed to its source for elimination or relation to the composite picture. The surveys have been made with no change of diet or other routine in which the patients lived. The prolongation of the stay in the hospital to more than two years has been for the purpose of securing under medical attention and guidance the maximum motor return, and not in any case because of the genito-urinary state.

Determination of residual urine, of kidney and bladder infection, of kidney function as estimated by excretion of phenolsulphonephthalein, and the chemical nature of the blood with regard to possible retention of



nitrogenous products has provided the skeleton for each survey. Further than this, we have been able to examine ten of the patients with the cystoscope, daring to do so with extreme care because each patient had existent infection, and in one instance because of the indication for determining whether the typical cystoscopic picture persisted with clinical bladder recovery.

Careful data were taken as to subjective symptoms also, including the occurrence of hyperhidrosis, sensory or motor disturbances, sex function, or the lack of sex function and ideas. Erections and emissions were recorded for reference.

The patient's statement as to the condition of his bowels, the sensation of bladder fullness, his schedule of micturition, and his method of voiding served as leading data also. Intercurrent treatment and progress were taken into consideration, and the relation of these to bladder and kidney function. Results were a series of repetitions. The cystoscopic picture was unchanged.

We have referred to our lack of treatment, and to two exceptions; we found in the few cases in which there were large amounts of residual urine that, by a sequence of catheterizations on several succeeding days, the residual diminished in amount. Each catheterization was followed by an argyrol instillation. In two cases we tried the sinusoidal wave treatment, advocated widely for bladder paralysis by physiotherapists. For ten weeks the daily treatments were continued. During the treatment in one instance, with the cystoscope in place we found that, simultaneously with the passage of the current, the bladder showed complete and violent contraction, and the ureters were seen to force out strong jets of urine at intervals. The ureters always contracted with the bladder. Both these experimental cases ended disastrously at about the expiration of the ten weeks, one man developing a massive ischio-rectal abscess, and the other an acute epididymitis.

#### CYSTOSCOPIC EXAMINATION

The cystoscopic picture of the shell fracture cases may be thus summed up: normal or hypertonic contraction of the external sphincter; complete relaxation of the posterior urethra, the floor definitely falling away from the roof; the verumontanum plainly seen in most cases, appearing to lie in the floor of the bladder; the internal sphincter almost wholly obliterated as such, and the catheter drawing water on passing the external sphincter muscle, just as it would in cases of tabetic bladder; the trigon sometimes definitely atrophic, sometimes raised in ridgelike formation creating a bas fond; trabeculations found in every case, gigantic in size, as a rule transverse and coarse on the floor, rather evenly distributed on the lateral walls, and having their greatest complexity on all the faces surrounding the vertex. The level of the lesion apparently has nothing to do with either the functional activity of the bladder, or the secreting power of the kidney.

Adopting routine measures of careful inspection of the sphincteric region for atonicity, allowing visualization with the ordinary cystoscope, of the prostatic ducts, the verumontanum and the sinus pocularis, findings which, combined with intravesical trabeculations, indicate tabes or some other neurologic condition, we have discovered a very definite atonicity in twelve cases; none of these patients were proved to have any nerve lesion.

Pelouze,<sup>2</sup> in 1917, describing his method of search for manifestations of tuberculosis in the posterior urethra, states that in some cases, with a simple cystoscope, the posterior urethra may be visible while the fluid for distention is actually flowing into the bladder. We have been repeatedly called on to render opinions on suspected neurologic conditions, by bladder findings; but for cases other than tabes, our investigations hinged on other evidence have led nowhere.

The twelve instances of dilated internal sphincter and posterior urethra occurred among 350 cystoscopic examinations. The cystoscopic picture is similar to that described in shell fracture cases, except for a lack of trabeculations, and a tendency for the internal sphincter to retain some tone so that there is a zone of poor focus as the cystoscope is withdrawn over the sphincteric ridge. As the cystoscope is passed into the bladder, it is noted that there is no resistance after passing the cut-off muscle; on catheterization, however, usually urine is not found until the bladder itself is reached. We have decided that the condition may not exist except with the instrument in position.

The conditions recognized in the twelve patients were: enuresis, cause undetermined, two cases; ureteral stone, one

case; prostatic abscess, two cases; kidney stone, two cases; recto-urethral fistula, one case; no disease, four cases. The spinal fluid examinations in several, all subjected to lumbar puncture, were negative.

While not satisfied that this finding of distinct changes means a pathologic condition, we feel that it may exist unrecognized in many cases, and that, when noted, it may mislead. In every instance trabeculations were absent or negligible. In any case, the bladders of normal individuals may approach the type commonly recognized as the result of myelitis, traumatic or infective.

Of the five patients with tabes, ranging in age from 22 to 35 years, in two no bladder changes were found; no deviation from normal in kidney function, and no bladder symptoms. Examinations were made after the patients were well along in the course of the disease, as was manifested by clinical and laboratory tests.

Three patients showed typical tabetic bladder's according to Caulk's<sup>3</sup> description of the type exhibited

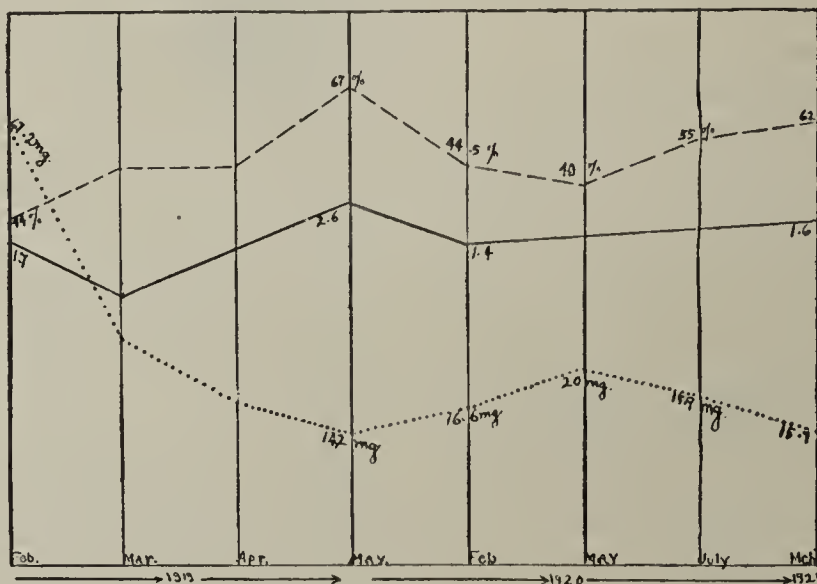


Fig. 2.—Dotted line, composite curve of fall of blood urea nitrogen; solid line, curve of percentage relationship of first and second hour phenolsulphonephthalein; broken line, relative upward curve of total phenolsulphonephthalein.

2. Pelouze, P. S.: Lymphoid and Cystic Bodies in the Urethra as an Evidence of Tuberculosis, *J. Urol.* 1: 367-382 (Aug.) 1917.

3. Caulk, J. R.; Greditzer, H.G., and Barnes, F. M.: Urologic Findings in Diseases of the Central Nervous System, *J. A. M. A.* 73: 1594-1599 (Nov. 22) 1919.



in tabes; they had urinary retention, and cystitis following persistent catheterization. They came to the hospital, one patient three months, two patients six months, after the onset of the retention. All were paraplegic, apparently from intensive intraspinal arspenamin treatment. They demanded catheterization as their right.

Against the counsel of accepted ideas, we felt that these men might well profit by attaining automatic bladders; to them the idea was absurd, so we demonstrated the automatic bladder in our spine fracture cases, won them to the idea, and in ten days the two younger men were comfortably emptying their own bladders by straining with pressure on the abdominal wall, and massage over the bladder region. For six months two of the patients have continued with the true incontinence, controlled to an automatic degree, by the habit of emptying. Neither has residual urine of more than 60 c.c. (2 fluidounces). Neither has shown any diminution of kidney or bladder function. The third patient came to us with a violent nonsyphilitic urethritis, and a mixed infection of the bladder. Under local treatment he improved. For two or three months he was able partially to empty his bladder in the manner described; occasional catheterization was necessary. Later, complete retention ensued, and within two months of that time he died, with bilateral pyonephrosis, prolonged hiccup, semistupor and uremic blood findings.

So much data regarding the tabetic cases are given as I feel that they link up closely, as to general handling and care, with the other type of case with paralytic bladders; I advocate the establishing of incontinence for tabes in lieu of repeated catheterizations, which always mean infection.

In a few cases of traumatic spinal cord and cauda injuries, coming under observation directly after the injury, we have been gratified to see the true incontinence established after from forty-eight to sixty-four hours of retention, with complete abstention from catheterization. Within ten days, the automatic emptying is in order, unless unconsciousness has supervened.

Of the twenty patients with shell fracture mentioned in the original report, six remain in the hospital; almost immediate discharge is pending for four of these; in addition, there are four patients in the hospital not included in the original twenty. I repeat, for its significance, that these men have not been kept for their bladder and rectal involvement. They have been free from any increase in sphincter loss, and might have long since returned to civil life, as far as bladder and kidney function are concerned.

Reference to the accompanying chart will show that the curve maintained by the plotting line representing phenolsulphonephthalein output in its relation to that of urea nitrogen holds the same relation as recorded in the previous report. When the urea nitrogen increased, the dye excretion was lowered, and vice versa. The relation of the first to the second hour excretion of dye was not so well maintained, although the relation showed a constant increase of the first over the second hour output.

#### CONCLUSIONS

1. Since the observations made by Dr. Plaggemeyer, and in most of the shell fracture cases, since the injury, there has been no return of the reflex nervous control of the bladder. From the neurologic standpoint, in

general, there has been decided motor improvement, and less, if any, sensory improvement.

2. In several cases, partial sex function return is recorded; in one case the man married and reports normal sex power since the spring of 1920. His bladder picture returned to normal, and the only disability remaining is a slight sensory loss in the genitalia.

3. All except a few patients with shell fracture have recovered good general health, even though they may not have excellent kidney function. In the fatal cases the patients died early in the course of their disease, in every instance from kidney infection and uremia.

4. In all except the one case noted above, we believe that the bladders have retained the changes developing subsequent to the injury. Each patient carries a small amount of residual urine.

5. In no case has there been infection late in the progress; also, other complications have been avoided, owing to avoidance of catheterization as far as possible.

6. Of the two surviving patients who had had kidney infection, both came to operation, one for early drainage with complete recovery, and the other after more than a year, for nephrectomy. Of these two, one was the only patient of the entire series of twenty-nine not catheterized after the injury. He, it is interesting to note, is syphilitic.

7. Use of the sinusoidal current for bladder stimulation was apparently efficacious for a time, but in two cases serious complications developed.

8. Of supreme importance to the patients themselves, their general condition has improved to a point at which they are ambulatory, enjoying life to a degree seemingly impossible. Their bladders have taken on the automatic state, with which they can be entirely comfortable.

9. Hyperhidrosis, a constant finding in these cases, has persisted to a varying degree. All trophic ulcers have healed.

10. Repeated cystoscopy in one case had no detrimental effect; following nephrectomy for pyonephrosis of long standing, the patient improved and showed increase in kidney function.

11. The average amount of residual urine found in the cases included in this report was 260 c.c. ( $8\frac{3}{4}$  fluidounces). Two patients had a constant residual amount of 800 c.c. (27 fluidounces), making the average relatively high.

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**Movement Alters Position of Brain.**—There is no doubt that the normal brain obeys the law of gravity, and alters its position with varying positions of the head. Every organ of the body possesses a degree of mobility proportional to the extent to which it is covered by a serous membrane separating it from the wall of the cavity which contains it. The serous membranes of the thoracic and abdominal cavities, as well as those which line the joints and the tendon sheaths, result from and facilitate movement. The brain is no exception; the serous cavity lying between the dura and the arachnoid can fulfil no other purpose; the intense pain occasioned by any movement of the head in meningitis is analogous to that of pleurisy. Whenever the skull and dura are widely opened during an operation, movements of the brain can be demonstrated by altering the position of the head, and although their extent is probably exaggerated by reason of the different physical conditions which obtain in the open as compared with the closed skull, there is no reason to suppose that all movement is absent when the skull is whole.—Percy Sargent, *Brain* 44:322, 1921.



## THE SERUM PROPHYLAXIS OF MEASLES

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About 91 per cent. of deaths from measles occur in the first six years of life, and about 8 per cent. between the sixth and fourteenth years.<sup>1</sup> The general condition of the child plays an important part in the death rate. A death rate of 37 per cent. has been reported from a certain German orphanage, with an average of between 6 and 7 per cent. Patients from such institutions, who may be suffering from malnutrition, tuberculosis or some other chronic infection, have relatively poor chances for recovery.

It is difficult to prevent exposure to the disease because of the highly contagious four days' prodromal period during which there are no specific characteristic symptoms. Thus, the parent believes the child to be suffering from an acute cold, and he is seldom isolated from other children. It is, therefore, of the utmost importance to prevent the disease, or diminish its severity during the age from 5 months to 6 years, particularly in children who are in poor physical condition.

Herrman<sup>2</sup> attempted to convert the supposed temporary immunity of infants under 5 months to a permanent immunity by transferring to the nasal mucous membranes mucus taken from the nares of an afflicted child, twenty-four hours before the appearance of the rash. Of forty infants inoculated, four had been in intimate contact with patients with measles and did not contract the disease. In a discussion,<sup>3</sup> four years later, he asserted that only two of twenty-five children of his original series had contracted the disease. This method cannot be recommended strongly because of the danger of producing a severe attack of the disease in a susceptible infant and also of introducing other virulent organisms.

Richardson and Connor<sup>4</sup> reported the successful immunization of children exposed to measles by the injection of serum obtained from donors on the tenth day after disappearance of the fever. The majority of the recipients received 15 c.c. of serum. Maggiore<sup>5</sup> injects susceptible children, about to enter a hospital, with 2 c.c. of serum from convalescent patients, and double this amount on the following day.

Degkwitz,<sup>1</sup> employing the same principles, found that the optimal time to bleed the convalescent donor is between the seventh and fifteenth day after the disappearance of the fever, and that complete protection is afforded the recipient by the injection of 3.5 c.c. of serum before the end of the fourth day after exposure; the dose should be doubled if the injection is delayed until the sixth day. If less than 3 c.c. is given not later than the fourth day after exposure, the incubation period will be prolonged, and the severity of the symptoms markedly decreased. The symptoms may disappear at the end of thirty-six hours. On the other hand, relatively high doses of the serum given on the seventh day after exposure neither postpone the onset,

nor lessen the severity of the attack. This is to be expected, according to the work of Blake and Trask,<sup>6</sup> who found that the virus of measles enters the blood not later than the seventh day. Following these principles, Degkwitz treated 172 children exposed to measles; in not a single instance did the disease develop.

Kutter,<sup>7</sup> using the same method, has reported the results of the injection of 145 children, four of whom had typical measles. He recommends the use of mixed serum.

The injection of the serum was tried out during a recent epidemic of moderate severity in Rochester. The donors were free from tuberculosis and syphilis, and had passed through fairly severe attacks of measles, without complications or sequelae. They were bled after an interval of five, seven or nine days from the disappearance of the fever. The serum was bottled in amounts of 6 c.c., preserved with 0.01 per cent. tricresol, and kept in the icebox until used. After varying periods following exposure, sixteen recipients were given 5 c.c. of the serum, injected into the muscles of the thigh. None of the children had ever had measles, although they had come in intimate contact with patients during the contagious period.

Four of the sixteen developed an extremely mild type of measles. The catarrhal and constitutional symptoms were very moderate, and the rash was exceedingly sparse, being limited to a few macules over the face and trunk. No complications or sequelae developed in any of the patients. In three of the four patients, the incubation period was lengthened to nineteen days.

Concerning the four failures, it should be mentioned that in three the serum used was obtained on the fifth day and in one on the seventh day. All recipients receiving serum obtained from donors on the ninth day after defervescence were protected. On the other hand, one patient (Case 7) injected on the fifth day of incubation developed measles, while another patient (Case 8) with the same history of exposure, and injected with the same serum on the sixth day of incubation, did not develop the disease. A brother and sister (Cases 15 and 14), with the same history of exposure received the same serum the same day, on the fourth day of incubation. One (Case 14) developed a mild attack of measles of the nineteenth day after exposure, and one (Case 15) remained well. Likewise, there is no explanation for the failures in two other instances, except that the infection was more overwhelming and that the serum was obtained from the donor too early.

The duration of the immunity has not been established. Degwitz and Kutter report that protection may last six months. In our series, one child who received 5 c.c. of serum, April 6, the fifth day of exposure, developed a fairly severe attack of the disease two months later.

On the discovery of measles in a home or institution, the exposed persons should be treated promptly. Since the Koplik spots, which constitute the first definite characteristic symptom of the disease, usually appear on the third or fourth day of the contagious period, and the rash not until the fifth or sixth day, it is apparent that the injection of the serum should not be delayed beyond the day of the appearance of the rash.

1. Degkwitz, R.: Ueber Masern-Rekonvaleszentenserum, *Ztschr. f. Kinderh.* **27**: 171-194, 1920.

2. Herrman, C.: Immunization Against Measles, *Arch. Pediat.* **32**: 503-507, 1915.

3. Herrman, C.: Discussion, *Arch. Pediat.* **38**: 100-102, 1921.

4. Richardson, D. L., and Connor, Hilary: Immunization Against Measles, *J. A. M. A.* **72**: 1046-1048 (April 12) 1919.

5. Maggiore, S.: Serum Prophylaxis of Measles, *Pediatrics* **29**: 873, 1921.

6. Blake, F. G., and Trask, J. D., Jr.: Studies on Measles: Susceptibility of Monkeys to the Virus of Measles, *J. Exper. Med.* **38**: 385-412 (March) 1921.

7. Kutter, P.: Masernschutz durch Rekonvaleszentenserum, *Ztschr. f. Kinderh.* **30**: 90-99, 1921.



It is also to be remembered that patients whose measles has been attenuated are quite as capable of transferring the disease to a susceptible person as the patient with typical measles.

The nature of this immunity is not clear. The fact that the serum is most efficacious when obtained between the seventh and fifteenth days suggests a passive immunity, because at that time we would expect a maximum quantity of antibodies. The short period of protection and the relatively late administration of the serum would agree in pointing to the absence of any specific stimulator of antibodies. On the other hand, the observations of Degkwitz and Kutter suggest that under certain conditions an active immunity may be considered. Several exposed children were treated as late as the sixth day of incubation and remained well, and serum obtained several months later from these children protected other exposed children. This suggests that certain allergic reactions occur in the organism as early as six days after infection. The protection afforded by the early injection of serum in such small amounts is suggestive of a synergistic action in which the production of antibodies might be aided by a nonspecific stimulation. The solution of such problems, however, must await the definite isolation of the measles organism, and a study of its various biologic characteristics.

#### RESULTS OF SERUM INJECTION IN SIXTEEN CASES

Cases	Age, Years	Serum*	Time of Incubation Before Infection, Days	Results
1. J. B. ....	6	A	5	No measles
2. D. C. ....	4	A	6	No measles
3. E. G. ....	3	A	6	No measles
4. L. W. ....	3	A	7	No measles
5. E. Q. ....	1	A	5	No measles
6. B. D. ....	1	A	4	No measles
7. D. A. ....	5	B	5	Very mild measles; incubation period 12 days
8. D. L. ....	4	B	6	No measles
9. J. H. ....	7	B	5	Very mild measles; incubation period 19 days
10. V. A. ....	6	C	4	No measles
11. L. P. ....	8	C	6	Very mild measles; incubation period 19 days
12. E. M. ....	2	C	3	No measles
13. J. G. ....	1	D	4	No measles
14. R. O'C. ....	5	D	4	Very mild measles; incubation period 19 days
15. D. O'C. ....	11	D	4	No measles
16. C. H. ....	6	D	5	No measles

\* A, serum was obtained from a donor nine days after defervescence; B, five days; C, five days, and D, seven days.

#### SUMMARY

1. The results in our short series of cases is convincing evidence of the efficacy of serum from patients convalescing from measles.

2. Sixteen children exposed to measles received intramuscular injections of 5 c.c. of serum obtained from healthy donors between the fifth and ninth days after the disappearance of the fever.

3. Twelve of the sixteen children injected remained free from measles, and four developed a mild form of the disease.

4. One child contracted measles two months after successful injection; this suggests that the immunity does not persist longer than sixty days in some cases.

5. The method recommends itself most highly for the prevention of measles during the period of danger, between the ages of 5 months and 6 years, in tuberculous children and in those physically below normal.

6. In institutions in which large numbers of frail children are intimately associated, the procedure would be of great value.

7. A marked attenuation of the disease with permanent immunity, but without complications or sequelae, would seem to be even more advantageous than the absolute but transient protection.

## BASAL METABOLISM AND IDEAL WEIGHT AND PULSE RATIOS

AS SHOWN BY THE FINDINGS IN MORE THAN TWENTY-FIVE HUNDRED OBSERVATIONS ON ABOUT TWELVE HUNDRED SUBJECTS:  
A PRELIMINARY REPORT

ANNE PETERSON, M.S.

AND

WILL WALTER, M.D.

CHICAGO

It occurs to us that the findings in a large series of basal metabolism observations—more than 2,500 on about 1,200 subjects—should have the wide circulation which only THE JOURNAL can give. These reports will be published in detail in special journals shortly, but we wish to make a preliminary report on the research because of the renewed interest in the activity of the thyroid gland as part of the general interest in the internal secretions; and because many ideas are current in regard to the overaction or underaction of the thyroid, which do not seem justified, or at least are controverted, by these findings. As a result, subjects are assumed to be hyperactive and treated as such on bare symptomatology such as irritable heart and loss of weight or after unreliable tests; while, on the other hand, many are fed thyroid on the assumption that increased weight or other symptoms are due to hypothyroidism.

When the Wassermann test was first employed, the findings of almost any technician were accepted; but with time it has become apparent that errors of technic are so common that clinicians now ask under what conditions and by whom the tests are made, before accepting them. They want to be sure of the accuracy of a finding which carries such far reaching effect.

Since the conclusions of such workers as Means and Aub, Benedict, Plummer and Du Bois, that the secretory activity of the thyroid is measurable by the determination of the energy transformation in a resting, fasting subject, this test—the so-called basal metabolism test—has assumed an importance akin to complement fixation blood chemistry and other laboratory tests; and the knowledge so gained is sufficiently indicative to make its accuracy of paramount importance.

As a prologue to a large research being made under the direction and with the cooperation of the co-author (W. W.), the author was asked to determine the following points in order, viz.: 1. The reliability of the tests and possibility of errors in the technic employed. Gas analysis being difficult and requiring specially trained workers, and the apparatus therefore being nonportable, both of which limit the broad employment of the test, we wished to try out a portable type, so simplified as to carry a minimum chance of error. 2. Whether the assumed interrelation of weight and thyroid activity is warranted; i. e., to study the possibility of diagnosing thyroid dysfunction by the weight of the subjects before us. 3. To check up on the ratios of pulse rate and basal metabolism in order to find if possible what might be the probable diagnosis from the



determined pulse rate of our subjects. 4. Similar relations of blood and pulse pressure, which seem desirable.

Fortunately, we had access to the records of the Battle Creek Sanitarium laboratories and to their clinical findings. The author had instituted there the technic which had been obtained in the Mayo Clinic with the open circuit (Tissot-Haldane) method; and for a period of eighteen months we had used this test and the closed circuit (Benedict) method interchangeably at the Battle Creek Sanitarium. We were thus enabled to tabulate the findings in various comparative ways.

Freed from all embellishments of detailed charts, bibliographies, arguments, etc., which are reserved for the fuller reports in special journals, the conclusions that may be published in a preliminary statement, are as follows:

#### RELIABILITY OF TESTS AND POSSIBILITY OF ERROR

The gas analysis and the Benedict methods have been used interchangeably on fifty-five subjects, one test following the other immediately and with the result shown in Table 1.

Analysis of this summary, together with the experience on more than 2,000 subjects tested each at least twice, though not on the same days, shows that this portable apparatus (as doubtless others also) is suitable for the test if done under proper conditions, since the variation is no greater than could be accounted for by errors, and is negligible. However, with increased

TABLE 1.—SUMMARY OF VARIATIONS

Seventy-Seven Observations on Fifty-Five Subjects			
	Maximum Variation	Minimum Variation	Average Variation
Tissot vs. Benedict.....	12%*	0	3.2% net
Tissot vs. Tissot.....	4%	0	2 %
Benedict vs. Benedict....	4%	0	1.5%

\* This relatively high variation was due to two subjects, one very nervous and one who traveled to the laboratory. Omitting these, the average variation figures less than 3 per cent.

experience it is patent that certain needs must be met for reliable results, namely, the breathing appliance must be tight and free from annoyance, and the subject must have rested all night and be perfectly quiescent for at least twenty minutes and must have fasted between twelve and fifteen hours. In other words; tests made on subjects who have not rested well the night before, or who have partaken of food or who have come from a distance to the laboratory or who are unduly excited, must be discarded as misleading.<sup>1</sup>

Having thus established the reliability of the portable apparatus, the making of tests in the bed at home is shown to be a feasible project; the laboratory may be taken to the patient. If the patient does not travel to the laboratory, another element of chance is eliminated.

#### POSSIBILITY OF DIAGNOSING THYROID DYSFUNCTION BY WEIGHT OF SUBJECT

As to the second problem, the basal metabolism has been charted against the ideal weight on 1,087 subjects (more than 2,300 observations) with the result given in Table 2.

#### BASAL METABOLISM AND IDEAL WEIGHT

These tests are more graphically summarized in Chart 1.

Analysis of these findings shows that, contrary to the usual belief not only of the profession but also of laymen generally, there is no cause and effect relation

between weight and thyroid activity as evidenced by the basal metabolism tests; i. e., taking a whole group for study. Some proof of the theory of weight-thyroid interdependence is found in the outlying cases. There are thirty-two subjects of decidedly high metabolism (over 20 per cent.) and low weight (under 10 per cent. minus), cases which seem to support the theory. Of these, nineteen were diagnosed as exophthalmic goiter;

TABLE 2.—BASAL METABOLISM AND IDEAL WEIGHT

	Plus Basal Metabolism	Subjects	Minus Basal Metabolism	Subjects	
Men (a) (312)					
Underweight...	88 = 28.2%		144 = 46.1%		31.3 against theory
Overweight....	34 = 10.9%		46 = 14.8%		17.3 for theory
		17.3		31.3	14.0% net against
Women (b) (775)					
Underweight...	143 = 18.5%		287 = 37.0%		6.2 against theory
Overweight....	106 = 13.7%		239 = 30.8%		4.6 for theory
		4.6		6.2	1.6% net against
Combined table (c); Men and Women (1,087)					
Underweight...	231 = 21.3%		431 = 39.6%		13.4 against theory
Overweight....	140 = 12.9%		285 = 26.2%		8.4 for theory
		8.4		13.4	5.0% net against
Men and Women (596) (d) Metabolism above 10% and below -5%, thus excluding normals					
Underweight...	101 = 17.0%		263 = 44.1%		11.7 against theory
Overweight....	39 = 6.5%		193 = 32.4%		10.5 for theory
		10.5%		11.7	1.2% net against

but since, according to Plummer,<sup>2</sup> the loss of weight symptom is a late development in the exophthalmic syndrome, they after all agree with expectations.

There are twenty-two subjects showing overweight with high metabolism. Of these a diagnosis of hyperglycemia was made by the clinicians in all of the cases whose histories we were able to study. In general, with the high weights there is an excess of blood sugar.

It seems thus to be shown by this large grouping of findings that weight changes are determined by other endocrines—possibly the anabolic types—rather than by the catabolic group to which the thyroid belongs; and the conclusions should serve as a warning against the promiscuous administration of thyroid extracts in subjects of overweight; especially in view of the published experiments of Hashimoto, who found definite

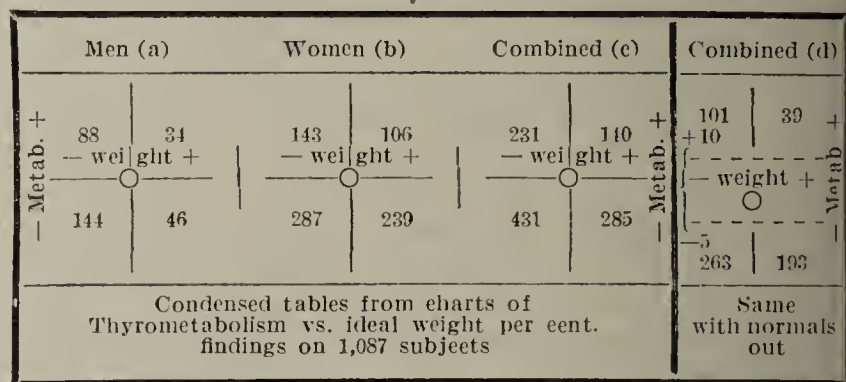


Chart 1.—Condensed table from charts of thyrometabolism versus ideal weight.

myocarditic lesions in animals fed with thyroid over prolonged periods or in large doses—lesions corresponding to those found in goiter hearts.

#### RATIO OF PULSE RATE AND BASAL METABOLISM

As to the third problem, in the accompanying chart is shown the condensed plotting curve of basal metabolism against what we have termed the "basal pulse rate"; that is, the pulse rate taken in the same resting,

1. An occasional check up of closed circuit, oxygen consumption apparatus against the open gas analysis method is necessary to assure results.

2. Plummer's sequence of symptoms is as follows: (1) mental excitation; (2) vasomotor disturbances; (3) tremor; (4) mental irritability; (5) tachycardia; (6) loss of strength; (7) cardiac insufficiency; (8) exophthalmos; (9) loss of weight; (10) diarrhea; (11) vomiting; (12) mental depression.



fasting, relaxed state required for basal metabolism. The pulse is so susceptible to body changes that some such standard is needed. The original chart of these findings is most interesting. It shows among other things that the mean rate of basal pulse in men is 66, while in women it is 74, a difference which is important.

Analysis of this chart shows the association of low pulse definitely with low metabolism with gradual ascent of curve of rising metabolism with increase in pulse rate, until at 0 of metabolism an average pulse rate of 85 is recorded. After that point is reached the metabolism shoots up with the increasing rapidity of the pulse rate until the runaway pulse is reached, after which it does not change much. There are, of course, many individual variations. For instance, there are many rapid hearts with low metabolism. Most of these cases have a diagnosis of cardiovascular disease. There are also a few cases of high metabolism with slow pulses; some of these we have followed back for diagnosis. They disclose quite a variety of diseases—one paralysis agitans, several gallbladder, one spleen disease and numerous combinations of cardiovascular disease with diabetes.

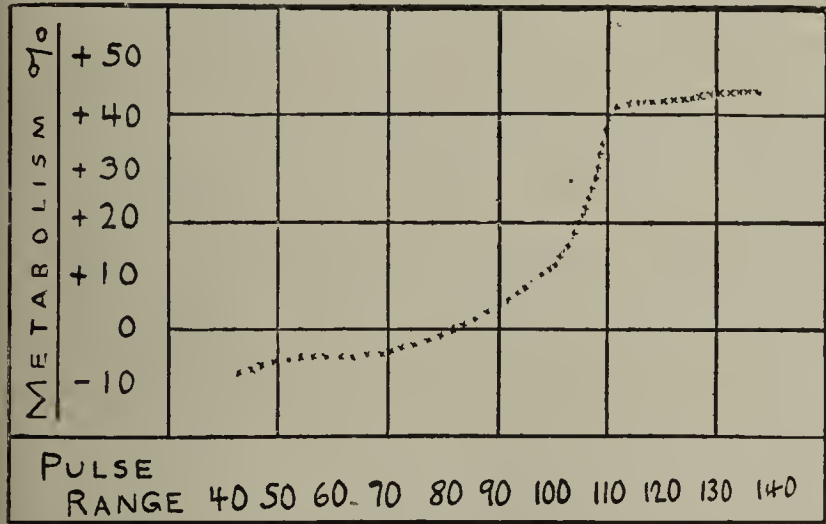


Chart 2.—Comparison of pulse and basal metabolism ranges in 1,153 subjects (more than 2,500 observations).

But it is evident from the observations taken as a whole—the first large group study that we have seen—that a pulse rate over 82 in men or 90 or over in women in a resting state is cause for suspicion of hyperthyroidism, and that a basal metabolism test is indicated for final judgment and is likely to show plus. Several observations have shown that when the pulse rate drops from a high normal in action to a normal or low “basal” rate, the basal metabolism is most likely to show normal or low. This harmonizes a large group finding with the case findings of Sturgis and Tompkins, who made 496 observations on 154 cases of hyperthyroidism at various periods, and concluded that “there is a fairly constant relationship between the pulse rate and metabolism,” and that “an extreme degree of tachycardia suggests a greatly increased metabolism, while a slight tachycardia usually indicates a slight or moderate increase.” Our tables show this for the large group of normals as well; and quite as emphatically they show that a low metabolism is indicated by a low pulse rate.

SUMMARY AND GENERAL CONCLUSIONS AS TO THE FIRST THREE PROBLEMS

The basal metabolism test is necessary for diagnosis and for therapeutic regulation. Its determination by tried out portable apparatus is reliable. The test is best

made at the bedside of the subject, and the portable apparatus makes feasible its use in the home when proper technic is employed.

The mass of evidence is against weight being influenced to any consistent degree by thyroid activity alone as evidenced by basal metabolism tests. Obviously in some cases, as Biedl has shown, the thyroid is the hormone at fault; but the promiscuous employment of any thyroid therapy is dangerous, and had best be done under basal metabolism control.

No attempt is made by us to find why the thyroid is overacting or underacting; that is the domain of the clinician. We are merely recording the range of its activity as shown by the tests.

It seems fairly established that pulse rate and basal metabolism are closely associated generally.

Early diagnosis of hypothyroidism and hyperthyroidism is of great importance and should be made available more generally. But it must be freed of error to be of real value.

BUTYN, A NEW SYNTHETIC LOCAL ANESTHETIC: REPORT CONCERNING CLINICAL USE

SPECIAL REPORT OF THE COMMITTEE ON LOCAL ANESTHESIA OF THE SECTION ON OPHTHALMOLOGY OF THE AMERICAN MEDICAL ASSOCIATION \*

ALBERT E. BULSON, JR., M.D.  
FORT WAYNE, IND.

Council on Pharmacy and Chemistry of the American Medical Association—Gentlemen:

At your request the committee secured some samples of butyn, a new local anesthetic, which the manufacturers, the Abbott Laboratories, provided, and submitted it to animal experimentation and clinical trial. These experiments were begun several months ago by the individual members of the committee, and up to the present time seem to have been sufficiently extensive and conclusive to justify the report herewith submitted.

Though the committee was supplied with samples of powdered butyn, it was thought best to follow the suggestions of the manufacturers and experiment with a 2 per cent. solution, and later, under appropriate precautions, use solutions of great concentration. Accordingly, this report, except where otherwise noted, applies to results as obtained with the 2 per cent. solution.

In accordance with your suggestion, we recorded our observations as follows: anesthesia, including onset, depth, penetration and duration; side actions, including immediate and late irritation, changes in pupil diameter, vascularity, intra-ocular pressure, desiccation of cornea and other side actions; toxic systemic effects, and comparative value in ophthalmic work, including major as well as minor operations. Under these various headings our observations are as follows:

ANESTHESIA

Repeated trials indicate a striking rapidity of anesthetic action, as indicated by the fact that one minute after one instillation of a 2 per cent. solution of butyn in the eye, surface anesthesia is sufficient to

\* This report was presented to the Council on Pharmacy and Chemistry. The Council considered the report and has authorized its publication.  
W. A. PUCKNER, Secretary.



permit of touching the cornea or removing superficially placed foreign bodies without discomfort. This surface anesthesia lasts from fifteen to twenty minutes, when, in the average case, it begins to subside. Occasionally the anesthesia has been noted for from twenty-five to thirty minutes. The depth of anesthesia produced by one instillation is not sufficient for operations, or for even the removal of deeply embedded foreign bodies in the cornea. It is, however, sufficient for the painless extraction of superficially placed foreign bodies, the application of irritating astringents, and the determination of intra-ocular pressure with the tonometer. When the number of instillations is increased, there is a marked increase in the depth, degree and duration of the anesthesia.

For operative work the committee has followed the plan generally used when cocain is the anesthetic employed, which consists in four instillations, three minutes apart, the operative work to be begun from five to ten minutes after the last instillation. This method resulted in the production of an anesthesia deep enough and complete enough for all of the commoner major operations on the eye, with the exception of enucleation, which up to the present time has not been performed under butyn anesthesia by any member of the committee. The height of anesthesia appears to be secured at about five to eight minutes after the fourth instillation of the anesthetic, and its duration is from twenty to thirty minutes in the average case, though frequently lasting much longer, and in a few instances even the surgical anesthesia has lasted for nearly an hour.

#### SIDE ACTIONS

One instillation of a 2 per cent. solution of butyn almost invariably produces a mild hyperemia of the conjunctiva. This hyperemia is not noticeably increased by subsequent instillations of the anesthetic. It is controlled readily by epinephrin solution, or may be averted by combining epinephrin with the butyn. When epinephrin is not employed, the hyperemia gradually disappears in from thirty to sixty minutes. The hyperemia seems to be more marked and of longer duration in diseased eyes, even though the active stage of disease has passed.

Butyn solutions do not affect the pupil diameter in any way, and produce no change in the intra-ocular pressure. There also is no desiccation or disturbance in the nutrition of the cornea, so far as has been determined. We also are of the opinion that butyn solutions do not deteriorate rapidly, even when exposed to air and light, nor is their anesthetic efficiency impaired by boiling.

#### TOXIC SYSTEMIC EFFECTS

In beginning the use of butyn, we were confronted with the statement of the Research Committee of your Council to the effect that butyn is two and one-half times more toxic than cocain when injected hypodermically into albino rats, and that the lethal dose of butyn when injected intravenously into cats is about equal to that of cocain. One member of our committee, Dr. H. M. Langdon, in conjunction with Dr. Herbert Fox, director of Pepper Clinical Laboratory of the University of Pennsylvania, has conducted some animal experiments with a view to determining the toxicity of butyn, and the result of those experiments confirmed those of the Research Committee of your Council. The manufacturers state that their animal experiments substantiate these findings.

However, in no instance, including the hundreds of times that butyn has been used by the members of the committee for minor as well as major operations on the eye, as well as in operative work in the nose and throat, have the slightest systemic toxic manifestations been noted. Following the report that surgeons and dentists had freely used butyn for surface and infiltrative anesthesia with no toxic results, some of the members of the committee have used butyn in paste and in concentrated solutions as a topical application for operative work in the nose as well as in the eye, with no evidence of toxic effects. The committee, in comparing the effects on animals and men, is inclined to believe, as suggested by Professor Sollmann of your Research Committee, that there may be (1) differences in absorbability from mucous membranes; (2) different ratio of toxicity in man and animals, and (3) different frequency of idiosyncrasies. It is probable that if butyn is used as extensively as cocain, there will be cases of toxic effects reported, and then it is a question to decide whether the symptoms are due partly to psychic causes, to idiosyncrasy, or to error in using more of the drug than required to produce the desired effect.

#### COMPARATIVE VALUE IN OPHTHALMIC WORK

In the use of butyn as a local anesthetic, cocain is used as a comparison, and our committee is unanimous in the opinion that butyn for purely surface anesthesia for minor operations is superior to cocain for the reason that it acts more quickly, fewer applications are required, there are no objectionable side actions, such as dilatation of the pupil or desiccation of the cornea, and the anesthesia is more profound. For producing surface anesthesia for the removal of foreign bodies from the eye, the application of irritating astringents, estimating the intra-ocular pressure with the tonometer, or for any of the minor operative procedures, butyn solutions seem to be very useful.

For major operations, particularly those requiring opening of the eyeball, such as iridectomy and cataract extraction, the technic usually employed in obtaining a cocain anesthesia is employed in obtaining butyn anesthesia. The use of a 2 per cent. solution of butyn results in a more profound anesthesia than is obtained with a 4 per cent. solution of cocain, and without any objectionable side actions. For operations on the extrinsic muscles of the eyeball the results are equal to those obtained with cocain, though the committee believes that a solution stronger than 2 per cent. may be preferable.

#### INFILTRATION ANESTHESIA

In view of our understanding that butyn might prove quite toxic, we did not at first use butyn for the production of infiltration anesthesia, and only recently have we undertaken some experimental work, using both 0.5 and 1 per cent. solutions for the purpose. While our experience is limited, up to the present time we have had very satisfactory results. A 0.5 per cent. solution of butyn has been injected rather freely into the tissues for the purpose of doing advancements of the extrinsic muscles of the eyeball, for the opening of abscesses in the orbit and the appendages, and as an adjunct in operations in which the eyeball is opened. In the few cases in which this has been tried, a deep and satisfactory anesthesia has been secured. A more comprehensive report covering infiltration anesthesia with butyn will be made later, and will form a part of the committee report to be presented before the Section



on Ophthalmology of the American Medical Association.

#### BUTYN IN NOSE AND THROAT WORK

The chairman of the committee has used butyn solutions as a routine for several months in nose and throat work, and the results, in brief, are considered worthy of being a part of this report, as they bear directly on the question under consideration.

The recognition of the fact that the nasal mucous membrane possesses greater area and increased absorbing surface, as compared to the conjunctiva, made it advisable to begin with weak solutions and use smaller amounts until the toxicity in the average human being could be determined. Therefore, at first one application of butyn in 1 per cent. solution was made over small areas within the nose, and tests for anesthesia were made subsequently at intervals of from one to three minutes. These tests indicated a mild surface anesthesia produced within one minute. Later these tests were extended to include surface anesthesia sufficient for everything pertaining to an examination, including the use of applicators and eustachian catheters, as also for the allaying of discomfort occasioned by the use of astringents or escharotics. Finally, butyn in 5 per cent. solution was employed as a routine in producing anesthesia for all of the major intranasal operations.

As butyn produces no ischemic effects, there is no shrinking of tissues following its use; hence the condition of the intranasal tissues remains approximately the same except for the anesthesia. This is a valuable feature in those cases in which a portion or all of a turbinate is to be removed. When combined with epinephrin, butyn in 5 per cent. solution produces an anesthesia sufficient for all of the major intranasal operations, including submucous resection of the septum, turbinotomies and intranasal operations on the accessory sinuses. Not only is the anesthesia very satisfactory, but up to the present time not the slightest toxic effects have been noted in the hundreds of operative cases in which the anesthetic has been used. Among these cases are thirty-eight consecutive submucous resections of the septum and twenty-six consecutive intranasal operations on the nasal accessory sinuses.

The technic employed in obtaining anesthesia has been similar to that employed in obtaining anesthesia from cocain, except that the butyn has not been used in greater concentration than 5 per cent. solutions. The anesthesia lasts from thirty to forty minutes.

#### EXCEPTIONS

In comparing butyn anesthesia with cocain anesthesia, the committee has discovered that occasionally a patient seems to be immune to complete local anesthesia from butyn employed in either 2 or 5 per cent. solution. These cases are relatively few. The failure to secure complete local anesthesia in this very limited number of cases may be due to psychic disturbances or a highly neurotic temperament, or perhaps to a peculiar idiosyncrasy which makes the patient, in a measure, intolerant to the anesthetic effect of the drug.

#### SUMMARY OF CLINICAL RESULTS

The committee now has a detailed record of clinical experiences with butyn in the performance of several hundred major operations on the eye and the nose and throat. These include cataract extraction, iridectomy (including that done for the relief of glaucoma), trephine operation, magnet extraction of foreign bodies,

tenotomy and advancement of the ocular muscles, pterygium operations, removal of cysts and other tumors from the eyeball or lids, grattage, and a few cases of plastic surgery of the lids including the correction of entropion and ectropion. As yet no enucleations have been performed under butyn anesthesia, but we believe that such an operation may be performed very satisfactorily.

Local anesthesia is put to the best test when used for operations which involve cutting the iris or extrinsic muscles of the eyeball. The committee, December 1, had a record of thirty-nine cataract extractions combined with iridectomy, twenty-three iridectomies for glaucoma or as preliminary to cataract extraction, twenty-one capsulotomies and iridotomies, and eight muscle advancements, all satisfactorily done under butyn anesthesia. Aside from this there were a large number of other eye operations requiring less profound anesthesia which were performed satisfactorily under butyn.

In nose and throat surgery, butyn anesthesia has been used in practically all of the major intranasal operations, including submucous resection of the septum, turbinotomies, opening of accessory sinuses (including exenteration of the ethmoid cells), tonsillectomy and adenectomy, in all numbering nearly 200 cases.

In practically all of these cases, including nose and throat as well as the eye, the anesthesia has been very satisfactory, and the few exceptions are considered exceptions such as might occur under any local anesthetic. Two per cent. solutions of butyn were used for nearly all of the eye operations, whereas 5 per cent. solutions were used in most of the nose and throat operations. If more extended experience confirms our present belief that there is little cause for apprehension concerning toxic effects from the judicious use of butyn, then a 5 per cent. solution may be the strength of concentration preferred in some of the major operations in which profound local anesthesia is desirable and has heretofore been sometimes difficult to secure.

A detailed report of each and every one of our cases would extend this report to an unnecessary length, but will be submitted if deemed either advisable or necessary.

#### CONCLUSIONS

The results of the clinical and experimental use of butyn seem to justify the committee in arriving at the following conclusions:

1. It is more powerful than cocain, a smaller quantity being required.
2. It acts more rapidly than cocain.
3. Its action is more prolonged than that of cocain.
4. According to our experience to date, butyn in the quantity required is less toxic than cocain.
5. It produces no drying effect on tissues.
6. It produces no change in the size of the pupil.
7. It has no ischemic effect and therefore causes no shrinking of tissues.
8. It can be boiled without impairing its anesthetic efficiency.

Respectfully submitted,

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Chairman.

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## Clinical Notes, Suggestions, and New Instruments

### A FATAL CASE OF ACUTE ARTICULAR RHEUMATISM\*

MORRIS DINNERSTEIN, M.D., NEW YORK

The infrequency of a fatal outcome in acute rheumatic fever, especially during the first attack, and the unusual clinical features, prompt me to report this case. Various authors give the average mortality during the acute stage as being between 2 and 4 per cent., death usually taking place from hyperpyrexia associated with cerebral manifestations. In the wards of Bellevue Hospital, over the period extending from Jan. 1, 1919, to July 1, 1921, there were 631 cases of acute articular rheumatism, nine of which were fatal, a mortality rate of about 1.5 per cent. In 1916, in the registration area of the United States, 3,285 deaths were reported from acute rheumatic fever, nearly half of which were in patients over 40 years of age. But the correctness of diagnosis in many of these cases is open to doubt; for, as Swift points out, clinical experience teaches us that the vast majority of the cases of rheumatic fever occur during the first four decades. The disease is difficult to recognize at necropsy if one is not cognizant of the clinical features during life and if the myocardium, especially in the region of the base of the valves and papillary muscles, is not carefully examined microscopically for the pathognomonic submiliary nodules of Aschoff. The other lesions usually associated with acute articular rheumatism, pleuritis, pericarditis and verrucous endocarditis, may be seen in other conditions; the latter may occur as a terminal manifestation in many chronic diseases.

#### REPORT OF CASE

*History.*—A man, aged 26, a soldier, was admitted to the surgical service complaining of pain of three days' duration in the umbilical and both lumbar regions. The history was essentially negative except for an attack of influenza in 1918. There had been no rheumatism. The present illness was ushered in by a severe chill lasting five or six hours followed by fever and profuse sweating. Three hours later, the patient experienced severe cramplike pain, aggravated by motion, in the region of the umbilicus and the right lower quadrant and both lumbar regions. There was vomiting on the first day of his illness following the ingestion of castor oil.

*Examination.*—On admission to the hospital, the patient appeared acutely ill; the temperature was 103.4 F.; respiration, 28, and the pulse, 92. There was diffuse abdominal tenderness, most marked over the upper portion of the abdomen. There was no rigidity, however. The patient appeared to be sensitive to touch over the body, and this was especially marked over the larger joints. There was, however, no redness, swelling or other local evidence of any inflammatory process in the joints. Scattered over the dorsum of the right wrist and right ankle were several pea-sized, tender, erythematous areas. Examination of the heart revealed a soft mitral systolic murmur and an accentuated and reduplicated pulmonary second sound. There was no evidence of cardiac enlargement. The urine showed a moderate trace of albumin. The white blood count was 32,400; 85 per cent. polymorphonuclears and 15 per cent. lymphocytes.

*Clinical Course.*—The temperature ranged between 103 and 104 for the first three days, and then gradually subsided; with the fall in temperature, the abdominal signs and symptoms disappeared. Five days after admission, there was a recurrence of the abdominal pain, and, in addition, marked abdominal distention, especially involving the stomach. There was no evidence of peristaltic movements, but there was diffuse tenderness, most marked over the umbilical region and in the flanks. The bowels were constipated, but there was no vomiting. The temperature ranged between 101 and 103. The joint symptoms gradually subsided, and over the left lower chest posteriorly there were noted signs indicative of fluid. Exploratory thoracentesis yielded some pale, slightly turbid fluid containing many epithelial and mononuclear cells and a

few polymorphonuclears, but no organisms on smear or culture. The following day, signs of a moderate effusion at the right base were noted, and the abdominal signs and symptoms gradually subsided. The blood culture was sterile on two occasions. The temperature then ranged between 99 and 101, and one week after admission there was marked swelling and tenderness of the right wrist joint and, in addition to a mitral systolic murmur, a faint but distinct aortic diastolic murmur was heard. The other peripheral vascular phenomena of aortic regurgitation, namely, Corrigan pulse, pistol shot, and capillary pulse, were present. There was no evidence of cardiac enlargement. At this time, the white blood count was 27,600; 84 per cent. polymorphonuclears and 16 per cent. lymphocytes. Ten days after the detection of the aortic diastolic murmur, a pleurocardial friction sound was heard to the left of the sternum. The respirations became more embarrassed, and the patient complained of severe epigastric and precordial distress. The left wrist became swollen and tender, and the following day a to-and-fro shuffle-board pericardial friction sound was detected to the left of the sternum in the second and third left interspaces. This murmur varied in character and intensity from day to day, and on several occasions disappeared entirely. The area of cardiac dullness increased in size, and there was flatness, bronchial breathing and bronchial voice and subcrepitant râles over both bases. The face became puffy, and the ankles and feet were edematous. The urine showed a moderate trace of albumin, and a few granular and hyaline casts, and many red and white blood cells. The chest was aspirated on several occasions, and 700 c.c. was removed from the right chest, and 800 c.c. from the left. The patient became more and more dyspneic, the pulse ranged between 120 and 140, the temperature remained between 98 and 100, and the patient died on the sixty-sixth day of his illness, the temperature at no time exceeding 104 F.

*Treatment.*—In the management of the patient, the following measures were resorted to: For the attacks of abdominal pain and distention, hot turpentine stupes were applied, and high hot colon irrigations and gastric lavage were given. For the arthritic manifestations, salicylates, 20 grains (1.3 gm.) in combination with sodium bicarbonate, 40 grains (2.6 gm.) were administered every four hours for four days. Oil of wintergreen was applied to the affected joints. Tincture of digitalis was employed with the onset of the cardiac signs and symptoms, and sedatives of the bromid and morphin groups were given for the nocturnal restlessness. Thoracentesis, as mentioned above, was done to relieve the mechanical embarrassment of the heart action.

#### COMMENT

The case presented several very unusual clinical features. The abrupt onset with severe abdominal pain, simulating very closely an acute surgical condition, is not common. The abdominal pain in this disease may be a referred pain from a rheumatic diaphragmatic pleurisy, or, very occasionally, it may be part of the syndrome of Henoch's purpura. No eruption other than an erythema was noted, and there was no blood in the stools. Abdominal pain has also been observed as the initial symptom in a few of our cases of rheumatic pericarditis.

The high fever, leukocytosis and constitutional symptoms out of proportion to the arthritic manifestations were other striking features in this patient. The same phenomena were observed in several of the cases during the past season. The renal complication will be considered later. Another curious feature was the difficulty in differentiating this disease from sepsis. The irregular fever, high leukocytosis, the appearance of an aortic diastolic murmur, and the joint manifestations suggested that diagnosis, but the appearance of so typical a complication as pericarditis with associated pleurisy pointed to acute articular rheumatism. Pericarditis is very rare in sepsis, unless it is secondary to myocardial infarction, or a complicating terminal pneumonia. The absence of splenic enlargement and of any evidence of embolic mischief were against a septic condition. It is unlikely that embolism ever takes place in acute rheumatic fever because of the firm consistency and small size of the vegetations.

The necropsy revealed the anatomic findings associated with acute rheumatic fever. Each pleural cavity contained about 200 c.c. of yellow, slightly turbid fluid. Loose pleuro-

\* From the Wards of the First Medical Division (Columbia University) Bellevue Hospital.



pericardial adhesions were present. The most interesting findings were in the heart and kidneys. The visceral and parietal layers of the pericardium were loosely adherent, and on being separated, left a rough, ragged hemorrhagic surface. There was no evidence of free or sacculated fluid. The mitral valve showed the typical fine, beadlike vegetations along the line of closure, and similar wartlike nodules were present on all the cusps of the aortic valve. The tricuspid and pulmonary valves were normal. None of the valves showed any evidence of an old valvulitis. There was no thickening, scarring or retraction of any of the leaflets. The heart muscle was very flabby, and was pale, brownish red. Microscopic examination of the myocardium revealed the pathognomonic histologic findings of this disease, namely, the submiliary nodule of Aschoff. This peculiar cellular response occurs only in cases of acute articular rheumatism, and in this case they were strikingly numerous and widely distributed. They are found especially along the smaller vessels and, as Aschoff originally pointed out, are closely related with the adventitia. The characteristic cell is a large, clear cell with a large, pale, vesicular nucleus, often multiple and containing a prominent nucleolus. In the neighborhood of these large cells, there are also many large and small mononuclear cells and a few polymorphonuclears. A few showed scattered eosinophils. The rest of the myocardium appeared normal. The vessels appeared patent throughout.

The origin of these large cells constituting the Aschoff body is still a matter of controversy. Aschoff's original contention was that they were derived from the adventitial wandering cells. Others believed they arose from the intramuscular connective tissue cells. Recently, Whitman and Eastlake brought forth some evidence that in certain cases they result from the degeneration and proliferation of the nuclei of the muscle-cells, having observed the presence of striae at the periphery of the cell. They believe that the process may begin as a minute infarct, but this is quite unlikely in view of the absence of embolic disorder elsewhere. The Aschoff bodies are probably the forerunners of the scattered areas of scar tissue so frequently encountered in old rheumatic hearts. They have as yet not been reproduced experimentally, though similar lesions, so-called Bracht-Wachter bodies, consisting of a focalized collection of connective tissue cells with lymphocytes, have been noted (by Cecil, Thalheimer and Rothschild, and others) in the heart muscle of animals injected intravenously with *Streptococcus viridans*. Bracht and Wachter have produced such lesions in rabbits with intravenous injections of streptococci isolated from cases of acute articular rheumatism. Schloss and Foster have also produced such lesions in monkeys following injections of hemolytic streptococci. But in none of the experiments and also in none of the human cases of endocarditis, other than rheumatism, did the myocardium show cellular deposits which were histologically comparable to the Aschoff body, except in their focalized character.

The alterations in the kidneys were also very striking. Except for slight fibrous thickening of the capsule, the glomeruli appeared normal. The changes were confined chiefly to the tubules and to the interstitial tissue, especially of the medullary portion. The lining epithelium of the tubules showed varying stages of disintegration, and the lumen was filled with red blood cells, casts and polymorphonuclears and lymphocytes. Scattered throughout the interstitial tissue, there were innumerable foci of lymphocytes and plasma cells, and in some places there was a considerable accumulation of polymorphonuclear cells. The lesion appears to be a combined acute tubular and interstitial nephritis, not unlike Delafield's acute exudative nephritis, or the type of renal lesion that Councilman has described in cases of scarlatina and other acute infectious diseases. This picture is entirely different from the renal lesion in cases of bacterial endocarditis in which the glomeruli are chiefly involved. Various writers have pointed out the not infrequent association of chronic cardiovalvular disease with chronic interstitial nephritis. Though in some cases this may be a mere coincidence, it is not unlikely that the renal lesion may represent repeated mild and possibly unrecognized attacks by the rheumatic virus, just as the old endocardial lesions are usually the end-result of one or more attacks of acute rheumatic endocarditis.

## SUMMARY

The case reported is one of acute rheumatic fever terminating in death on the sixty-sixth day. The course of the disease was unusual. The onset suggested an acute abdominal condition and, though the constitutional symptoms were pronounced, and cardiac, pleural and renal involvement occurred, arthritic manifestations were slight. The clinical diagnosis was confirmed by the finding of Aschoff bodies in the myocardium.

## A CASE OF OSTEOMYELITIS OF THE FIRST LUMBAR VERTEBRA

GEORGE BRAUNLICH, M.D., DAVENPORT, IOWA

M. C., aged 15, a schoolboy, referred to me, Dec. 29, 1921, had jumped from a wall about 10 feet (3 meters) in height, about December 15, landing on his feet. He complained of severe pain in the lumbar spine at that time. This pain gradually disappeared. About December 22, after being active for a week, he again complained of severe pain in the lumbar region. At this time he was unable to move his legs or to pass urine. As well as I can make out from careful questioning, this paralysis came on very suddenly on about December 22. I had the patient removed to Mercy Hospital, December 29.

Next day the patient was very restless and apprehensive as to his condition. His head was drawn back. The legs were resting on pillows. The slightest touch caused him to groan. The pupils reacted to light and accommodation. Other eye signs were negative. The throat, lungs and heart were normal. The abdomen was moderately distended and rigid. There was no tenderness, except for general hyperesthesia. All the reflexes in the lower extremity were absent. He was unable to move his legs or wriggle his toes. There was slight movement in the adductor group of muscles when he attempted to move his legs. Sensation of heat, cold and touch were everywhere present. There was marked tenderness on pressure everywhere in the lumbar region. The patient could be moved from the supine position only with great difficulty because of pain in the back. The leukocyte count was 54,200. Examination of the urine revealed albumin, pus and bacteria. The patient had been catheterized twice daily for a week. Lumbar puncture yielded fluid apparently not under pressure. Only 6 c.c. was obtainable. The fluid was amber and clear. It coagulated to a solid jelly in about five minutes. No cells or bacteria could be found on microscopic examination. Roentgen-ray examination of the spine, December 31, revealed a faint, indefinite shadow extending along the spine on both sides. Nothing wrong with the vertebrae was detected. The roentgenogram was rather unsatisfactory because the intestine could not be thoroughly emptied. There was a gradual accumulation of feces in the intestine. The bowels moved somewhat after cathartics and enemas, but the patient had no control over his bowels.

The temperature from Dec. 29, 1921, to Jan. 1, 1922, varied between 101 and 103; the pulse, from 96 to 122; respiration, from 22 to 36. January 2, the temperature began to go up. At 7 p. m. the axillary temperature was 105. The respiration rate was 44. The respiration then began to be labored. He died at 10:30 p. m.

A partial necropsy was held, January 3. The body had been embalmed the night before.

An incision was made in the back along the spines of the vertebrae. In the lumbar region pus began to appear before the vertebrae were reached. The lumbar muscles were infiltrated with pus. There was pus along the entire spine from the sacrum to the skull. The spine was opened and pus was found within the spine along its entire length. This pus was outside the meninges. Within the meninges was a small amount of clear fluid. The meninges and cord were not inflamed. The body of the first lumbar vertebra was necrotic. Pus also extended in front of the spine along its entire length. Microscopic examinations were not made, as we promised the boy's mother to remove nothing from the body.

## SUMMARY

A slight injury to the spine due to a jump from a wall caused osteomyelitis of the first lumbar vertebra. Pus from



this vertebra burrowed both anteriorly and posteriorly along and within the spine, but remained outside the meninges. Pressure on the cord by this pus caused paralysis of the legs and bladder. This pressure on the cord also caused the rather unusual spinal fluid changes. As this pus rose within the spine, pressure on the medulla affected the respiration and temperature centers, causing death.

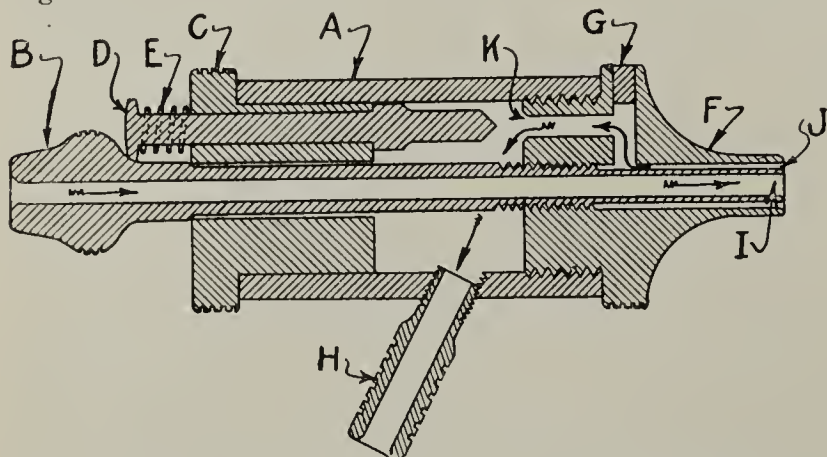
203 Security Building.

#### RETURN FLOW URETHRAL IRRIGATING TIP FOR ANTERIOR URETHRA OR BLADDER IRRIGATIONS

DANIEL E. SHEA, M.D., HARTFORD, CONN.

Director, Bureau of Venereal Diseases, Connecticut State Department of Health; Acting Assistant Surgeon, U. S. Public Health Service

Several years ago I endeavored to perfect a urethral irrigating tip which would wash out the anterior urethra, and allow the waste solution to return without removal of the tip. At that time we had such an instrument, but it did not prove practical, and the idea was abandoned. Recently I resumed work on this idea, and the accompanying sketch is a practical tip which may be used for irrigating the urethra, and, by a simple adjustment, it may be used for bladder irrigations.



Return flow urethral irrigating tip: A, cylinder shell; B, solution carrier which is attached to irrigating tube; C, removable top which seals tip; D, control valve which shuts off return flow; E, spring which releases control valve; F, tip which is inserted into urethra; G, plug which prevents return flow from leaking; H, return flow outlet; I, inlet through which solution reaches urethra; J, outlet through which returning solution flows; K, valve seat which receives control (D) and shuts off return flow. The material is of heavy brass, nickel plated.

The working principle of this instrument is as follows: The tip is attached at B to a rubber tubing which runs from the receptacle containing the solution to be used. The solution flows through the carrier B, entering the urethra at I, the point F being inserted at the meatus. The return flow from the urethra enters the chamber through J and flows out at the point H into the sink or a basin. To force the solution into the posterior urethra and bladder, the valve D is pressed with the finger, and seats itself at K, preventing the solution from returning.

The instrument, which consists of five parts, may be taken apart, allowing it to be cleaned and sterilized when needed. The five parts are A, B, C, F and H.

54 Church Street.

#### METHOD FOR ANCHORING RADIUM IN CARCINOMA OF THE LARGE BOWEL

J. RAWSON PENNINGTON, M.D., CHICAGO

In carcinoma of the rectum and pelvic colon, application of radium on a flexible rod is unsatisfactory, especially if the growth is at the upper portion of the rectum, the rectosigmoid junction, or the pelvic colon itself. When the carcinomatous stricture is of small caliber, one may suppose the radium is well up in the mass, when as a matter of fact it merely impinges against the lower edge. There is a similar difficulty when one endeavors to carry it down from a colostomy opening.

To overcome these objections, I passed a beaded seton through the pelvic colon and rectum beyond the colostomy. In this instance the distance from the verge of the anus to the nearest edge of the growth was 4 inches (10 cm.). Accordingly, a piece of braided silk of sufficient length was taken, and threaded through half a dozen perforated buckshot; the latter were tied 4 inches apart, and the radium attached to the seton. Now, by pulling on the opposite end, the radium was located in one sitting on the proximal, and—in the next—at the distal extremity of the carcinomatous mass.

With the present method of strapping the tube to the body after locating its site accurately, the tube may move, and there is no assurance that it will remain where the destructive action is to be exerted. Again, if radium is fixed to the body, the peristalsis may change the relation between the growth and the radium, as may contraction of the sphincter and the levator ani, though when the bowel is severed, as in colostomy, the peristalsis is modified if not entirely dissipated. By the plan proposed here, after the distance of the growth from either the colostomy or the anal opening has been determined, the radium can be readily placed and maintained in the exact position desired, with no inconvenience to the patient. Bismuth emulsion may be injected through the stoma to disclose irregularities in the ulcerated walls of the bowel.

The objection to radium and roentgen rays in deep-seated structures has been that of passing the rays through the intervening healthy tissues. By this method the radium is in direct contact with the growth. The same principle might be employed in carcinoma higher up in the colon—a cecostomy first being done, and a seton next being passed through the entire colon and rectum. In carcinoma of the esophagus or stomach, a stoma might be made in the latter; or the seton might be passed through the nasal cavity and mouth for the same purpose.

A few precautions are necessary for this apparently novel procedure: The colostomy should be made with a distinct spur preparatory to closing the stoma if the radium treatment is successful. Both ends of the radium container must be fastened to the seton, and the latter must not be removed until the treatment is finished.

31 North State Street.

#### EPITHELIOMA OF THE LIP

ELMER D. TWYMAN, M.D., KANSAS CITY, MO.

Standard textbooks on surgery advise removal of the local lesion in cases of lip cancer by a V-shaped incision through all the thicknesses of the lip in a vertical direction. This method does not take into account the observation that is the gist of this communication: that the trend of growth in cancer of the lower lip is outward and downward rather than directly downward, and that the usual metastasis is to the submaxillary rather than to the submental group of lymph glands.

If my conclusion, based on observation of forty-four cases, will hold for even the majority of such tumors, it should follow that the fact has not escaped the many shrewd observers of cancer who have much more material at their disposal and in that sense is not a new observation. However, if it is even measurably true, it can justly be said that the fact has not received enough attention and has not been sufficiently considered in the above-mentioned method of removal by surgical means. It is evident that involved tissue may be left in the lateral inferior angle of the wound unless the V removed is quite extensive and takes much more tissue below than is necessary. Indeed, several of the more extensive plans of removal bear marks of having been planned more with the idea of facilitating the closure of the defect than of considering what resection would give the least danger of recurrence. With this idea in mind I have tried to record the facts observed in the cases that I have been fortunate enough to see, and I have prepared a tabulation which, of course, is too dogmatic. It shows the following:

The body of the tumor (epithelioma of the lower lip, beginning at the mucocutaneous junction), presumably formed by



contiguous growth, spreads outward and downward on the mucous membrane side, or inner aspect of the lip, and can often be seen or palpated under the mucosa, sometimes as far as the alveolar process. This contiguous growth is in the direction of, or parallel to, or perhaps directly in the lymph trunks leading to the submaxillary glands. The usual metastasis is to the submaxillary glands first rather than to the submental group.

The different layers of the lip are unequally involved. The growth tends to spread on the inner side rather than on the skin side. The fascia covering the muscularis seems to be the cleavage line. As has been frequently noted, the chin is seldom involved, even in late cases.

Exceptions to these rules have been seen in those cases that have been treated with pastes, or other escharotics, or when long standing with infection has produced ulceration, so that growth extends on the skin side, and much of the lip is destroyed or involved, and the submental glands are also infected. Other exceptions include cases treated by operation with recurrence, or by the insertion of radium needles, or other sources of the formation of scar tissue or opening of new spaces. Scar tissue, like cartilage (as observed by Sutton), seems to act as a framework, or ladder, for the growth of epithelial recurrence. If the spaces on the skin side of the lip have been opened, as by the action of a paste, the body of the growth may proceed superficially along the trunks leading either to the submaxillary glands or to the submental group in the same manner as a growth originating in a skin mole. In a case of the latter kind, however, I was able to demonstrate that it was not the whole thickness of the lip that was involved, but only the layers down to the muscularis (a converse demonstration of the thesis as regards the lip type that grows primarily toward the mucous side).

Direct inspection and palpation are usually sufficient to determine the facts in a given case, and should be used in determining the field and scope of operation, or of treatment if radium or irradiation is to be used.

416 Argyle Building.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**ANIMAL EPIDERMAL EXTRACT ALLERGENS-SQUIBB.**—Powders representing the alkali-soluble protein from the hair and epidermis of animals or from the feathers of fowls.

**Actions and Uses.**—Animal Epidermal Extract Allergens-Squibb are employed for the diagnosis of asthma or perennial rhinitis. The patient's susceptibility may be tested in the same manner as that employed for pollen extracts. They are not intended for treatment.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patents or trademarks.

**Burro Dander Allergen-Squibb.**—The protein from the dander of the burro.

**Burro Hair Allergen-Squibb.**—The protein from the hair of the burro.

**Cat Dander Allergen-Squibb.**—The protein from the dander of the cat.

**Cat Hair Allergen-Squibb.**—The protein from the hair of the cat.

**Chicken Feathers Allergen-Squibb.**—The protein from the feathers of the chicken.

**Cow Dander Allergen-Squibb.**—The protein from the dander of the cow.

**Cow Hair Allergen-Squibb.**—The protein from the hair of the cow.

**Dog Dander Allergen-Squibb.**—The protein from the dander of the dog.

**Dog Hair Allergen-Squibb.**—The protein from the hair of the dog.

**Duck Feathers Allergen-Squibb.**—The protein from the feathers of the duck.

**Goose Feathers Allergen-Squibb.**—The protein from the feathers of the goose.

**Horse Dander Allergen-Squibb.**—The protein from the dander of the horse.

**Horse Hair Allergen-Squibb.**—The protein from the hair of the horse.

**Rabbit Dander Allergen-Squibb.**—The protein from the dander of the rabbit.

**Rabbit Hair Allergen-Squibb.**—The protein from the hair of the rabbit.

Burro Dander Allergen-Squibb, Burro Hair Allergen-Squibb, Cat Dander Allergen-Squibb, Cat Hair Allergen-Squibb, Chicken Feathers Allergen-Squibb, Cow Dander Allergen-Squibb, Cow Hair Allergen-Squibb, Dog Dander Allergen-Squibb, Dog Hair Allergen-Squibb, Duck Feathers Allergen-Squibb, Goose Feathers Allergen-Squibb, Horse Dander Allergen-Squibb, Horse Hair Allergen-Squibb, Rabbit Dander Allergen-Squibb and Rabbit Hair Allergen-Squibb are prepared by the following method:

The finely divided hair, dander or feathers are extracted with 0.2 per cent. sodium hydroxide solution, and hydrochloric acid is added to the filtered solution until the iso-electric point of the dissolved protein is reached. The precipitate is collected on a filter, washed and dried with acetone.

**BACTERIAL ALLERGENS-SQUIBB.**—Protein extracted from bacterial cells.

**Actions and Uses.**—Bacterial proteins have been used cutaneously for the diagnosis of anaphylaxis to the metabolic products from specific bacteria. Their utility is debatable.

Manufactured by E. R. Squibb & Sons, New York. No U. S. patents or trademarks.

**Bacillus Coli Allergen-Squibb.**—The protein from *Bacillus coli*.

**Bacillus Pertussis Allergen-Squibb.**—The protein from *Bacillus pertussis*.

**Bacillus Typhosus Allergen-Squibb.**—The protein from *Bacillus typhosus*.

**Catarrhalis Allergen-Squibb.**—The protein from *Micrococcus catarrhalis*.

**Gonococcus Allergen-Squibb.**—The protein from the gonococcus.

**Pneumococcus-I Allergen-Squibb.**—The protein from the pneumococcus Type I.

**Pneumococcus-II Allergen-Squibb.**—The protein from the pneumococcus Type II.

**Pneumococcus-III Allergen-Squibb.**—The protein from the pneumococcus Type III.

**Pneumococcus-IV Allergen-Squibb.**—The protein from the pneumococcus Group IV.

**Staphylococcus Albus Allergen-Squibb.**—The protein from *Staphylococcus albus*.

**Staphylococcus Aureus Allergen-Squibb.**—The protein from *Staphylococcus aureus*.

**Streptococcus Pyogenes Allergen-Squibb.**—The protein from *Streptococcus pyogenes*.

**Streptococcus Viridans Allergen-Squibb.**—The protein from *Streptococcus viridans*.

Bacillus Coli Allergen-Squibb, Bacillus Pertussis Allergen-Squibb, Bacillus Typhosus Allergen-Squibb, Catarrhalis Allergen-Squibb, Gonococcus Allergen-Squibb, Pneumococcus-I Allergen-Squibb, Pneumococcus-II Allergen-Squibb, Pneumococcus-III Allergen-Squibb, Pneumococcus-IV Allergen-Squibb, Staphylococcus Albus Allergen-Squibb, Staphylococcus Aureus Allergen-Squibb, Streptococcus Pyogenes Allergen-Squibb and Streptococcus Viridans Allergen-Squibb are prepared by the following method:

Seed tubes are inoculated from stock cultures, and seed agar bottles are inoculated from seed tubes. After twenty-four hours' growth, the seed bottles are examined for purity of culture, the bottles washed off with 0.4 per cent. cresol and physiological solution of sodium chloride. The contents are centrifuged and the liquor decanted. The organism is rewashed and centrifuged again. The organism is extracted with 0.2 per cent. sodium hydroxide solution, filtered and the filtrate is brought to the iso-electric point of the protein by the addition of hydrochloric acid. The purified bacterial protein is filtered off and dried with anhydrous acetone.

Bacterial Allergens-Squibb are white powders; insoluble in water, salt solution, or acid, but readily soluble in dilute alkali.

**Infant Mortality Under One Year.**—Approximately 48 per cent. of all deaths under 1 year of age in the registration area for 1919 occurred during the first month of life—43 per cent. from natal and prenatal causes; 20 per cent. from gastrointestinal diseases; 15 per cent. from respiratory diseases; 10 per cent. from epidemic diseases; 12 per cent. from all other causes.—M. Knowlton, *Pub. Health Rep.* 36:2305, 1921.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, FEBRUARY 4, 1922

## ACTION OF MAGNESIUM SULPHATE ON THE GALLBLADDER

In 1917, Meltzer,<sup>1</sup> in connection with a study of the physiology of the neuromuscular reflexes of the alimentary tract, observed that when solutions of magnesium sulphate were applied directly to the duodenal mucosa, there was an apparent relaxation of the sphincter at the papilla of Vater; within a short time there was a contraction of the muscle bundles in the gallbladder wall, followed by a discharge of bile into the duodenum. This phenomenon was in keeping with his law of contrary innervation.

Lyon<sup>2</sup> used the method described by Meltzer as a means of diagnosis in diseases of the gallbladder, making a study of the amount, color, character, cytology and bacteriology of the bile expressed, and emphasized also the therapeutic value of the procedure. His five reasons for accepting the method were that: (1) the law of contrary innervation was correctly applicable to the biliary apparatus; (2) the color and viscosity of the bile obtained in the second aspiration (so-called "B" bile) strongly suggested that it came from its storage chamber within the gallbladder; (3) the "B" bile from diseased gallbladders is sometimes thick and tarry, containing mucopurulent flakes, pus cells and bacteria; (4) in cholecystectomized animals, "B" bile is not obtained by any of the aspirations; (5) in patients with gallbladder disease treated by this method, a marked improvement had been noted.

Recently Bassler, Luckett and Lutz<sup>3</sup> have studied the Meltzer-Lyon method, particularly in order to test the claims advanced by Lyon. Introducing magnesium sulphate with a tube into the duodenum, under direct observation, in patients undergoing operations on the biliary apparatus, there was no indication that the sulphate solution caused any sphincteric relaxation, gallbladder contraction, or even partial emptying of the

gallbladder. They also found that the specific gravity of the bile was so elevated by the magnesium sulphate solution that any estimations as to its viscosity are of no value; the color change to the "B" bile was so irregular and ill defined that it could not be concluded that the "B" bile comes from the gallbladder. Furthermore, as is well known, in cases of biliary infection, bacteria and inflammatory cells are commonly encountered in bile from all parts of the tract. The assertion by Lyon that cholecystectomized animals do not have the darker, more viscous "B" bile was contradicted by the results of special new experiments on animals. The specific action on the papilla of Vater and the gallbladder claimed for solutions of magnesium sulphate is denied because solutions of various inorganic salts (sodium sulphate, sodium phosphate, magnesium citrate), 5 per cent. peptone, 0.5 per cent. hydrochloric acid, and food, all may stimulate a flow of bile when introduced into the duodenum; in fact, 0.5 per cent. hydrochloric acid caused a greater flow of bile than magnesium sulphate or the other solutions. They suggest that the deeper color of the "B" bile is due to oxidation and not to concentration in the gallbladder. Bassler and his co-workers also mention some recent experiments on dogs in which methylene blue was injected into the gallbladder; during digestion, which stimulates a flow of bile into the duodenum, there was no flow from the gallbladder, the bile evidently coming directly from the liver.

Dunn and Connell<sup>4</sup> report observations on a patient who had a hepatoduodenostomy, and in whom, the gallbladder and common bile duct being absent, a catheter was so placed that it led through a fistula into the duodenal recess into which the liver poured its secretions. Now, by introducing magnesium sulphate solution directly into the duodenum through the catheter, they obtained the typical "B" bile in the usual sequence. They conclude from this experiment that it is not necessarily true that the "B" bile represents gallbladder bile, or that it is possible to localize disease of the biliary tract on the evidence afforded by the Lyon-Meltzer method of bile segregation.

In contrast to these views, Smithies, Karshner and Oleson<sup>5</sup> have defended the Meltzer-Lyon method. In answer to the criticism that no gallbladder contraction is noted under direct observation at operation, they contend that contractions of the fine muscle bundles of the gallbladder could not be seen by the surgeons, and that one could not expect normal physiologic function in completely anesthetized persons. Their defense is based on experiences with the clinical application of the method.

An interesting phase in bile tract physiology is involved, and the question whether the gallbladder is

1. Meltzer, S. J.: The Disturbances of the Laws of Contrary Innervation as a Pathogenic Factor in the Diseases of the Bile Ducts and the Gall Bladder, *Am. J. M. Sc.* **153**: 469 (April) 1917.

2. Lyon, B. B. V.: Diagnosis and Treatment of Cholecystitis and Cholelithiasis by a Method of Physiological Drainage, *Am. J. M. Sc.* **160**: 515 (Oct.) 1920.

3. Bassler, Anthony; Luckett, W. H., and Lutz, J. R.: Some Experiments with the Meltzer-Lyon Method of Draining the Biliary System, *Am. J. M. Sc.* **162**: 674 (Nov.) 1921.

4. Dunn, A. D., and Connell, Karl: Report of a Case of Hepatoduodenostomy, *J. A. M. A.* **77**: 1093 (Oct. 1) 1921.

5. Smithies, Frank; Karshner, C. F., and Oleson, R. B.: Non-surgical Drainage of the Biliary Tract, *J. A. M. A.* **77**: 2036 (Dec. 24) 1921.



a storage chamber for bile to be used as needed or an apparatus for equalizing the pressure in the biliary tract comes to the front once more. If the specific action of magnesium sulphate on the flow of bile, as claimed by Meltzer, is denied and its action in stimulating the flow of bile is merely like that which takes place in digestion, it is evident that the claims advanced for the diagnostic and therapeutic value of the application of this salt to the duodenal mucosa must be modified, if not abandoned altogether.

#### PENETRATION OF THE TISSUES BY HEAT

When we put an icebag or a hot application on the skin, how deep does the temperature influence penetrate? Obviously, this will depend largely on the rapidity of the circulation of the blood in the part to equalize temperature changes, and the thickness of that great insulating material, fat tissue, underlying the application. Exact determinations of such an influence are difficult in the human subject, but in animals it is possible to bury thermocouples in the tissues and measure accurately the slightest temperature changes. Macleod and Taylor<sup>1</sup> have been conducting investigations of this sort, with results that are of interest to those who apply heat or cold to the patient's body.

It was shown that the application of heat to the surface of the thigh causes, in the rabbit, an immediate rise in temperature, which spreads laterally for about 20 mm. (three-fourths inch) and penetrates into the muscles for about the same distance, when the application is about 10 degrees C. (18 F.) hotter than the skin. On heat being applied to the surface of the abdomen, at a temperature difference of 15 C. (27 F.) and over a broader area (one fourth of the abdominal surface), temperature changes were observed to a depth of 75 mm. (3 inches), the lateral spread being 20 mm. (three-fourths inch). That the rise in temperature is mainly dependent on actual conduction of heat through the tissues, and not due to vasodilatation, is evidenced by the fact that the temperature attained in the tissues is considerably above that of the blood, which was recorded in all the experiments by placing a second thermocouple in some deep situation in the body some distance from the place of application of the heat. It is to be considered that the rabbit has usually less subcutaneous fat than the average human subject, and hence the distance of action will presumably be somewhat less in the latter.

The effect produced on the subcutaneous temperature by local cold is marked, and is immediately evident. In observations in which the applicator was at a temperature of from 21 to 23.5 C. (38 to 42 F.) below that of the muscle, there was a fall of from 3.9 to 4.7 C. (7 to 8.5 F.) at a depth of from 11 to 15 mm. ( $\frac{7}{16}$  to  $\frac{19}{32}$  inch) from the surface. The effects when heat or

cold was applied over the important viscera were also investigated, and it was found that it is not possible to cause any significant change in temperature in the liver or kidneys by the local application to the surface of the body over either viscus of applicators that are about 10 or 12 C. (from 18 to 21.6 F.) warmer than the viscus. When the applicator is from 20 to 25 C. (36 to 45 F.) colder than the body, the fall of temperature is marked in the case of the liver, but usually is insignificant in the case of the kidney. When the applications were made to the head, however, it was found that much greater temperature changes were produced in the brain than in the liver or kidney, although less than in the muscle, presumably because the brain is less vascular than the liver and kidney. Application of even moderate degrees of heat—namely, 4.7 and 4.85 C. (8.46 and 8.73 F.) above body temperature—caused a rise of more than 0.5 degree C. (0.9 F.) at a distance of 17 mm. ( $\frac{11}{16}$  inch) from the surface. With the applicator 7.4 C. (13 F.) warmer than the brain, the temperature in the latter rose through 1.5 C. (2.7 F.) at a depth of 13 mm. (one-half inch) and through 0.2 C. (0.36 F.) at 18 mm. ( $\frac{23}{32}$  inch). The results following cold applications are comparable with those following heat, although often even more pronounced. When low temperatures were used, the fall in brain temperature became very marked indeed; thus, it fell through 3.3 and 3.45 C. (5.9 and 6.2 F.) at a depth of about 14 mm. ( $\frac{19}{32}$  inch), when the applicator was at a temperature of about 25 C. (45 F.) below that of the body. These exact figures should be of much significance in therapeutics.

#### ENDOGENOUS URIC ACID

Although uric acid metabolism has lost much of the popularity that it had a few years ago as a subject of discussion, the problems which it represents are still worthy of earnest consideration. As a physiologic end-product of certain chemical reactions in the body, uric acid should attain an importance subsidiary only to that of urea and creatinin, which in turn represent the final stages of still different transformations in the organism. Until the entire story of the chemical changes which result, respectively, in the output of urea, creatinin and uric acid is known, no adequate picture of nitrogenous metabolism can be produced. That these catabolic end-products circulate in the blood ready for elimination by the kidneys is now clearly established; that the renal excretory apparatus sometimes functions so imperfectly as to cause an undue retention of these nitrogenous catabolites is also well known; but precisely how and where they arise from their precursors is still largely a matter for speculation.

A considerable portion of the uric acid excreted in the urine from day to day under ordinary conditions of diet by a healthy person undoubtedly has its origin in purin compounds existing preformed or potentially

1. Macleod, J. J. R., and Taylor, N. B.: *Lancet* 2: 70 (July 9) 1921.



in nucleic acids of the food. Man eats purins which, if absorbed, are eliminated as uric acid. But even when the diet is purin free, as occurs during a regimen consisting of milk and its products, eggs, cereals and many vegetables, or even during a period of fasting, the blood still shows a content of uric acid which finds its way into the urine.

Thus there is a continuous so-called endogenous production of uric acid, regarding which much speculation has been recorded. The output under these conditions is not constant but varies considerably, especially when the food intake is largely varied and even though the latter may have no immediate precursors of uric acid in the form of purin-yielding products.<sup>1</sup> The oldest and most widely quoted theory was formulated by Mares,<sup>2</sup> who attributed the increase in output of uric acid following the consumption of purin-free food to nuclear disintegration, chiefly in the alimentary glands, incidental to the physiologic work of secretion and digestion. Uric acid thus represents, according to Mares, the wear and tear of these glandular tissues. On this hypothesis, when the alimentary glands are resting, the output of uric acid is low; when they are actively synthesizing and secreting digestive fluids, wear and tear is increased, and the production of uric acid is accelerated.

In this country, Mendel and Stehle<sup>3</sup> championed the view that a portion, at least, of the endogenous uric acid may originate from the activity of the alimentary secretory apparatus. Other investigators have debated this conclusion. The latest studies by Rose<sup>4</sup> and his collaborators at the University of Texas lend further support to the view that invariably the consumption of food leads to an increase in the excretion of uric acid. They emphasize the belief already expressed for proteins by Lewis, Dunn and Doisy<sup>5</sup> that one factor in the extra production of uric acid following food ingestion is the general stimulation of cellular metabolism produced by some of the digestion products. When more protein is ingested, the amino-acids that arise are the stimulating agents, and in some instances may actually be direct precursors of uric acid. Under conditions of constant diet and nitrogen equilibrium, the Texas biochemist tells us, purin metabolism, as measured by the uric acid output, proceeds at a fairly constant rate; but this rate may be altered by changes in the character or quantity of food ingested. Amino-acids, and probably digestive (or metabolic) products of carbohydrates and fats, exert a general stimulating action on cellular catabolism, which is manifested by a rise in uric acid elimination following marked increases in

food consumption. Moreover, indirect evidence indicates that perhaps in the case of the amino-acids, they themselves, rather than their nitrogen-free derivatives, are the stimulating agents. Such conceptions throw new light on the origin of a waste substance, often troublesome in the progress of its elimination, which most physicians have come to associate almost entirely with the purins of the diet. The latter are indisputably important as uric acid precursors, but they are evidently not the sole factors that enter into the genesis of uric acid.

#### THE ORIGIN OF "VITAMIN A"

Although information regarding the distribution of those potencies of naturally occurring foods now commonly designated as vitamins is rapidly being accumulated,<sup>1</sup> their origin in nature is by no means understood. Investigators are at present agreed that animals in general are dependent on the plant kingdom for all of the recognized groups of vitamins. In other words, these essential factors in the nutrition of man apparently cannot be synthesized *de novo* in the animal cells or tissues. The food products of animal origin, such as milk and eggs, are indeed among the well recognized natural sources of vitamins. Various animal fats are carriers of vitamin A. What science attempts to assure us at present, however, is that all of these potencies have in ultimate analysis been derived from plant sources by either man or the animal. How, then, do they arise in the plant?

Seeds in general are deficient in vitamin A, the so-called fat-soluble food accessory factor. On the other hand, this is known to be relatively abundant in the green, actively assimilating parts of plant tissues. Perhaps the widespread use of green leaves of various sorts as salads in the diet finds a partial explanation in this fact. Coward and Drummond<sup>2</sup> of University College, London, have attempted to trace the origin of the vitamin A in these cases. According to them there is no increase in this factor when seeds are germinated, nor is there any gain when the latter are etiolated in the dark. Etiolated seedlings and pale colored leaves deficient in chlorophyll apparently do not synthesize vitamin A; on the other hand, green leaves form it in larger amounts. Lower plants, such as marine algae containing chlorophyll, synthesize this dietary factor; others, such as weeds which are differently adapted for photosynthesis, are not so active in this respect; while mushrooms, devoid of pigments which are concerned with carbon assimilation, are almost completely deficient. The vitamin A in green leaves does not appear to be associated with proteins. It may be extracted in the fat removed by solvents, and appears in that fraction of the fat which is resistant to saponi-

1. A comprehensive review of the subject is given by Rose, W. C.: *The Influence of Food Ingestion upon Endogenous Purine Metabolism*, I, *J. Biol. Chem.* **48**: 563 (Oct.) 1921.

2. Mares, F.: *Arch. slav. biol.* **3**: 207, 1887; *Arch. f. d. ges. Physiol.* **134**: 59, 1910.

3. Mendel, L. B., and Stehle, R. L.: *J. Biol. Chem.* **22**: 215, 1915.

4. Rose, W. C.: *The Influence of Food Ingestion upon Endogenous Purine Metabolism*, II, *J. Biol. Chem.* **48**: 575 (Oct.) 1921.

5. Lewis, H. B.; Dunn, M. S., and Doisy, E. A.: *J. Biol. Chem.* **36**: 9 (Oct.) 1918.

1. Eddy, W. H.: *The Vitamine Manual*, Baltimore, Williams and Wilkins Company, 1921.

2. Coward, K. H., and Drummond, J. C.: *The Formation of Vitamin A in Living Plant Tissues*, *Biochem. J.* **15**: 530, 1921.



fication. This is in accord with the latest findings of Steenbock, Nelson and Hart<sup>3</sup> at the University of Wisconsin, who have ascertained that saponified cod liver oil still retains its vitamin potency.

The foregoing considerations on the appearance of vitamin A in the growing plant only at certain stages of its development makes it easier to understand why the diet of the cow is undoubtedly the chief cause of variations in the amount of vitamin A in milk. There is no appreciable variation in the vitamin A content of milk at different seasons of the year, apart from that associated with the different character of the diet ordinarily consumed at those seasons.<sup>4</sup> This confirms what has already been discovered in regard to the variations in the antiscorbutic potency of cow's milk. A few years ago, discussion in regard to milk revolved largely about the question of the breeds of cattle; today the problem of feed is coming into ascendancy in some respects.

### Current Comment

#### MEDICAL HISTORY OF THE WORLD WAR

The first volume of the Medical History of the World War has now appeared: it is designated Volume XV—Statistics. We are informed that other volumes will be issued from time to time in such order as they become available. The present volume is devoted to army anthropology. As is generally known, the size of men has a relation to their ability to carry equipment, to the amount of food required, and to their ability to make long marches; finally, it is a means of identification. In this volume the physical measurements of our troops are compiled and analyzed. It is impossible to review or even to summarize all of the material presented. Many interesting facts become apparent. The mean weight of the first million recruits was 141.54 pounds, whereas at demobilization the average weight was 3 pounds more. The Scotch are the most variable in weight, the Poles the least. The mean circumference of the deflated chest of the first million recruits was 33.22 inches. Recruits from the Northwestern states showed the greatest circumference of chest. The average man wears a 14¾ or a 15 collar. Only 9 per cent. of the men from Florida had blue eyes, whereas in Wisconsin 54 per cent. had blue eyes, showing clearly the influence of the Nordic element. For the United States as a whole, the percentage of blue eyes dropped from 45 per cent. during the Civil War to 28 per cent. at present. Oregon had 28 per cent. blonds; Montana, 23; Utah, 14, and Minnesota and South Dakota, 10 per cent. each. The Gulf states showed less than 1 per cent. of blonds. There is, moreover, a tremendous amount of data as to the relation of various body dimensions to disease and as to the

distribution by states of various physical characteristics. As a source book for those interested along these lines, the book is well nigh indispensable. The editors of our Medical History of the World War are to be congratulated on this excellent sample of what will apparently be a great achievement.

#### THE CAPILLARIES IN SCURVY

The study of scurvy has attained an unexpected prominence since 1907, when Holst and Frölich demonstrated that the chief characteristics of the disease in man can be duplicated experimentally in the guinea-pig by feeding diets deficient in certain nutritive properties now designated as vitamin C. The close analogy or identity between the most prominent symptoms exhibited by the two species is now generally admitted; consequently there is some justification for assuming also a similarity in the pathogenesis of scurvy in man and in the guinea-pig. For the latter, Findlay<sup>1</sup> of the Royal College of Physicians' Laboratory, Edinburgh, has recently demonstrated that in the absence of vitamin C from the diet there occurs, as Bierich<sup>2</sup> earlier suggested, an interference with the nutrition of the capillary endothelium. This is the essential lesion on which the more striking pathologic manifestations are dependent. Owing to degenerative changes in these cells of the vascular system they become swollen, with the result that the passage of the blood corpuscles is delayed. Findlay assumes that the congestion gives rise to increased transudation of fluid through the capillary wall, and finally, as the intercellular substance gradually wears out, to the passage of red corpuscles into the surrounding tissues. Thus the occurrence of the conspicuous hemorrhages is merely incidental to more profound defects. Stagnation of blood in the capillaries in itself leads to imperfect oxygenation and nutritional conditions that ultimately express themselves in severe disorders.

#### THE ANNUAL CONFERENCE ON MEDICAL EDUCATION, HOSPITALS AND PUBLIC HEALTH

An important factor in bringing about improvements in medical education has been the annual conference held under the auspices of the Council on Medical Education each year since 1904. These conferences have provided a forum in which presidents of universities, officers and members of licensing boards and others interested could discuss the reports in regard to conditions in medical schools, proposed standards of preliminary and medical education, revision in the medical curriculum, etc. In the eighteen years since these conferences began, entrance requirements have been increased, stock corporation medical schools have practically disappeared, medical schools generally have been reorganized, and for a score or more of the institutions entirely new plants have been constructed. Although the ideals set forth at the beginning of the campaign have been more than realized, there is still great need that the conferences be continued. As the

3. Steenbock, H.; Nelson, E. M., and Hart, E. B.: Fat-Soluble Vitamine, IX, The Incidence of an Ophthalmic Reaction in Dogs Fed a Fat Soluble Vitamine Deficient Diet, *Am. J. Physiol.* **58**: 14 (Nov.) 1921.

4. Drummond, J. C.; Coward, K. H., and Watson, A. F.: Researches on Vitamin A, VII, Notes on the Factors Influencing the Value of Milk and Butter as Sources of Vitamin A, *Biochem. J.* **15**: 540, 1921.

1. Findlay, G. M.: The Blood and Blood Vessels in Guinea-Pig Scurvy, *J. Path. & Bacteriol.* **24**: 446 (Oct.) 1921.

2. Bierich: *Deutsch. Arch. f. klin. Med.* **130**: 151, 1919.



reorganization of medical schools has progressed new problems have arisen, such as the increased cost of furnishing a medical education, necessary limitation of enrolments, the difficulties of medical practice in rural communities, the unfortunate haste of recent graduates to specialize in their practice, and the need of more public health education. All these matters can be best worked out at these annual conferences. The conference to be held March 6-10<sup>1</sup> will perhaps render even greater service than previous conferences because of the wider scope of the subjects under discussion. It will deal with problems not only of medical education and licensure but also of hospitals and public health.

### INFLUENZA

Reports indicate that there is a somewhat increased incidence of influenza, particularly in New York. Special mention of increased incidence is also made in correspondence from London and Berlin. The history of influenza indicates that recrudescence is to be expected from time to time in various localities following the initial pandemic. The pandemic waves come at irregular intervals of a generation or two and are followed by years of epidemic and sporadic prevalence, the secondary waves occurring at intervals of eight months following the pandemic and the entire cycle lasting about four to six years. The experience of the past indicates, furthermore, that the cases in such recrudescences are less numerous and less severe than in the primary pandemic.

## Association News

### ST. LOUIS SESSION

#### Special Railroad Fares

The Southwestern Passenger Association announces that there will be available for members of the American Medical Association who go to St. Louis for the Annual Session a special rate of one and one-half fares for the round trip, going and returning the same route. To secure this rate, purchasers are required to present an identification certificate. These certificates will be available within a short time. One certificate will enable the member to purchase tickets for himself and for dependent members of his family. Tickets will be sold on the presentation of these certificates from May 16 to 24 inclusive. They must be validated at St. Louis during the days of the session, and the return trip must be completed by June 1, 1922. The minimum excursion fare on presentation of this identification certificate is \$1. Members and Fellows may secure these certificates by writing the secretary of the Association, Dr. Alexander R. Craig, 535 North Dearborn Street, enclosing a self-addressed, stamped envelop.

The Central Passenger Association, the Trunk Line Association, the Southeastern Passenger Association and the Western Passenger Association have also authorized similar special fare tickets from points in their territories.

#### Hotel Reservations

The hotels designated by the Local Committee of Arrangements as headquarters for the several sections were announced in *THE JOURNAL*, Dec. 3, 1921, page 1824. The Local Committee of Arrangements reports that inquiries are being received and that reservations have been recorded daily since that time. The St. Louis hotels and the Convention Bureau are cooperating with the Local Committee of Arrangements in a satis-

factory and helpful manner that assures comfortable accommodations to those attending the Annual Session. The Local Committee of Arrangements, however, requests that, whenever possible, arrangements shall be made for doubling up so that every one who goes to St. Louis may be assigned to comfortable lodgings. Reservations should be made by communicating directly with the hotel at which the member desires to stop. If satisfactory arrangements cannot be made in this way, write to the chairman of the Local Committee on Hotels, Dr. Louis H. Behrens, 3525 Pine Street, St. Louis.

### REFUTATION OF UNWARRANTED CHARGES OF FAVORITISM

The *Journal of the Indiana State Medical Association*, January, 1922, publishes an editorial note which reads:

"A year ago we had occasion to call attention to the fact that some of the A. M. A. officers reserve all of the available rooms at the leading hotels in the city where the annual session of the A. M. A. is to be held, and then parcel out the rooms to their personal friends. As a matter of fact, this is a species of discrimination and unfairness that should be prohibited at future sessions of the A. M. A. The rule 'first come, first served' should prevail, and while the A. M. A. officers may succeed in getting the cream of the hotel reservations, they should not prevent others from having at least a fair show of getting the accommodations desired. We appreciate the fact that there are other hotels in St. Louis where if one 'stands in' with the Chairman of the Hotel Committee, reservations for the St. Louis session may be made, but it is the principle of the thing which arouses our ire. The A. M. A. is a large democratic organization, and it is not supposed to be run in the interest of a few."

The editorial note quoted above is inexcusable because it is contrary to facts that must have been in the possession of the editor of the *Journal of the Indiana State Medical Association* before the number which carries the editorial note was issued. Five letters, three from Dr. Bulson and two from myself, have passed between us with regard to this matter. Dr. Bulson has no warrant for the statement, and he must know that it is untrue, that officers of the American Medical Association "parcel out the rooms to their personal friends." The facts are: During the time that I have been officially connected with the Association, since 1911, tentative reservations have been made each year at one of the hotels in the city in which the next annual session is to be held for the officers of the Association, the members of the Board of Trustees, and the members of the several Councils—the Judicial Council, the Council on Health and Public Instruction, the Council on Medical Education and Hospitals, and more recently for the Council on Scientific Assembly. This procedure was established long before 1911. Such arrangement is necessary in order that the Association may carry on its work at its annual sessions. These reservations have never exceeded fifty rooms; usually fewer have been reserved.

It will be recalled that at the Boston Session of the House of Delegates, it was moved and carried "that the Secretary of the Association reserve for next year a sufficient number of rooms and announce in *THE JOURNAL* that these rooms will be held until ten days before the meeting so that the delegates may secure their reservations through the Secretary. Seconded and carried." This action of the House of Delegates is mandatory, and in compliance therewith, I, as Secretary, made a tentative reservation of rooms for the use of members of the House of Delegates. Even with this additional number of reservations, this year as on previous occasions, great care has been taken to avoid taxing the advertised capacity of any one of the hotels at the place of annual session. To repeat, all these facts were mailed to Dr. Bulson, January 12; the issue of the Indiana journal quoted was received in this office on January 30.

Moreover, the gratuitous suggestion that the chairman of the local Committee of Hotels serves only those who "stand in" with him is an unwarranted insult to the St. Louis physician who, as chairman of that committee, is serving the Fellows of the Association freely and willingly.

ALEXANDER R. CRAIG, Secretary,  
American Medical Association.

1. See tentative program, General News, J. A. M. A. 78: 203 (Jan. 21) 1922.



## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Negro Health Week.**—The national negro health week will be held, April 2-8, at Tuskegee, under the auspices of the Tuskegee negro conference and the National Negro Business League, in cooperation with the U. S. Public Health Service and other similar agencies.

### ALASKA

**Personal.**—Dr. Floyd B. Gillespie, Kennecott, has been appointed a member of the Alaska territorial board of medical examiners, for the third division.

### ARIZONA

**Maricopa County Health Center.**—The Maricopa County Anti-Tuberculosis Society and the Free Clinic were recently amalgamated into one organization under the name of the Maricopa County Health Center. Dr. Warner Watkins was elected vice president.

**County Medical Meeting.**—The El Paso County Medical Society held its annual meeting, December 19, at Juarez. Dr. Walter E. Dandy, Baltimore, gave an address on "Diagnosis of Brain Tumors." The following officers were elected for the ensuing year: Dr. Robert B. Homan, president; Dr. Thomas J. McCamant, vice president; Dr. Edward W. Rheinheimer, secretary-treasurer, and Dr. Paul Gallagher, associate editor of *Southwestern Medicine*.

**Hospital News.**—The old Arizona Hospital has recently been reorganized under the name of the Arizona Hospital and Sanatorium, Tucson.—A home for the resident physician has just been completed at St. Luke's-in-the-Desert Sanitarium, Tucson. Other improvements are also being made.—A new wing to house the operating rooms and the chapel is being constructed at St. Joseph's Hospital, Phoenix.

### CALIFORNIA

**Hospital News.**—The new Vallejo General Hospital, constructed at a cost of approximately \$150,000, will be formally opened, March 15.

**Personal.**—Dr. Thomas E. Shumate, San Francisco, has been reappointed police commissioner.—Col. Guy L. Edie, M. C., U. S. Army, San Francisco, retired from active service, January 18.

### COLORADO

**Personal.**—Dr. Edwin L. Apperson, Denver, has been appointed local consul of the republic of Panama.

**El Paso County Medical Society.**—At the annual meeting of the society, held recently at Colorado Springs, the following officers were elected for the year 1922: president, Dr. Elmer L. Timmons; vice president, Dr. Joseph J. Mahoney; treasurer, Dr. Omer R. Gillett, and secretary, Dr. Claude E. Richmond.

**Medical Society Meeting.**—At the annual meeting of the Medical Society of the City and County of Denver, held recently, the following officers were elected for the ensuing year: Dr. Philip Hillkowitz, president; Dr. Austin G. Case, vice president; Dr. Casper F. Hegner, secretary, and Dr. Clinton G. Hickey, treasurer.

### DISTRICT OF COLUMBIA

**New Casualty Hospital Proposed.**—A bill providing for the construction of a new casualty hospital for the District of Columbia at a cost of \$150,000 has been introduced in the House by Representative B. F. Focht, chairman of the House Committee on the District of Columbia.

**Street Through Walter Reed Hospital.**—A measure providing for the extension of a street through the Walter Reed General Hospital in Washington has passed the Senate. The bill was urged by Surg. Gen. M. H. Ireland of the Medical Department of the Army. There was some difference of opinion in the Senate over the desirability of having a public highway passing through the center of the army hospital property, but it was finally voted on favorably.

### GEORGIA

**Personal.**—Dr. Henry Lonzoe Akridge, Sale City, has been appointed county health officer.—Dr. Charles L. Ridley, Hillsboro, has been elected health officer of Macon.

**Medical Meeting.**—The annual meeting of the Georgia Medical Society of Savannah, was held in Savannah, December 13. The following officers were elected for the ensuing years: president, Dr. Harry Y. Righton; vice president, Dr. Herman W. Hesse, and secretary-treasurer, Dr. E. C. Demmond.

### IDAHO

**Personal.**—Dr. Hyrum A. Anderson, Rigby, has been appointed county physician to succeed Dr. Oel F. Call, who resigned recently.

**Hospital News.**—The U. S. Public Health Hospital Service, Washington, D. C., has authorized the expenditure of \$50,000 to build a unit to the United States Hospital, Boise Barracks.—The Clearwater Hotel, Orofino, has been purchased and remodeled into a hospital.

### ILLINOIS

**Meeting to Draft Milk Ordinance.**—A joint conference between representatives of the state departments of public health and agriculture and the University of Illinois was held in Springfield, February 3, for the purpose of drafting a model milk ordinance to fit conditions as they exist in the various municipalities of the state.

**Physicians Fined for Not Reporting Births.**—It is reported that in connection with the birth registration campaign recently launched by the state department of public health, Dr. Frank A. Olms, Hampshire, and Dr. Ernest N. Scott, Hinsdale, were tried and fined in the local courts for repeated delinquencies in reporting births. The director of public health announces that state's attorneys are working in other districts in a number of cases, and new prosecutions will probably follow.

**Morgan Sanatorium to Open.**—Money has been raised from private sources to purchase equipment and employ the necessary personnel for opening the Morgan County Tuberculosis Sanatorium, which has stood idle since its purchase because of lack of public funds for operation. It is reported that a physician has already been appointed to direct the institution, and that arrangements have been made to accept patients from other counties at a stated rate per week. Tuberculous patients from Morgan County will receive free treatment.

**Laboratory Reports to Be Submitted to Local Authorities.**—In order to assist local authorities in checking up on epidemics and in establishing and terminating quarantine, the diagnostic laboratories of the state department of public health have made arrangements to submit to the local health officer, or the person acting in that capacity, a copy of all laboratory reports on specimens examined in connection with diphtheria, typhoid and paratyphoid fevers, dysentery, malaria, rabies, meningitis, hookworm or other intestinal parasites, septic sore throat, anthrax, glanders and leprosy.

**Personal.**—Dr. Henry P. Beirne, Quincy, has been appointed a member of the state board of medical examiners of Illinois.—Dr. Charles E. Trovillion, Metropolis, has been appointed managing officer of the Alton State Hospital for the Insane, Alton.—Dr. Frederick S. Salisbury, medical staff, Watertown State Hospital, East Moline, has been appointed assistant surgeon at the U. S. Public Health Service Hospital, Waukesha, Wis.—Dr. Elizabeth B. Ball, Quincy, for many years secretary of the Adams County Medical Society, has recently accepted the position of assistant pediatrician in the division of child hygiene and public health nursing of the state department of public health.

### Chicago

**Appropriation to Combat Smallpox.**—The Chicago City Council Finance Committee, January 6, voted \$20,000 for the use of the health department in combating smallpox.

**Building for Physicians.**—It has been announced that plans have been drawn for the construction of an eleven story apartment building for physicians, at a cost of \$450,000, to be finished about October. The building will contain only ten apartments, and will be owned by four physicians.

### INDIANA

**Personal.**—Dr. Amos L. Wilson, Indianapolis, was severely injured, January 8, when the automobile in which he was riding collided with another car and overturned.—The office



of Dr. John I. Rinne, Lapel, was looted, January 10, by a drug addict, who first telephoned the physician's office to ask him to attend a patient 5 miles away.

### IOWA

**Hospital News.**—At the Independence State Hospital, a separate building for tuberculous cases is under construction with a capacity for fifty patients.—A hospital for advanced cases of tuberculosis is now being erected at Oakdale, with a capacity of sixty patients. An appropriation of \$140,000 is available for another building at this place after next July.—An appropriation has been made, available July 1, for a home for forty employees now living at the State Hospital for Epileptics, Woodward, and also to make room to accommodate 100 more patients.—A new tuberculosis building for women will be constructed at the Clarinda State Hospital.

### KANSAS

**Laboratory Workers to Meet.**—The state director of health directed all the medical laboratory workers of the state to meet at Topeka, January 27, with the object of establishing standardized methods in all the laboratories of the state.

### KENTUCKY

**Central Kentucky Conference on Social Hygiene.**—A conference will be held, February 24-25, at Lexington, under the auspices of the department of hygiene and public health at the University of Kentucky, in the interests of education and parents. Speakers for the U. S. Public Health Service, the U. S. Bureau of Education, the American Social Hygiene Association and the Kentucky State Board of Health will be on the program.

**Health Exposition.**—A Health Exposition is being held, February 1-9, at Louisville, under the auspices of the U. S. Public Health Service, State Board of Health of Kentucky, Jefferson County Board of Health and the Health Department of the City of Louisville. It includes exhibits in hospitalization, nursing, dentistry, medicine and pharmacy. The annual convention of the Kentucky State Public Health Association and the annual conference of the city and county health officers are being held at the same time. Dr. Milton J. Rosenau, Dr. Josephine Baker, Dr. William A. Evans, Dr. Frederick R. Green, Dr. Valeria H. Parker, Dr. John Stokes, Dr. Watson S. Rankin and Dr. John Dill Robertson are among the visiting physicians on the program of the Public Health Institute.

### LOUISIANA

**Physicians' Occupational Tax.**—It is reported that a number of physicians of New Orleans have asserted, that if the legislature at its May meeting refuses to repeal the physicians' occupational tax, they will strike to enforce, through the courts, the payment of money alleged to be due on licenses. The occupational tax has been denounced by the board of governors of the Louisiana State Medical Society.

### MARYLAND

**Personal.**—Dr. William B. Dalton, Baltimore, has been appointed superintendent of the South Baltimore General Hospital, to succeed Dr. Robert W. Johnson, who resigned recently.—Edwin O. Jordan, professor of bacteriology, University of Chicago, lectured at the School of Hygiene and Public Health, Johns Hopkins University, on "Interepidemic Influenza," January 30. His lecture is one of the series of the DeLamar lectures on hygiene given at the university.—Dr. Hugh H. Young has sailed from New York on the *Caronia* for the Mediterranean. He will be abroad about two months.—Drs. Samuel J. Crowe and John I. Baylor of the Johns Hopkins Hospital will sail, February 1, for Europe. While abroad, they will visit most of the important hospitals of Europe, where studies of surgical methods in foreign countries will be made. They will return to Baltimore about April 1.

### MASSACHUSETTS

**Hospital News.**—Contracts have been awarded for an addition to the Boston City Hospital at a cost of \$493,000. This addition will increase the outpatient department capacity from 500 to 1,000.

**New Title for Medical Journal.**—It has been announced by the *Journal of Orthopedic Surgery*, Boston, that the name has

been changed to the *Journal of Bone and Joint Surgery*, and that it will be published quarterly, beginning with the January issue.

**Resignations from Medical School of Harvard University.**—Dr. Harold C. Ernst, professor of bacteriology, has resigned, his resignation to take effect at the end of the academic year. Dr. Ernst has been professor of bacteriology since 1895.—Dr. William T. Councilman, professor of pathology since 1892, has resigned, his resignation to become effective at the end of the academic year.

**Boston Medical Library.**—At the annual meeting of the Boston Medical Library, held January 10, the following officers were elected: president, Dr. George H. Monks; vice presidents, Drs. William N. Bullard, Homer Gage and Henry Jackson; secretary, Dr. Walter L. Burrage, and treasurer, Dr. Richard G. Wadsworth. There are 110,827 books and 69,796 pamphlets in the library.

**New England Pediatric Society.**—The seventy-second meeting of the society will be held, February 10, at the Boston Medical Library, under the presidency of Dr. Richard M. Smith. Dr. Edwards A. Park, New Haven, Conn., will give an address entitled "Is There More Than One Kind of Rickets?" and Dr. Lawrence W. Smith, Boston, will read a paper on "The Experimental Feeding of a Vitamin-Deficient Diet, with Especial Reference to Scurvy."

**Proposed Law Governing Motor Vehicles.**—On January 10 a law proposing to require general liability insurance of all owners of motor vehicles was introduced into the legislature of the state of Massachusetts. The law specifies conditions under which injury must occur in order that indemnity be paid and specifies the amounts of indemnity for injuries of various types. The premiums to be charged by insurance companies are subject to the approval of the insurance commissioner.

**Committee on Rural Health and Medical Service.**—The committee held a meeting, January 9, in Boston. The present weakness of purely medical organizations was discussed and the consequent difficulty in meeting so large and complex a problem as that of adequately extending medical service to the many neglected rural districts. It was voted that the committee continue with the object of educating the laity as to the importance of improvement of medical service in rural districts until such time as the Massachusetts Medical Society is prepared to undertake the improvement of this service.

### MICHIGAN

**Physicians Convicted.**—It is reported that Drs. Charles M. George and Charles J. Beaver, both of Detroit, have been convicted of performing illegal operations.

**Convictions.**—Joseph Barris, an advertising doctor of Detroit, was convicted in December and sentenced to six months in the house of correction.—John Serban Capotescu, Detroit, registered as a "drugless practitioner," was convicted, November 1, of practicing medicine without a license.

**Death Rate from Automobile Accidents.**—It has been announced by the Michigan state board of health that 397 persons were killed in the state in 1921, the same number that were killed the preceding year. Of the total killed, 129, practically one third, were children under 16 years of age, 281 boys and 116 girls. Detroit reported 131 deaths, Grand Rapids 15, and the Upper Peninsula 23.

**Department of Health Adds to Reprint Series.**—The Michigan Department of Health, Lansing, announces the publication of three numbers of its reprint series which may be obtained upon request. The series includes: "Comparative Studies of Diphtheria Cultures of Loeffler's Medium with the Original Swabs Transported by Mail," by C. C. Young and Minna Crooks; "The Wassermann Test and Its Interpretation," by R. L. Kahn, and "The Review of the Hillsdale, Mich., Typhoid Fever Epidemic of 1920," by R. M. Olin.

### MISSOURI

**Personal.**—Dr. Stephen V. Bedford, Jefferson City, was elected president of the Cole County Medical Society, at the annual meeting, held recently.

**Medical Society Adopts Resolution Endorsing Bill.**—The St. Louis Medical Society, at its regular meeting, unanimously adopted a resolution endorsing the Watson-Dyer bill providing for the reorganization of the U. S. Public Health Service.

**New Officers for State Board of Health.**—At a meeting held recently in Jefferson City the following officers were



elected: Dr. Rudolph S. Vitt, St. Louis, president, to succeed Dr. Emmet North; vice president, Dr. Ethan E. Brunner, Farmington, and secretary, Dr. Cortez F. Enloe, Jefferson City.

### NEBRASKA

**State Medical Meeting.**—The next annual meeting of the Nebraska State Medical Association will be held, April 24-27, at Omaha.

**Hospital News.**—The contract has been awarded for the erection of a new hospital at the Soldiers' Home, Grand Island, at a cost of \$125,000.—The construction of an addition to accommodate 100 patients, to St. Catherine's Hospital, Omaha, is contemplated.

### NEW HAMPSHIRE

**Centennial of Medical Society.**—The one hundredth annual session of the Center District and Merrimack County Medical Society was held, January 17, at Concord, under the presidency of Dr. Nathan L. Griffin, New London. Dr. James B. Woodman, Franklin, was elected president for 1922.

### NEW JERSEY

**Hospital News.**—A new hospital, to be known as the Physicians and Surgeons Hospital of West Hoboken, has been established at North Hudson.

**Physician's License Revoked.**—December 22, the board of medical examiners found Hannah E. Whitehead guilty of having practiced criminal abortion, and revoked her license to practice medicine and surgery in the state.

**Unlicensed Practitioners Convicted and Fined.**—A report from the state board of medical examiners states that Louis Adler of Newark and Guiseppe D'Amico of Jersey City were recently convicted of practicing medicine without licenses and were fined \$200 each.

### NEW MEXICO

**Personal.**—Dr. Frank E. Tull, Albuquerque, secretary of the New Mexico Medical Society, has removed to Los Angeles. Dr. John W. Elder will assume his duties until the annual state meeting in April, at Gallup.

### NEW YORK

**Hospital News.**—The Hudson City Hospital has been completed, and was formally opened, December 30.

**Hospital Bill Advanced.**—The measure designed to provide that the state hospital for the treatment of discharged soldiers suffering from mental disease shall be open to the care and treatment of all persons and shall be known as the Brooklyn State Hospital, Creedmoore Division, has been advanced to the order of final passage in the Assembly.

**Medical Meeting.**—At the annual meeting of the Medical Association of the Greater City of New York, held, January 16, the following officers were elected for 1922: president, Dr. George L. Brodhead, recording secretary, Dr. E. E. Smith, chairman for the borough of Brooklyn, Dr. Robert E. Coughlin, and chairman for the borough of Richmond, Dr. William Bryan.

**Personal.**—Dr. Frederick C. Sabin, Little Falls, has been appointed city physician to succeed Dr. Karl A. Blum, who resigned recently owing to ill health.—Dr. Walter G. Frey, Astoria, has been elected chairman of the medical board of St. John's Hospital, Brooklyn.—Dr. Agha B. Musa, Webster, who has been engaged in relief work in Russia, is reported ill with typhus fever at Orenburg, Russia.—Dr. Florence L. McKay, recently assistant director, Division of Child Hygiene, Children's Bureau, Department of Labor, has been appointed director of the Division of Child Hygiene, New York State Department of Health.

**New Drug Control Bill.**—A bill has been introduced into the assembly which aims to control the sale, prescribing and dispensing of drugs in New York City. It is similar to the former Whitney bill, except that no department of narcotic drug control is created. Under the new measure, physicians prescribing the drug would be required to issue prescriptions in duplicate, which an apothecary could fill only on receiving, and the apothecary would be required to file one of the prescriptions, in the cities of the first class, with local boards of health, and in other parts of the state with the state department of health. Possession of a hypodermic syringe or a substitute is forbidden. The measure carries an appropriation of \$10,000.

### New York City

**Annex for Roosevelt Hospital.**—Roosevelt Hospital is to have an eight-story addition to its building at Ninth Avenue and Fifty-Ninth Street. The estimated cost of the new structure is \$1,000,000.

**Bronx Hospital for Veterans.**—Plans for remodeling the Bronx Hospital for the treatment of ex-service men have been approved by the Treasury Department. It is hoped to have the hospital ready for occupancy by March 15. There will be 1,800 beds, and the remodeling will cost approximately \$700,000. The hospital will be for the treatment of general diseases.

**Influenza and Pneumonia Mildly Epidemic.**—According to the figures of the health department made public, January 27, the number of cases of influenza reported on that day was 203, as compared with 366 on the preceding day. Health Commissioner Copeland has issued a statement announcing that the city is experiencing a mild epidemic of pneumonia rather than influenza.

### NORTH CAROLINA

**New Plan for County Health Service.**—The Guilford County Medical Society has inaugurated a plan to provide physical examination for every citizen in the county. Each physician in the county has agreed to serve at any time for as long a period as may be required. The command to come from a "steering committee" composed of Drs. John T. J. Battle and William M. Jones, Greensboro, and Dr. William J. McAnnally, High Point. The plan includes the physical examination of every inhabitant of the county and free clinics for all the rural districts and health lectures in schools and churches.

### OHIO

**Personal.**—The staff physicians of the Salem City Hospital, January 10, presented a gold watch to Dr. Rollin M. Schwartz, city and county health commissioner, in appreciation of his services to the community. Dr. Schwartz has resigned as county health commissioner to become health commissioner of Santa Fe County, N. M. His successor has not yet been chosen.—Dr. James B. Gruber, Guilford, and Dr. Frederick W. Dixon, Leetonia, have been elected members of the district board of health of Columbiana.

**Gift to University.**—It is announced by the secretary of the faculty of the Western Reserve University School of Medicine, Cleveland, that in addition to previous gifts to the building fund totaling \$800,000, Mr. Samuel Mather, Cleveland, will provide funds for the erection of the new building of the school of medicine. The estimated cost of the building is \$2,529,700. Plans and specifications are complete, and construction will begin in the near future. Following the completion of the medical school, construction will begin on the Children's Hospital, the Maternity Hospital and the Lakeside Hospital, all of which are affiliated with the school of medicine, and will be situated on the university campus.

### OKLAHOMA

**Smallpox Quarantine.**—The state health officer issued orders, January 9, to quarantine all counties in eastern Oklahoma, bordering on Arkansas, owing to the smallpox situation. Persons leaving trains were quarantined unless able to produce a certificate of recent vaccination.

### OREGON

**Personal.**—Dr. Paul J. Peniston, Portland, who has been in charge of the city bacteriologic laboratory for two years, has resigned and will locate in Hawaii.—Dr. Herbert M. Manning, Biltmore, N. C., has been appointed to take charge of the quarantine station and public health station at Astoria, to succeed Dr. Jay Tuttle.

**Sterilizing Law Before High Court.**—The Oregon state board of health has ordered an immediate appeal to the state supreme court to decide the constitutionality of the state sterilization law as a result of a decision by two Marion County circuit judges that the law was unconstitutional, declaring that methods of legal procedure are not sufficiently defined in the sterilization statute.

### PENNSYLVANIA

**Western Pennsylvania Association of Medical Officers.**—The annual dinner of the Western Pennsylvania Association of Medical Officers of the World War was held in Pittsburgh, December 10.



**State Hospital Association.**—At the meeting of this association held, December 7, at Harrisburg, Dr. Daniel D. Test, superintendent of the Pennsylvania Hospital, Philadelphia, was elected president, and Dr. John A. Drew, Chester, was elected a member of the association.

**Personal.**—Dr. Isadore J. Weida, Emaus, has been elected president of the Lehigh Medical Society.—Dr. Edward Plank was elected president, and Dr. Calvin R. Rickenbaugh, physician, of the Carlisle borough board of health at the meeting held, January 10.—Dr. Harry H. Penrod, Johnstown, was elected president of the Cambria County Medical Society, January 12.

**Tuberculosis Society Meeting.**—The annual meeting and conference of the Pennsylvania Tuberculosis Society took place in the Penn-Harris Hotel, Harrisburg, January 26. This meeting will mark the thirtieth anniversary of the founding of the society, which was the first organization of its kind in America. The death rate from tuberculosis in Pennsylvania has dropped from 133.9 per hundred thousand population in 1909 to 105, for the same population in 1920, declared Arthur M. Dewees, secretary of the Pennsylvania Tuberculosis Society, at the opening of the convention of the society. Dr. Charles H. Keene, director of the bureau of health education of the state department of public instruction, spoke on conditions in the public schools which contribute largely to the sum total of sickness, the number of defectives and the unnecessary deaths in the country.

#### Philadelphia

**College of Physicians of Philadelphia.**—At the annual meeting of the College of Physicians, held, January 4, at Philadelphia, the following officers were elected for the year 1922: president, Dr. Thomas R. Neilson; vice president, Dr. Hobart A. Hare; secretary, Dr. John H. Girvin, and treasurer, Dr. Charles W. Burr.

**To Retain Dr. Deaver.**—The board of managers of the University Hospital will extend the age limit for professors to enable Dr. John B. Deaver to continue as head of the surgical department of the University Medical School. Dr. Deaver will be 67 years old, July 25, and the board of managers was unanimous in the desire to retain him.

**Special Clinics to Be Opened.**—With the establishment in the near future of a special heart disease clinic at the Philadelphia General Hospital, work began by a nucleus of about fifty physicians a year ago will have taken another stride forward. Such clinics were established within the last year at the Presbyterian, Pennsylvania and Mount Sinai hospitals. Others at the University and Polyclinic hospitals, in connection with medical school cardiovascular sections, are of recent date. Before 1923, it is expected that twenty more cardiac clinics will be established in Philadelphia, through the propaganda of members of the Philadelphia Association for the Prevention and Relief of Heart Disease. Clinics are complete with a chief, assistants for examination, diagnosis and history taking, a dentist, a nose and throat specialist, a roentgen-ray operator, a laboratory expert, an electrocardiographer and a social service department, which is a link between the home and exercise classes, and the hospital and convalescents' homes.

**Personal.**—Dr. Marnetta E. Vogt and Dr. Miguela Gemil, a special Chinese student at the Woman's College Hospital, who were with Dr. Ella B. Everitt at the time of her death, were slightly injured in the crash.—Dr. John A. Fordyce, professor of dermatology and syphilology, Columbia University, delivered the annual address at the meeting of the Philadelphia Urological Society, in Thomson Hall, College of Physicians, January 23, his subject being "Prognosis of Syphilis."—Dr. Clemens Pirquet, professor of pediatrics, University of Vienna, delivered an address before the Philadelphia Pediatric Society, January 24, in Cadwalader Hall, College of Physicians, his subject being "The Work of the American Relief Administration in Vienna," and a discussion of certain phases of his nem system of nutrition.—Dr. L. Webster Fox has been reelected president of the Pennsylvania Home Teaching Society and Free Circulating Library for the Blind.—Dr. Hans Zinsser, New York, delivered the seventh Mary Scott Newbold lecture at the College of Physicians, February 1, his subject being "Changes in Our Conceptions of Antigen-Antibody Reactions."

#### TENNESSEE

**State Medical Meeting.**—The eighty-ninth annual meeting of the Tennessee State Medical Association will be held, April 11-13, at Memphis.

#### TEXAS

**Hospital News.**—The contracts have been awarded for the fourth unit of the American Legion Memorial Hospital, Kerrville at a cost of \$490,460.

**Medical Arts Building for Dallas.**—The contracts have been awarded for the construction of the Medical Arts Building, at a cost of approximately, \$1,000,000.

**Physician to Become Medical Missionary.**—Dr. James H. Ray, Denton, has been appointed by the board of foreign missions of the Methodist Church for medical missionary work in Old Mexico.

#### VIRGINIA

**Personal.**—Dr. McGuire Newton, Richmond, has been appointed a member of the state board of health to fill the vacancy caused by the death of Dr. Edward McGuire. The term of office expires, July 1, 1925.—Dr. Julian M. Robinson has been elected post commander of the Danville Post, American Legion.—Dr. Gerald A. Ezekiel, Richmond, has been assigned to the Three Hundred and Fifth Medical Unit, with the rank of major, in accordance with the assignment orders for the Eightieth Division, Officers' Reserve Corps.

#### WASHINGTON

**Health Conference.**—It has been announced that a conference of nurses and public health workers of Washington, Idaho and Montana will be held in Spokane, April 17-22.

**Personal.**—Dr. Charles C. McCown, Yakima, has been appointed county health officer to succeed Dr. Richard Connell, who was severely injured in an automobile accident.

**Hospital News.**—The Lane Cottage Hospital, Okanogan, was opened in December. The building is equipped with all modern improvements and was erected at a cost of \$6,000. It will accommodate twelve patients.

#### WISCONSIN

**Health Board Election.**—At the annual meeting of the Wisconsin state board of health, held, January 12, at Madison, the following officers were elected: Dr. William F. Whyte, Madison, president; Dr. Edwin P. Hayes, Eau Claire, vice president, and Dr. Cornelius A. Harper, Madison, state health officer.

**Medical Meeting.**—At the annual meeting of the Milwaukee Medical Society, held, January 10, the following officers were elected for the ensuing year: president, Dr. Curtis A. Evans; first vice president, Dr. William Thorndike; second vice president, Dr. Alfred L. Kastner; secretary, Dr. Lawrence G. Sykes, and treasurer, Dr. Joseph P. McMahon.

#### CANADA

**Graduate Course in Radiology.**—The University of Toronto has instituted a graduate course leading to a diploma in radiology. Candidates for the diploma are required to be graduates in medicine of this university, or of some other university recognized for this purpose by the senate. They must also have spent at least one year after graduation as an intern in a recognized hospital. The curriculum leading to the diploma extends over one winter session of eight months. Classes will be limited, and the schedule will include roentgenographic technic, interpretation and gastro-intestinal examination.

**Ontario License Board's Clemency.**—The Ontario license board has lifted the suspension imposed on all those physicians whose liquor prescriptions did not exceed seventy-five during the month of December. The remission of penalty affects at least 250 Ontario physicians, who had not already received special individual forgiveness at the hands of the board. Originally there were 335 physicians suspended at dispensaries for issuing more than the prescribed fifty prescriptions during the Christmas month. More than sixty of them made representations which satisfied the board, and their suspensions were lifted. There are still twenty-four under the ban at the dispensaries for various terms, all of whom have issued more than seventy-five prescriptions during the month of December.

**Public Health News.**—With a strong plea that any reduction in the estimates of the department of health, Toronto, would be reflected in the activities of the staff during the year, the local board of health chopped \$9,000 off the estimates by Dr. Hastings, medical officer of health, for this year. An item of \$2,640 for the care of measles patients was struck



out, another of \$2,675 for the increased cost of coal for the isolation hospital, and another of \$4,024 for the increased cost of supplies for the isolation hospital. Dr. Hastings will endeavor to keep his needs down to \$855,366 for this year. —A warning was issued recently by the board of health for the province of Quebec to all municipalities throughout the province that a return of the drastic influenza epidemic of 1918 was imminent, and urging every possible precaution. —In view of the seemingly increasing prevalence of coughs, colds and other bronchial troubles, together with the reports of epidemic influenza from the various states and provinces, Dr. George G. Melvin, chief medical officer of the department of public health of New Brunswick, issued a warning recently to the public to observe all possible precautions. —Provided the city solicitor of Chatham, Ont., gives the opinion that it is legal, the city council will grant \$70 a month to the committee in charge of the baby clinic, until October 31, the end of the council year. The decision was made at an adjourned meeting of the council recently, and during the discussion the unanimous opinion was expressed that clinics should be taken over by either the provincial or the federal government.

**University News.**—There are at present 189 graduated physicians attending the University of Toronto who are studying for special degrees. The majority are registered for the M.A. degree, while only three students are entered for the degree of M.D. While the university has no separate faculty of graduate studies, through the board of graduate studies it is forming a nucleus for such a faculty, that professors may be free to devote time to research work and to the instruction of graduate students. The junior members of the staff are also availing themselves of this opportunity to increase their academic standing, about 70 per cent. of them being enrolled. —Emphatic denial of the suggestion that a German system was being followed was recently given by Sir Robert Falconer, president of the University of Toronto, in regard to the criticisms that have been made in connection with the reorganization of the Faculty of Medicine. The reorganization, he said, was for the purpose of coordination and to make the department more effective; the system had been tried out successfully in England, and there was nothing German about it. In regard to returned men being overlooked in the reorganization, younger men have been selected, but those overlooked have been amply compensated.

### GENERAL

**American Congress on Internal Medicine.**—The sixth annual session of the congress will be held, April 3-8, at Rochester, Minn., under the presidency of Dr. Sydney R. Miller, Baltimore.

**American Association of Anatomists.**—At the recent annual meeting of the association, held in New Haven, Conn., the following officers were elected for the ensuing year: president, Dr. Clarence M. Jackson, University of Minnesota, Minneapolis; vice president, Dr. Harold D. Senior, New York, and secretary-treasurer, Dr. Lewis H. Weed, Johns Hopkins University, Baltimore.

**Proposed Deputation to Study Health Problems of Missionaries.**—At the Foreign Missions Conference of North American Boards, held, January 11-13, at Atlantic City, N. J., preambles and a resolution were reported to the committee of reference and counsel for action. By this action the conference requested consideration of the wisdom of sending and the ways and means of financing a medical deputation to some selected field or fields to study and report on the medical work and the health problem of the missionary staff.

**Steel Memorial Medal Awarded.**—The council of the Royal College of Veterinary Surgeons has awarded the Steel Memorial Medal for 1921 to Dr. Albert Hassall, Zoological Division of the Bureau of Animal Industry, Washington, D. C. This medal is awarded at intervals of three years on the recommendation of the donors and prizes committee for scientific or literary work of merit in connection with the veterinary profession. The author catalogue was published as a joint work of Dr. Charles Wardell Stiles and Dr. Hassall as Bureau of Animal Industry Bulletin 39, and the subject catalogues covering the cestodes, trematodes and nematodes have been published by these authors as bulletins of the Hygienic Laboratory, U. S. Public Health Service.

**Legislation Proposed for Storing Alcoholic Liquors.**—A bill has been favorably reported from the Ways and Means Committee of the House of Representatives which will permit distilled spirits to be stored in as few as twenty warehouses,

in place of the 304 bonded warehouses throughout the country in which are now stored 38,000,000 gallons of liquor. The bill was drafted by officials of the Treasury Department, and is approved not only by them but also by holders of warehouse receipts and organizations interested in prohibition enforcement. Reasons for the favorable report of the bill are that it is less expensive to guard twenty warehouses than 304; that it will save from \$300,000 to \$600,000 for the government in storage and other charges, and that it will relieve holders of warehouse receipts of unnecessary expense and hazard occasioned by existing requirements.

### LATIN AMERICA

**Public Health School in Mexico.**—The department of public health of Mexico has opened a school of public health. Dr. F. Zárraga will be in charge.

**Medical Chief of Child Hygiene Service.**—Dr. Fernandes Figueira of Rio de Janeiro, president of the Brazilian Pediatric Society, has been appointed chief of the child welfare department of the national public health service in Brazil.

**Antiofium Campaign in Cuba.**—The secretary of public health, Dr. Guiteras, has ordered Dr. Penichet to investigate the clandestine importation of opium in Cuba, and especially, the disposal of 185 kilograms recently brought into the country.

**Reorganization of Medical Society.**—The following officers were recently elected by the Medical Society of Vera Cruz: president, Dr. R. Cuervo; vice president, Dr. N. L. Melo; secretary, Dr. J. Solórzano Morfin; assistant secretary, Dr. S. Ruiz, and treasurer, Dr. C. Rodríguez Mendoza.

**New Monthly in Cuba.**—A new journal, *Revista de Medicina Legal de Cuba*, has begun publication. It will be the official organ of the Society of Legal Medicine of Cuba. In the first number there is an article on "Morgues" by its editor, Dr. A. Barreras, who is also the president of the society.

**Personal.**—Dr. J. H. White has been appointed by the Rockefeller Foundation director of the Mexican commission against yellow fever, to replace Dr. T. C. Lyster, who has resigned this position. Dr. Lyster's withdrawal has been very much regretted in Mexico. —Dr. M. Alonzo Romero has been appointed mayor of the city of Mexico. —Dr. R. Pardo has been appointed mayor of the city of Oaxaca. —Dr. E. Arosemena has returned to Panama after his graduation from the University of Edinburgh, Scotland. —Dr. R. Holguin has returned to Puerto Colombia, after spending several months in New York. Dr. Holguin expects to open his office in Colón, Canal Zone. —Dr. F. Menocal, a prominent Havana physician, is now visiting in New York.

**Organization of the Profession in Argentina.**—The *Bulletin* of the Sindicato de Médicos of Buenos Aires states that during the eight months since the organization of the Argentine Medical Syndicate it has already over 300 members enrolled. It was the first organization of the kind in South America, but was soon followed by the foundation of a similar syndicate in Uruguay, which has already accomplished good work. The aim of these organizations is stated to be not only the interests of the profession from all standpoints but to awaken in physicians the consciousness of their importance as a factor in general progress. Dr. N. Capizzano is director of the *Boletín*, and he appeals to the profession at large to stop and think for five minutes of the future of the profession. He says that he is certain that all who do this will want to be enrolled as a member of the syndicate.

### FOREIGN

**Hospital News.**—A children's department has recently been established at St. Luke's International Hospital, Tokyo. The hospital is in charge of Dr. Margaret H. Sutley, a graduate of the University of Colorado School of Medicine.

**Royal College of Physicians of Edinburgh.**—The annual meeting of the Royal College of Physicians of Edinburgh was held in December. Sir Robert Philip, M.C., LL.D., was elected president, and Dr. Harry Rainy, vice president for the ensuing year.

**Memorial to Emil Fischer.**—A statue of Emil Fischer was recently unveiled on the Luisenplatz, Berlin, opposite the statue of Robert Koch. A bronze bust of the chemist, who died in 1919, was also presented recently to the Chemical Institute by Dr. H. Fischer.

**New Italian Neurologic Journal.**—The *Policlinico* calls attention to the journal, *Il Cervello* ("Brain") which has been recently founded at Naples by a group of neurologists,



all members of the medical faculty. It is a bimonthly, subscription 40 liras. The address is Manicomio Provinciale di Napoli, Italy.

**Resumption of Medical Journal.**—It has been announced that the *Archives internationales de laryngologie, d'otologie et de rhinologie*, which ceased publication at the beginning of the World War, resumed monthly publication under the direction of Dr. F. Lemaitre and Dr. L. Baldenweck of Paris, in January.

**Tokyo Charity Hospital Medical College.**—The Tokyo Charity Hospital Special Medical School was raised, October 20, to the rank of a private university consisting of a single faculty, a medical college, which is the first instance of the kind to occur in Japan. There are sixty professors and 616 students attached to the medical school at present. Dr. Eigoro Kanasugi, who was chief assistant to the late president of the school, has been recommended as the president of the new college.

**Hospital Bill Introduced in Australia.**—A hospital bill was recently introduced into the legislative assembly of western Australia for the purpose of insuring that "the provision of public hospitals shall be the concern of the various local governing bodies throughout the state, as well as of the government." In view of the drastic nature of the changes provided by this measure, special action has been taken by the western Australian branch of the British Medical Association to deal with its provisions.

**Japanese Medical Association.**—The sixth annual session of the Japanese Medical Association was held, November 25-26, at Tokyo, under the presidency of Dr. Kitasato. Resolutions were adopted for the establishment of an investigation board for the prevention of the sale of "patent medicines" and the practice of quackery, and for the control of hospitals under unified regulations. A government inquiry as to the best measures to be adopted for the prevention of venereal diseases was submitted to the investigations of a special committee.

**International Study of Industrial Accidents.**—A special section for the study of the problems of industrial safety, both in their national and international aspects, has been created in the International Labor Office, Geneva, in order to fulfil the objects of the International Labor Organization as laid down by the Peace Treaty "to protect the worker against sickness, disease and injury arising out of his employment" and to study the existing systems, practices and devices for eliminating human wastage and discover remediable deficiencies in those systems.

**Tercentennial of Molière.**—This year has brought the three hundredth anniversary of the birth of Molière, and it had been proposed to celebrate it at Paris with gala representations of his plays, banquets, etc., and with a public meeting at the Sorbonne. A writer in a daily paper protested against this place for the public tribute, saying "The Sorbonne—part of the University of Paris—is the last place for a tribute to Molière, for if ever a poet was cordially detested it was by every one connected with the Sorbonne." Linossier replies to this in the *Paris Médical* for December 31, with a witty harangue showing the appreciation of the medical profession for Molière's raillery of their foibles, and declaring, like his Sganarelle, that "nous avons changé tout cela." Molière is said to have been born Jan. 15, 1622, at Paris.

**Prizes of the French Academy of Medicine.**—The Académie de Médecine at Paris has 81 endowed prizes to award, and 47 were available this year. There was no competition for 6, and the works offered in competition for 10 others were not considered worthy of the award, so that only 31 were distributed at the annual meeting in December. A total of 84 competing works were received. A number of the prizes were given for important scientific work done during the year, most of which has been summarized in THE JOURNAL, such as Béhague's work on traumatic epilepsy, Cornioley and Kotzareff's, of Geneva, on traumatic toxemia and burns, and Tillot's on reawakening the hearing. One prize was awarded to Dr. J. Glover for his methods of telephoning by utilizing the skeleton as a transmitter (important during the war for telephoning while wearing a gas mask), and electric auscultation. The *Bulletin* for Dec. 13, 1921, gives the list of prizes open to international competition in 1923 and 1924. Only 10 of the prizes are restricted to persons of French birth. The secretary commented on the handicap that results from too specific directions in regard to the awarding of a prize, as conditions change so much in the course of years. The Audiffred prize is still unclaimed. This was offered for a

"sovereign remedy for tuberculosis to be found within twenty-five years from 1896." The prize is 3 per cent. government bonds representing an income of 24,000 francs.

#### Deaths in Other Countries

Dr. B. Liknaitsky, died, December 24, in Johannesburg, South Africa.—Dr. John Galloway, health officer of Port Elizabeth, South Africa, died, December 22, from pneumonia.—Sir German Sims Woodhead, professor of pathology, University of Cambridge, England, president of the British Medical Temperance Association, died, December 29, aged 66.—Dr. G. M. Edmond of the University of Aberdeen, Scotland, died, December 18.—Dr. W. Gärtner, privatdozent of bacteriology at Kiel, member of the medical mission to Russia sent by the German Red Cross, has succumbed to typhus at Kazan.—The *Revista de Medicina* of Havana notes the death of Dr. Manuel Masforroll, director of the hospital at Santiago, Cuba, formerly director of the national laboratory and at one time in the marine hospital service of the United States and later professor of anatomy and bacteriology in Central America.—The *Revista de Beneficencia Pública* of Santiago, Chile, chronicles the death from typhus of Dr. J. de la Vega Abrines, professor of pathologic anatomy and hospital prosector.—The *Brazil Medico* mentions the ceremonies at the burial of the late professor of legal medicine at the University of Rio de Janeiro, Dr. A. J. de Souza Lima.

## Government Services

#### Need for Workers in Rehabilitation

The United States Civil Service Commissioner states that there is urgent need for reconstruction assistants and aides in physiotherapy and occupational therapy, trained nurses and physicians to serve in hospitals and other establishments of the U. S. Public Health Service and the Veterans' Bureau, in the care and rehabilitation of men injured in the World War. Applicants will be received until further notice, and they will not be given written scholastic tests, but will be rated on their education, training, experience and physical ability. Information and application blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C., or from the secretary of the local board of civil service examiners at the postoffice or custom house in any city.

#### Decoration to Dr. Charles Halliday

Dr. Charles Halliday, U. S. Public Health Service, has been awarded the decoration "Krzysz Walcznych," with one from the minister of military affairs of Poland, for services rendered Poland while attached to the American Red Cross in 1919 and 1920. The presentation was made by Major K. Mack, military attaché of the Polish legation to the United States. This is the second decoration received by Dr. Halliday from the government of Poland, the first one having been awarded for services rendered by him to the Polish army in France during the war.

#### U. S. Veterans' Hospital

Announcement is made by the Public Health Service that hospitals for ex-service men will all hereafter be designated as U. S. veterans' hospitals. The hitherto existing practice of designating these institutions as U. S. public health hospitals will be discontinued. This change has been made at the instance of Director Forbes of the Veterans' Bureau, for the reason that none but war veterans are patients in such hospitals, and the new name more accurately describes these institutions than their former designation. All future hospitals that may be established by the Public Health Service for soldier patients will also be known as U. S. veterans' hospitals. The foregoing plan does not apply to the U. S. marine hospitals, and no change has been made in the names of the twenty-three marine hospitals. Four Public Health Service hospitals, however, will be excepted from the new arrangement, and will be designated as U. S. marine hospitals. These four hospitals are located at Norfolk, Va., Ellis Island, N. Y., Carville, La., and New York City. No change whatever is contemplated in the administration of any of these hospitals, and



their control and direction will still remain in the U. S. Public Health Service. Thus, all government hospitals will be divided into two classes, U. S. marine hospitals and U. S. veterans' hospitals.

#### U. S. Veterans' Bureau Clean-Up Campaign

As a result of a clean-up campaign by the U. S. Veterans' Bureau, it is claimed that thousands of cases of disabled war veterans have been found who were unaware of their rights to treatment at the hands of the government. Most of these cases were discovered in the remote mountainous and rural communities. In some instances the ex-service men were found suffering with serious disabilities. In a summary of the work done by the U. S. Veterans' Bureau in searching out and examining World War veterans, it is claimed that 159,223 have been interviewed and that 101,714 cases have been handled.

#### Appropriations for Veterans' Bureau

Representative Will R. Wood of Indiana presented a bill to Congress this week making appropriations for the executive and sundry executive bureaus, boards and commissions for the coming fiscal year. Included in the list is the U. S. Veterans' Bureau. The items contained in the measure are: salaries and expenses of all offices, \$25,815,942; compensation for death and disability, \$160,000,000; medical and hospital services, \$64,658,680. The U. S. Veterans' Bureau is given the right in the proposed act to portion out parts of this appropriation to be used by the U. S. Public Health Service, the board of managers of the National Home of Disabled Soldiers, and the War, Navy and Interior departments.

#### Veterans' Bureau Dispensaries

Director Charles Forbes of the U. S. Veterans' Bureau has announced that 140 dispensaries will be established in the various districts and subdistrict offices of the bureau, if his recommendations to the President are acceptable. For some time the proposal to open these dispensaries so as to render prompt and immediate aid and medical service to disabled war veterans has been under consideration as a necessary adjunct to the offices of the Veterans' Bureau. The present personnel will be utilized as far as possible, and the dispensaries will be equipped with dental, physiotherapy, roentgen-ray and examining rooms, laboratory and pharmacy facilities. Establishment of these dispensaries will to a great extent dispense with the services of private physicians as well as dentists, and the previous roentgen-ray and pharmacy services performed by private institutions will also be eliminated.

#### United States Public Health Service Takes Action on Spread of Influenza

In response to inquiries addressed to the United States Public Health Service as to the possibility of an epidemic of influenza coming to the United States through transmission from European countries in which there is a considerable incidence, Surgeon-General Cummings has communicated with the health commissioner of New York City and the surgeon in charge of the U. S. Quarantine Station at New York. It is noted that there have been at all times a considerable number of cases of influenza in this country, and that introduction from abroad is not necessary in order to produce infection. Nevertheless, the quarantine officer has been instructed to remove and to hold until convalescent such immigrants as show clearly signs of having influenza of the epidemic type. At the same time, Assistant Surgeon-General Blue, in charge of the U. S. Public Health Service abroad, has been informed that there is considerable alarm in this country as to the reports of influenza in Europe, and has been asked to instruct service representatives in England and the continent to prevent embarkation of any steerage passenger presenting active symptoms of influenza. It is not contemplated that passengers with ordinary colds or bronchial conditions of nonspecific character will be included under these regulations, or that any inspection will be made of cabin passengers.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan. 2, 1922.

#### The School Medical Service

The annual report of the chief medical officer of education shows the extent to which the school medical service has grown in a few years. During the year 1920-1921, the children who attended the public elementary schools of England and Wales numbered 5,187,000. Of these, approximately 2,400,000 were medically examined during the year, in three groups, at the ages of 5, 8 and 12 years, the first age being that of entry and the last that of leaving school. The medical staff consists of about 800 whole-time medical officers, many of whom are also health officers, and 730 part-time medical officers. These are employed in 900 school clinics; but many others are engaged in the 391 hospitals which undertake some of the school work. In addition to the regular examination of the children at the stated ages, sick and ailing children are especially examined. When the school medical service was started, three disadvantages were anticipated: that it would pauperize the parent and destroy the sense of parental responsibility; that it would impose an unremunerative burden on the ratepayers, and that it would have a detrimental effect on the work of the private physician. According to the report, none of these have been realized. Parental responsibility has been stimulated, the investment is yielding a high interest, and medical treatment has been so safeguarded as to secure the support of the profession. The school medical service is not duplicating but supplementing and enhancing the work of the private physician. An important indirect effect of the service is that it has taught the educationist that children must be handled as individuals and not in bulk. A growing interest of teachers and parents in the health of children is evident. The teachers have great influence in persuading parents to have defects in their children attended to. It is becoming the custom for school medical officers to undertake collective investigations into the health of children.

Of the 2,400,000 children examined, no less than 47.9 per cent were suffering from defects. A comparative investigation was made of groups of children classified according to environment as follows: industrial areas, residential towns and rural areas. The curious result was that the percentage of defects was smallest in the residential towns, while the rural areas were scarcely ever better than the industrial towns or than London; indeed, in diseases of the nose and throat, they showed the highest return of all four groups. The amount of dental defect is enormous: 70 per cent. of the children required treatment for caries. The number of abnormal children, exclusive of dull and backward ones, is estimated at 164,500. Of these, 37,000 are mentally defective, 6,500 are epileptics, 36,000 are cripples, 20,000 have pulmonary tuberculosis, 6,000 are blind and the same number are deaf.

#### Reform of the Lunacy Laws

A conference on the administration of the lunacy laws has been summoned by the board of control (the official body which controls their administration). Meanwhile the Mental Hospitals Association has published a pamphlet entitled "Thirty Years' Administration of the Public Asylums in England and Wales." It is claimed that the attacks on asylum management are rather beside the mark and that, on the whole, the asylums are well inspected and the patients enjoy good food, warm clothing and ample recreation, and are cared for by able and conscientious physicians and nurses. It is the lunacy law which requires reform. One of the



objects of the association is to obtain their amendment so that incipient mental derangement may be treated before the stage is reached which compels certification and detention of the patient in an asylum. It is thought that a great number of the patients in our asylums whose cases are regarded as irrecoverable might be useful and healthy citizens if they had had the advantage of skilled treatment in the early stage. As the law stands, power to receive voluntary boarders in mental hospitals does not exist. Such facilities are provided on the continent of Europe and in the United States in the form of public and private "clinics in psychiatry." But here many people on the verge of mental illness dread even the mention of the word asylum and this dread is often shared by their friends and relatives. The association is also anxious to eliminate the taint of pauperism which attaches to patients in asylums.

#### Birth Rate Commission's New Inquiry

The national birth rate commission was established in 1911 and its reports have from time to time been reviewed in *THE JOURNAL*. Last year, it held an inquiry into the prevention of venereal diseases. This year it will concentrate on the social protection of adolescence. Expert committees have been set up for the whole country and a similar movement is being started in the Dominions. The inquiry embraces human development from the physiologic and psychologic standpoint, the influences which affect our young citizens as potential parents, the effects of diet, the dual functions of the sex glands, methods of providing sex education, the influence of recreation and the influence of industrial occupations on fertility, and the preparation of adolescents for worthy citizenship.

#### A New Insulator

During the war, a food investigation board was appointed by the government. The board was soon brought in contact with the fact that cold storage forms an important bridge between inconstant supply and constant demand, and that the practical methods are uncertain. A subcommittee, appointed to investigate the various materials used to prevent external heat passing through the walls of the cold storage reservoir, concentrated first on thermal conductivity. The work was carried out at the national physical laboratory and required the devising of a number of new methods. On the British system, the thermal conductivity of a material is the quantity of heat in the British thermal units (a B. T. U. is the amount of heat necessary to raise 1 pound [453.6 gm.] of water 1 degree Fahrenheit) which flows, per square foot (0.09 square m.) per hour, through 1 inch (2.5 cm.) thickness of material for a difference of 1 degree Fahrenheit between the faces. This number is 2,903 times that which expresses the conductivity on the international or C. G. S. (centimetre-gramme-second) system. According to the British system, the thermal conductivity of wood is 1. It is not so good a nonconductor as a number of materials—cork, slagwool, charcoal and wood fibers. The number for these is 0.32. In the course of the work, it was discovered that, in a vertical wall of insulating material, heat passes rapidly upward from the bottom toward the top. This and other observations led to the conclusion that the value of insulators depends on the presence in their spongy interstices of relatively stagnant air. The more freely the air could flow by convection currents, the more rapidly heat leaked. Still air was found to have a conductivity barely half of that of the best insulating materials. It was concluded that there still was room for improvement through finding a more suitable material in cellular form. At this point, a new material was brought to the notice of the committee, so late that they were able only to state its high promise in a supplementary note. It consists of rubber expanded by

gas into a highly cellular form. Under a low-power microscope, it is seen to consist of minute air cells bounded by rubber membranes. The boundary walls themselves have a low conductivity and the stagnant air contained in them presents the ideal condition for resisting the passage of heat. This form of rubber is an extremely light solid, only about half the weight of cork, and it has a conductivity lower than that of any material hitherto studied, being only half as much again as that of still air. It is prepared by vulcanization under a gaseous pressure of about 100 atmospheres, and is totally different from the ordinary spongy rubber, which is heavy, porous and absorbent.

#### PARIS

(From Our Regular Correspondent)

Jan. 6, 1922.

#### The Population of France in 1921

As a rule, an enumeration of the inhabitants of France has been made once in five years, and under normal conditions a census would have been taken in 1916, the previous enumeration having been made in 1911, but, by reason of the war and the occupation by the enemy, during hostilities, of a part of French territory, it was postponed and was not taken until March 6 of last year. Since coming again into possession of the three departments of Alsace and Lorraine (the departments of the Moselle, Bas-Rhin and Haut-Rhin), France comprises ninety departments, exclusive of Algeria. According to the enumeration of March 6, the total population of France is 39,209,766. In 1911, the figures were 39,604,992. It should be noted that the 39,209,766 inhabitants recorded in March, 1921, include 1,709,749 inhabitants of the departments of Alsace and Lorraine. The population of the eighty-seven departments existing before the war has, therefore, been reduced to 37,500,017, a diminution, as compared with 1911, of 2,104,975. This decrease is due, for the most part, to the losses suffered during the war; secondly, to the reduction in the birth rate which resulted therefrom, and, finally, to a certain extent, as regards certain departments, to serious epidemics of influenza. It should be stated, however, that the decrease in population such as results from the calculation that I have just presented is higher than it really should be. It should be taken into account that on March 6, 1921, a large number of Frenchmen were in foreign countries in the army and navy services and consequently were not counted in at the regular census. They were, however, included in a special census taken by the army and navy authorities. The number of Frenchmen serving in the army outside of France was 150,000. The number of marines was 19,137, and the number in the merchant marine (on the high seas or in foreign harbors) was 23,836, making a total of 192,973 outside of France on the day of the census. Taking account of these rectifications, the total population of France, including Alsace and Lorraine, but excluding those who are permanently located in Algeria, in the colonies and in foreign countries, may be placed at 39,402,739.

The decreases in population due to war losses have affected all departments with the exception of the following eight: Alpes-Maritimes, Bouches-du-Rhône, Hérault, Pyrénées-Orientales, Rhône, Seine, Seine-Inférieure and Seine-et-Oise. The increase in these eight departments is due to an influx from other departments, and, to a certain extent, to the presence of refugees who either have taken up their permanent abode there or are merely waiting for the time to come when they will be able to reenter their devastated communes. The departments that were invaded by the enemy show, of course, the greatest decrease, since some of their population has been unable to return. Thus, as also became evident from the census of 1911, the urban population continues to increase at the expense of the rural population. While the total popu-



lation of France has decreased in the manner indicated, the population of the cities with more than 30,000 inhabitants has increased in the prewar departments alone to the extent of 259,039. The cities that have increased most are: Lyons (37,796, increase), Marseilles (35,722), Havre (27,215), Toulouse (25,858, Saint-Etienne (19,311), Paris (18,362), Clermont-Ferrand, Perpignan, Villeurbanne, Nantes, Nice and Boulogne-sur-Seine.

In 1911, fifteen cities had more than 100,000 inhabitants, which is the same number as in 1921. Rheims, which, according to the census of 1911, had a population of 115,178, today has only 76,645; but Strasbourg fills the gap with 166,767. These fifteen cities rank as follows: Paris, 2,906,472; Marseilles, 586,341; Lyons, 561,592; Bordeaux, 267,409; Lille, 200,952; Nantes, 183,704; Toulouse, 175,434; Saint-Etienne, 167,967; Strasbourg, 166,767; Havre, 163,374; Nice, 155,839; Rouen, 123,712; Roubaix, 113,265; Nancy, 113,226; Toulon, 106,331.

#### Endowments for Laboratories

Monsieur Albert Turpain, professor of physics on the faculty of sciences, Poitiers, and director of the physical laboratory of the University of Poitiers, has recently prepared a statement setting forth the sums devoted, in the budget of 1921, to scientific research and to the use of laboratories. Under the heading "universities; equipment," the laboratories were given 7,300,000 francs, but in reality scarcely 3,000,000 francs of this sum ever reached the laboratories. Three million francs for all the laboratories of sixteen universities! The sum seems quite ridiculous, especially if it is compared with the resources placed at the disposal of American universities. According to Turpain, the expense budget of the state of New York carried in 1909 the item of \$30,000,000 for public education, and in 1919 this sum had been increased to \$87,000,000. That is to say, it had tripled in ten years. The endowments of six of the principal American universities for the same year (1919) were:

	Students	Endowment	Endowment per Student
Columbia .....	5,675	\$28,542,000	\$5,029
Harvard .....	5,342	21,011,000	3,933
Yale .....	3,466	10,561,000	3,040
Cornell .....	4,700	8,800,000	1,874
Princeton .....	1,200	4,000,000	3,333
Pennsylvania .....	4,556	3,438,000	730

Fortunately, the Caisse des recherches scientifiques (fund for scientific research), the appropriations for which are for the most part derived from revenues accruing from a tax levied on the funds of the pari mutuel, makes up, to a certain extent, for the meager resources that the French government places at the disposal of our laboratories. Monsieur Colson, president of the administrative council of the Caisse de recherches scientifiques, recently filed with the president of the republic his annual report on the work accomplished by this organization. During the year 1920, the total resources of the fund amounted to 1,019,000 francs, 720,000 francs of which was derived from the pari mutuel. The total expenditures amounted to 355,486 francs. For biologic researches, 70,000 francs was appropriated. For researches on the purification of residue waters, 48,000 francs was allotted. For still other scientific researches, an allocation of 24,200 francs was made.

Among the more important grants made for biologic investigations may be mentioned: 10,000 francs to Monsieur Legendre, of the Museum of Natural History, for his studies on the action of anesthetics; 4,000 francs to Dr. Achard, professor of the Faculté de médecine of Paris, for continuation of his researches on the effect of various bread flours on nutrition; 4,000 francs to Dr. Brumpt, professor of the Faculté de médecine of Paris, for his studies on the parasitic diseases of animals; 4,000 francs to Dr. Vincent, professor of the

Ecole du Val-de-Grâce, for his studies on serotherapy in typhoid fever; 3,000 francs to Dr. Gley, professor of the Collège de France, for his researches on the internal secretions, and 3,000 francs to Dr. C. Nicolle, director of the Pasteur Institute of Tunis, for his investigations on the infectious diseases of northern Africa.

#### Monument to Dr. Magnan

A number of former pupils, friends and confrères of the late alienist, V. Magnan, former president of the Academy of Medicine, and chief physician of the admission service of the Asile clinique Sainte-Anne, have hit upon the happy plan of erecting a monument to that illustrious representative of French psychiatrists. It is proposed that the monument be unveiled the coming May, on the occasion of the celebration of the centenary of the discovery of general paralysis by Bayle. Thus, the two schools of French psychiatry, that of Charenton and that of Sainte-Anne, will unite to pay their respects to the memory of Magnan, the former head of Sainte-Anne.

Every subscription of forty francs will entitle the donor to a commemorative plaque representing the monument. Subscriptions may be sent to Monsieur Masson, éditeur, trésorier du comité; 120, Boulevard Saint-Germain, Paris (VIe).

#### Retirement of Dr. Darier

Following Drs. Brocq and Thibierge, Dr. Darier has also reached the age of retirement for a hospital physician and recently severed his connection with the Hôpital Saint-Louis. On this occasion, his pupils and friends presented him with a medallion likeness of himself, engraved by Dr. Paul Richer, and his bust, executed by Dr. Sabouraud. The ceremonies took place in the large hall of the Saint-Louis Museum. Among those present were: Professor Roger, dean of the Faculté de médecine. Professors Vaquez, Sergent, Gley; Drs. Brocq, Hudelo, Sabouraud, Paul Ravaut and others. Addresses were delivered by Dr. Rist, the oldest intern under Darier; Dr. Hudelo, general secretary of the Société de dermatologie; Professor Nicolas of Lyons, and Dr. Graham Little of London.

#### Foreign Associate Members of the Academy of Medicine

At a recent meeting, the Academy of Medicine elected three foreign associate members from the following lists: First choice: Sir Ronald Ross of Liverpool, Dr. W. W. Keen of Philadelphia, and Dr. W. H. Welch of Baltimore; second choice: Sir David Bruce of London, Dr. Canton of Buenos Aires and Prof. C. Roux of Lausanne. Sir Ronald Ross, Dr. W. W. Keen and Dr. W. H. Welch received a majority of the votes cast, and were declared elected.

#### The Coming Congress of Alienists and Neurologists

The twenty-sixth congress of alienists and neurologists of France and French-speaking countries will be held at Quimper, during the month of August, 1922, under the presidency of Prof. Jean Lépine, dean of the Faculté de médecine of Lyons. The main topics selected for discussion at the congress are: (1) the mental disorders associated with epidemic encephalitis; essayists: Dr. Truelle of Paris and Dr. Petit of Bourges; (2) the lesions of the central nervous system in motor disorders; essayist, Dr. Anglade of Bordeaux, and (3) social service work among psychopaths; the safeguarding of the rights of the individual and of society in the treatment of mental disease; essayist, Dr. Paul Courbon of Strasbourg.

#### D'Herelle's Book on the Bacteriophagum Intestinale

Since, in September, 1917, F. d'Herelle presented his first communication to the Académie des sciences on an ultra-microscopic organism antagonistic to dysentery bacilli, this bacteriophagic micro-organism has been the object of a great



number of interesting researches and we are under obligations to d'Herelle for having collected the data on the subject, which, up until now, were scattered through various reports of society proceedings, into a book (Masson et Cie, publishers), which forms a part of the series, "Monographies de l'Institut Pasteur." This work consists of two parts. In Part I, the author takes up the study of the morphology and the biology of the bacteriophagic ultramicro-organism. In Part II, he discusses the part played by the bacteriophagum in immunity and disease. No matter what the disease, the aspect, according to d'Herelle, is always the same. A pathogenic bacterium finds its way into an organism, whereupon one of two things happens. Either *Bacteriophagum intestinale* attacks the bacterium at once and destroys it before it can develop and the disease does not break out; or *Bacteriophagum intestinale* remains inactive, the bacterium develops and the disease manifests itself. The struggle may be carried over into the course of the disease itself. The bacteriophagum acquires increased virulence through contact with the pathogenic bacterium, while the bacterium, on the other hand, develops, through the same contact, increased resistance, and the ups and downs of this struggle for supremacy are faithfully registered by the varying condition of the patient. Convalescence begins from the moment that the virulence of the bacteriophagum is sufficient to allow it to get a definite upper hand. The outcome of the disease is fatal if the bacteriophagum remains inactive owing to unfavorable intestinal conditions or if the bacterium succeeds in developing a refractory state. [Compare with the editorial in THE JOURNAL, July 9, 1921, p. 126.]

### PRAGUE

(From Our Regular Correspondent)

Jan. 4, 1922.

#### Chair of Propedeutics

A new clinic of propedeutics for clinical medicine has been established at the University of Prague. Professor Vesely has been placed in charge and will make use of his experience gained in Russia, where similar clinics are attached to every medical school. The clinic is designed as a center for the teaching of the general principles of clinical methods to medical students before they actually start their studies of the different branches of clinical medicine and after they have finished the first two years, which are devoted to theoretical studies. The clinic has found only a provisional building, but has been welcomed, especially by medical students, who have felt the need of it for a long time.

#### International Congress on Venereal Disease

The League of Red Cross Societies organized in Prague an international congress for the campaign against venereal diseases in eastern Europe. The congress was held December 5-10. Besides Czechoslovakia, Poland, Jugoslavia, Bulgaria and Greece were represented. The congress was held under the chairmanship of Professor Janovsky. Dr. Janovsky is professor of venereology at the University of Prague. The league was represented by Dr. René Sand of Belgium, the general secretary, and Col. T. F. Ritchie, the head of the venereal disease division. At the opening meeting, both the ministers of health and of social welfare were present. On the first day, papers were read on the progress of campaigns against venereal diseases in each of the respective countries. On the second day, medical measures were discussed by Professor Samberger of Prague University. The following day, education of the young in sex matters was on the program. This was separated from the instruction to the adult public on venereal diseases, which was considered later. The consensus of the members of the congress was that sex education should be started very early in the school and that it can best be given by the teachers, who must, of course, be

well posted on the subject. Instruction on venereal diseases must be given by physicians and has to come later, before the child leaves school. The congress passed to a discussion of self-disinfection and military measures. All the members felt that this is a field which has been badly neglected up to date, although of paramount importance. The last day was devoted to the discussion of notification of these diseases. Although the members of the congress realized the value of this measure, they did not feel like recommending it under the present circumstances. Resolutions were drafted along the lines of the discussions and referred to the league for further action. It was the first time that the representatives of these countries had met for the discussion of common problems, and it is to the credit of the League of Red Cross Societies that it took the initiative in calling this congress.

#### New Gynecologic Department

The Prague medical faculty has opened a new building for gynecology. This was started during the war but could not be completed owing to war conditions. The building has modern equipment. There are more than 100 beds. One of the special features of the gynecologic department is that separate quarters have been provided for nurses. This is something which has been unknown up to this time in local hospitals and is due to the change of attitude toward nurses, which has developed largely as a result of the activities of the reorganized state school for nurses. This is the second new building that has been added to the Prague university during the year; and with it and the two new medical faculties opened in Brno and Bratislava since the armistice, the Czechoslovak government is making a good showing in medical education. It is due only to the enormous increase of the cost of building that many more new institutes have not been built, as the present accommodations are inadequate for handling the flood of foreign medical students who are flocking to Prague. Almost all the Prague hospitals have been requisitioned for the purposes of teaching.

### BERLIN

(From Our Regular Correspondent)

Dec. 30, 1921.

#### A New Influenza Epidemic

Since the first great influenza pandemic of 1890, there have been several less severe and less extensive epidemics, and we are passing through one now. According to a statement issued by the Allgemeine Ortskrankenkasse (health insurance society) of Berlin, almost 1,500 new cases of influenza among members have been reported daily since the last week in December. Similar figures have been reported from other large cities of Germany. Fortunately, the course of the disease is, for the most part, mild, but there have been a number of deaths as the result of pneumonia developing in a few days. As to the therapeutic aspects of the situation, nothing new has been learned. Serotherapy and treatment with ethylhydrocuprein preparations are highly recommended by some, as before, while they are rejected by others.

#### Scientific Palmistry

At a recent meeting of the Berlin Anthropologic Society, Prof. Dr. Heinrich Poll, an investigator in the domain of the science of heredity, discussed the relationship between the lines of the fingers and mental gifts. As is well known, the lines of the fingers are utilized in criminal records as a means of identification. The examination of many millions of finger prints has revealed the fact that no two are exactly alike. Not even in twins do we find the same markings, and what is especially important, from the fourth month of the embryonic stage to the end of life, the lines remain unchanged. It is also worthy of note that the hereditary



development of finger prints has been established. The almost countless number of finger prints have been divided into distinct classes for better orientation. We have come to distinguish them as whirls, arches and loops. Poll has examined the finger prints of almost 6,000 persons, 3,844 of whom were sound mentally and 1,908 mentally defective. He found that there are no healthy persons who present in their finger prints arches or whirls exclusively, while loops are lacking. He discovered that women require a classification of finger prints different from that of men. He also established that various races present different types of finger prints and that certain markings, while common in youthful subjects, are rare in older persons. From this last fact, Poll concludes that persons with certain types of finger prints have a life expectancy different from that of others, since these lines remain unchanged throughout life. Should this assumption be confirmed by an exhaustive series of investigations (which Poll admits would be required), it would be of the greatest importance to life insurance companies. In hospitals for mental defectives, Poll examined feeble-minded subjects, in some of whom the mental weakness was of an hereditary nature and in others of whom it was traceable to intra-uterine infection or to alcoholism in the parents. Poll claims to have established, further, that men with a certain number of "loops" in the finger tips are destined, for endogenous reasons, to become idiots. If, therefore, these observations of Poll that certain groups of persons are in danger of becoming idiotic should be confirmed, the time may come when we can figure out from the finger prints of the parents just how many children are likely to be idiots, especially if there are familial anomalies known to be present. Such a computation would then be possible for the reason that the hereditary transmission of finger prints would be in accordance with the mendelian law.

#### The Psychology of Sport

In the university school of gymnastics, established recently in Berlin, not only the researches on the physiologic processes connected with sport activities, as reported in previous letters (*THE JOURNAL*, Dec. 10, 1921, p. 1907; Jan. 7, 1922, p. 45), were carried out, but an endeavor was also made to approach the psychology of sport through an examination of the students. Some of the results of these investigations would seem to be of general interest. The preliminary steps were taken to work out, on a large scale, a system whereby the physical and mental subnormalities in pupils and adults might be definitely and readily established. Methods for testing the physical strength and endurance of large groups were tried out on about 100 members of the Berlin *Schutzpolizei* (a secondary protective force) and were found sufficiently simple and reasonably satisfactory. Body measurements taken of the pupils of a secondary school furnished a mass of material of great value in this connection. The researches are important, above all, by reason of the great simplicity of the methods and their practical significance in the attempts to raise the physical standard among all classes of the people. The researches on the effect of systematic physical training on mental capacity, which have been undertaken at the instance of the Prussian and the Berlin physical directors' clubs and other societies, will aid in the investigations outlined above. The tests that are being carried out on a large scale on schoolchildren, with the cooperation of the teachers and the medical fraternity, are for the purpose of determining the most favorable place, the best time and the most satisfactory method of giving training in gymnastic work.

The scientific investigation of sport activities has received an impetus from a number of good films representing various phenomena of sport as a whole. Extensive measurements in

connection with the manifestations of fatigue as seen in physical directors themselves, and a thorough testing of the effects of the regular schedule of the university school of gymnastics, will be the next steps necessary.

By means of the new apparatus, a number of procedures were tested; more particularly, the skill of boxers, the strength of heavyweight athletes, and the mental states of sprinters and gymnasts. The purpose of all these tests is to secure extensive statistical material, which will have much greater value than any single person's investigations on a small scale.

Certain of the tests were worked out in detail, as examples indicative of what could be accomplished along this line; for instance, a test for the velocity of applied force, a test of skill in the use of the hands, a test of ability to make fine distinctions as to form, and also two types of general intelligence tests. All the tests and also the form of blank used in the psychologic researches on sport activities have been introduced in many places outside of Berlin.

A new series of touch tests to ascertain the power of concentration, the phenomena of fatigue and the capacity for various combinations is being published; likewise a schematic diagram to illustrate graphically the effect of training, which in sport as in daily life is of paramount importance. An explanatory booklet giving a number of simple psychologic tests on sport activities will appear later. The details of some of the tests; for instance, the test of the heart's action by certain special procedures, to determine what sports involving a strain on the heart may be entered into, have not been entirely worked out as yet. Tests on the effects of different methods of training have been begun. Measurement of the electric action-currents of the human body will be made possible by means of a highly sensitive apparatus. Courage, reaction to fear, presence of mind and resoluteness were determined in athletes and members of the *Schutzpolizei* by means of a new and thorough method of testing. Material on adroitness, dexterity and general intelligence was also secured and will be published later.

#### Death of Professor Löhlein

Professor Löhlein, director of the pathologic and anatomic institute in Marburg, died, December 28, at the age of 44, after a long illness, due to an infection contracted during the performance of professional duties. He was the son of the well known gynecologist, who formerly occupied the chair of gynecology in Marburg. Shortly before his death, Löhlein had been offered the chair of pathology rendered vacant by the transfer of Professor Mönckeberg to Bonn.

#### GUAYAQUIL

(From Our Regular Correspondent)

Dec. 15, 1921.

#### Women Physicians in Ecuador

A woman, Dr. Matilde Hidalgo, has just graduated from Quito University. Including her, three women have so far practiced medicine in Ecuador, the first of them studying in the old University del Guayas. In this connection, there is observed at present a feminine tendency in this country. In the University of Guayaquil, where there is a total of about 300 students, thirty of them are women. Another Ecuadorian woman has just received the degree of doctor of philosophy in an American university.

#### Preparation of Theses

At the request of Central University, the superior board of education is considering a bill requiring students, after completing their courses, to notify the authorities one year in advance of preparing their final theses, so that their theses may be prepared under the supervision of a professor. This



apparently aims at preventing an occurrence common in European universities, in which these papers are prepared in collaboration, a rich student with a poor one, etc. This practice has not so far extended to this country.

#### Medical Society Activities

The Sociedad Médico-Quirúrgica del Guayas has shown new life under the presidency of Dr. Fuentes Robles. Its *Anales* have appeared again, and brief mention is made in this journal of several of the papers presented before the society. Many of them dealt with tropical pathology, for instance a case of paragonimiasis, reported by Dr. Heinert, and a case of psilosis or sprue, of mycotic origin, by Dr. A. J. Valenzuela.

#### Another Congress

Ecuador has been invited to participate in the third pan-American congress on infant welfare, which will meet at Rio de Janeiro. A propaganda committee has been organized here, headed by Professor Izquieta Pérez.

#### Health Conditions

Aside from a small outbreak of whooping cough and another of mumps, Guayaquil is suffering from what old physicians call a "health epidemic," such as few can remember. The sanitation of the city and the reduction of yellow fever now show results in the increasing number of visits by tourists and merchant ships.

#### Personal

Dr. Romo Rosales has returned from the United States, where he completed his medical studies, and has opened his office here.—After attending the Washington Surgical Congress, where he represented Ecuador, Dr. Alcívar, professor of operative medicine, has returned to this country.—Dr. C. V. Coello of the United States Public Health Service, who attended the American public health conference meeting in New York, has also returned.

#### Gift to German Scientist

Because of the situation in which German scientists are at present, the Ecuadorian Congress has issued a law granting a monthly pension of 300 sucres, about 10,000 marks, to Theódore Wolf, one of the European scientists brought to this country by the former president, García Moreno, to organize a polytechnic school. On his return to Germany, Wolf edited in Leipzig his monumental work "Geography and Geology of Ecuador," which, although deficient, is still in use by foreign geographers.

### Marriages

HERBERT A. DUFEE, Burlington, Vt., to Miss Margaret Elizabeth Spaulding of Salem, N. Y., December 27.

FERDINAND WILLIAM WIEHE, St. Marys, Ohio, to Welma G. Daron of Hellam, Pa., November 22, at Denver.

LISLE BENJAMIN ROBINSON, Atlanta, Ga., to Miss Effie Mai Buchanan of Nashville, Tenn., December 28.

CYRUS B. WOOD, M. C., U. S. Army, to Mrs. Irene Nagel Pettey at Washington D. C., December 28.

CORNELIUS THEODORE MCCARTHY to Mrs. Rose McCormick Ferron, both of Philadelphia, December 21.

JAMES CARLISLE HARMON, McCormick, S. C., to Miss Ruth Richards of Bryn Mawr, Pa., December 22.

ERNEST U. BUCKMAN, Wilkes-Barre, Pa., to Miss Carrie L. Best of Quincy, Pa., December 28.

RAYMOND RAUSCHER, Lynn, Mass., to Miss Bertha Hoffman of Lynnfield, Mass., December 31.

LUCY LLOYD PASSOVER to Mr. Theodore Earle, both of Denver, January 4.

### Deaths

**Basil Hicks Dutcher** † Colonel, M. C., U. S. Army, Chevy Chase, Md.; Columbia University College of Physicians and Surgeons, New York City, 1895; died, January 16, after a long illness, at the Walter Reed Hospital, Washington, D. C. Colonel Dutcher was born in New Jersey, Dec. 3, 1871; graduated from the Army Medical School, 1897; was commissioned assistant surgeon with the rank of lieutenant, M. C., U. S. Army, October, 1896; lieutenant-colonel, July, 1916, and colonel, May, 1917; retired from active service, Jan. 28, 1920, on account of physical disability. During the World War Colonel Dutcher took a hospital unit to Plymouth, England, and later was in charge of a hospital at Brest, France; while on active duty he served in the Philippine Islands, Panama, Japan, Porto Rico and Arizona.

**Heinrich Ferdinand Riedel**, Brooklyn; University of Erlangen, Germany, 1862; formerly a surgeon in the Bavarian army; at one time resident physician of the Lenox Hill Hospital, Manhattan; for two years superintendent of the Emigrant Insane Asylum, Ward's Island; died, January 17, at the King's County Hospital, from pneumonia, aged 82.

**Elam Filo Srygley**, Newberry, Mich.; Vanderbilt University Medical Department, Nashville, Tenn., 1913; served in France during the World War; formerly on the staff of the New Jersey State Hospital, Greystone Park, N. J.; assistant superintendent of the Newberry State Hospital; died, January 11, from pneumonia, aged 31.

**Phoebe Jane Teagarden**, Waynesburg, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1882; formerly president of the Greene County Medical Society; for twenty-five years president of the county Children's Aid Society; died, January 11, from cerebral hemorrhage, aged 80.

**Joseph B. Miller**, Alexander, N. Y.; University of Buffalo, 1866; member of the Medical Society of the State of New York; member of the county board of supervisors; physician to the Genesee County Alms House, Bethany; died, January 10, from chronic nephritis, aged 77.

**William Henry Rodgers** † Pittsburgh; Jefferson Medical College, Philadelphia, 1903; Spanish-American War veteran; connected for many years with the Allegheny County Home and Hospital for the Insane, Woodville, died, January 13, from pneumonia, aged 44.

**John Kurrus**, New York City; Columbia University College of Physicians and Surgeons, New York City, 1899; formerly on the staff of the Harlem Eye, Ear and Throat Hospital, New York City; died suddenly, January 17, from heart disease, aged 56.

**Edwin Randolph Barnes**, Buffalo; Long Island College Hospital, Brooklyn, 1865; Civil War veteran; member of the Medical Society of the State of New York; formerly attending surgeon at the Buffalo General Hospital; died, January 11, aged 84.

**John Cassell Rogers**, Kansas City, Mo.; University of the City of New York, 1875; St. Louis Medical College, 1865; member of the Missouri State Medical Association; formerly county coroner; died, January 6, at the home of his daughter, aged 79.

**James Thompson Walls**, Portland, Ore.; Medical College of Ohio, Cincinnati, 1877; specialized in gynecology; member of the Oregon State Medical Association; died January 7, at the home of his son, Powers, Ore., from cerebral hemorrhage, aged 70.

**Henry Meek**, London, Ont., Canada; Trinity Medical College, Toronto, 1878; professor of gynecology and obstetrics, Western University Faculty of Medicine, London; formerly lecturer at the Victoria Hospital, London; died, January 13.

**Louis T. Kennedy** † Pottsville, Pa.; Department of Medicine, University of Pennsylvania, Philadelphia, 1895; formerly pathologist and member of the medical staff of the Pottsville Hospital; died, January 12, from acute indigestion, aged 49.

**Thomas Edmund Pigot**, North Woburn, Mass.; Tufts College Medical School, Boston, 1897; for forty-two years employed by the American Telephone Company, New York City; died, January 7, from cerebral hemorrhage, aged 63.

**Annie L. Miller**, San Francisco; Homeopathic College for Women, Cleveland, 1869; practitioner for nearly half a century; died, December 29, following a brief illness, aged 94.

† Indicates "Fellow" of the American Medical Association.



**Ward Beecher Whitcombe**, Batavia, N. Y.; Medical Department of Columbia College, New York City, 1884; former health officer of Batavia; died, January 10, from septicemia, the result of a cut incurred while opening a can, aged 64.

**Egbert Tilton Andrews** ⚕ Grey, Maine; College of Physicians and Surgeons in the City of New York (Columbia University), New York City, 1873; veteran of the Civil War; died, January 10, at Portland, Maine, aged 77.

**Hugh W. Gates**, Calhoun, Ky.; Vanderbilt University Medical Department, Nashville, Tenn., 1882; member of the Kentucky State Medical Association; county health officer; medical referee for the county; died, recently, aged 61.

**Charles Van Cappellan**, St. Paul; University of Brussels, Belgium, 1885; former county physician and poor commissioner; died, January 8, at the Eitel Hospital, Minneapolis, following an operation for goiter, aged 66.

**Jesse Louis Gammons** ⚕ Yonkers, N. Y.; University of Vermont, Burlington, 1904; on the staff of the Municipal Tuberculosis Hospital; died, January 12, from heart disease at St. John's Riverside Hospital, aged 42.

**William Simpson Hickman**, Georgetown, Calif.; Vanderbilt University Medical Department, Nashville, Tenn., 1886; died, January 9, from heart disease at the White Hospital, Sacramento, Calif., aged 65.

**Edwin Gilliam Booth**, Williamsburg, Va.; University of Pennsylvania, Philadelphia, 1861; surgeon in the Confederate Navy during the Civil War; died, January 5, from senility, aged 82.

**Giles Andrew Fike**, Dundaff, Pa.; Jefferson Medical College, Philadelphia, 1876; died, January 6, at the Carbondale Emergency Hospital, Carbondale, Pa., from septicemia, aged 71.

**Samuel Crayton Loring**, Plymouth, Ind.; Rush Medical College, Chicago, 1886; member of the Indiana State Medical Association; died, January 3, from cerebral hemorrhage, aged 61.

**Frank Bates Livermore**, Barberton, Ohio; Cleveland University of Medicine and Surgery, Cleveland, 1895; died, January 17, from cerebral hemorrhage, in Youngstown, Ohio, aged 49.

**Fletcher Drummond**, Parksley, Va.; Jefferson Medical College, Philadelphia, 1869; member of the Medical Society of Virginia; died, January 11, following a short illness, aged 74.

**Wade D. Stevens**, Pawpaw, Ill.; College of Physicians and Surgeons, Chicago, 1894; died, recently, as the result of an overdose of a narcotic, apparently self-administered, aged 54.

**James A. Melton**, Aurora, Mo. (license, Missouri, 1883); member of the Missouri State Medical Association; died suddenly, January 8, from cerebral hemorrhage, aged 75.

**John J. Thode**, Walhalla, S. C. (years of practice); member of the South Carolina Medical Association; alderman of Walhalla; died, January 3, from pneumonia, aged 63.

**William Spencer Russell** ⚕ Wallingford, Conn.; Yale University School of Medicine, New Haven, 1880; member of the state legislature, 1883-1884; died, January 9, aged 63.

**Ernest A. Algoth**, Chicago; Jenner Medical College, Chicago, 1916; member of the Illinois State Medical Society; was found dead in his office, January 23, aged 47.

**Roland DuJardin**, New York City; New York Homeopathic Medical College and Hospital, New York City, 1894; died, January 7, from pulmonary tuberculosis, aged 66.

**Joseph Grant Morrissey**, San Francisco; Medical Department University of California, San Francisco, 1894; died, January 13, from cerebral hemorrhage, aged 57.

**B. R. Fakes**, Asheville, N. C.; University of Nashville, Tenn., 1866; Confederate veteran; died, November 22, at the home of his son-in-law, from senility, aged 84.

**Bailey Peyton Lester**, Woodbury, Tenn.; Vanderbilt University Medical Department, Nashville, 1879; University of Nashville, 1882; died, January 5, aged 64.

**Paul F. Von Scheliha**, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1889; died January 18, at Llanerch, Pa., following a long illness.

**Ansley Smith**, Royal Oak, Mich.; Michigan College of Medicine, Detroit, 1884; health officer of Royal Oak; died, January 11, from heart disease, aged 66.

**Frederick George Sparling**, Bashaw, Atla., Canada; Rush Medical College, Chicago, 1895; died suddenly, January 5, in Minneapolis; from heart disease, aged 57.

**Albert G. McLaurin**, Brandon, Miss.; University of Nashville, Tenn., Medical Department, 1873; died, January 8, from cerebral hemorrhage, aged 71.

**Edwin E. Campbell**, Watertown, N. Y.; Chicago Homeopathic Medical College, Chicago, 1885; died, January 3, from cerebral hemorrhage, aged 65.

**Eliab M. Jacobs**, Manitowoc, Wis.; Hahnemann Medical College and Hospital of Chicago, 1895; died, January 11, from cerebral hemorrhage, aged 63.

**John Dalglesh Campbell** ⚕ Pioche, Nev.; University of Michigan Medical School, Ann Arbor, 1878; died, January 8, in Salt Lake City, aged 68.

**Stanton M. Fetzer**, Shenandoah, Pa.; Jefferson Medical College, Philadelphia, 1884; died, January 12, at the Fountain Springs Hospital, aged 59.

**Lycurgis Rogers**, Negley, Ohio; State University of Iowa College of Medicine, Iowa City, 1893; died, January 9, from pleuropneumonia, aged 69.

**Charles Thacher Hubbard**, Taunton, Mass.; Medical School of Harvard University, Boston, 1861; Civil War veteran; died, January 16, aged 81.

**Burney J. Kendall**, Geneva, Ill.; University of Vermont College of Medicine, Burlington, 1868; died, January 11, from angina pectoris, aged 76.

**John William Pancoast**, Philadelphia; University of Pennsylvania, Philadelphia, 1892; died suddenly, January 4, from heart disease, aged 52.

**John Henry Sparling**, Boston; University of Manitoba, Faculty of Medicine, Winnipeg, 1891; died, January 5, from heart disease, aged 59.

**Benton Houston Criley**, Los Angeles; Jefferson Medical College, Philadelphia, 1871; died, January 10, from cerebral hemorrhage, aged 71.

**Frank F. Grady**, North Yakima, Wash.; Chicago Medical College, Chicago, 1888; died, December 26, from cerebral hemorrhage, aged 64.

**Jacob Danford Sherrick**, Seattle; University of Michigan, Ann Arbor, 1877; also a druggist; died, December 8, from pneumonia, aged 70.

**Lucius Ely Felton**, Hanford, Calif.; Bellevue Hospital Medical College, New York City, 1871; died, January 8, from pneumonia, aged 72.

**Gregory Delaney**, Emden, Mo.; Missouri Medical College, St. Louis, 1896; died, January 2, from carcinoma of the stomach, aged 71.

**Robert Hazlett Bullard** ⚕ Tridelfia, W. Va.; Medical College of Ohio, Cincinnati, 1877; died, January 11, at Oakmont, W. Va., aged 70.

**Peery Jackson Muncy**, Ferrum, Va.; Medical College of Virginia, Richmond, 1917; died, December 8, from pneumonia, aged 32.

**John E. Perry**, Wakefield, R. I.; Medical Department of Columbia College, New York City, 1873; died, January 5, aged 74.

**James Davis Biggs**, Greenup, Ky.; Kentucky School of Medicine, Louisville, 1893; died, January 10, at Oliver, Ky., aged 49.

**William C. Sibley**, Fairfield, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1891; died, January 10, aged 64.

**Albert Jasper Murdock**, Minneapolis; Medical Department of Columbia College, New York City, 1870; died, January 4, aged 74.

**John Ashworth Standring**, El Paso, Texas; Denver College of Medicine, Denver, 1899; died, January 1, aged 54.

**James Shearer McCartney**, Pittsburgh; Jefferson Medical College, 1856; died, January 3, from pneumonia, aged 89.

**P. M. Bilby**, Eldon, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1871; died, December 15, aged 78.

**William H. Betts**, San Antonio, Texas; Fort Wayne (Ind.) College of Medicine, 1880; died, December 19, aged 90.

**Harry C. Lessig**, Rainsburg, Pa.; Jefferson Medical College, Philadelphia, 1878; died, January 12, aged 70.

**James L. O'Neal**, Bradley, Ark. (license, Arkansas, 1903); died, January 9, from cerebral hemorrhage, aged 57.

**James Shelbourne Ewing**, Jonesville, Va.; Louisville (Ky.) Medical College, 1903; died, January 6, aged 46.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### WILLARD EALON OGDEN

#### A. "Specialist in Proctology" and His "Clinics"

Within the past few weeks a number of inquiries have reached THE JOURNAL from physicians in Ohio, Indiana and Pennsylvania. Those that follow are typical:

"I am in receipt of literature from H. L. Roberts, 1126 Masonic Temple, Chicago, advertising a clinic in Cleveland by Dr. Willard E. Ogden who claims to be a member of the Chicago Medical Society and the A. M. A. What can you say of this man and his methods?"

"I am enclosing a folder received a short time ago. I would be glad to know if Dr. Ogden is a member of the A. M. A. as he claims to be."

"The enclosed folder has been sent to many doctors in Indiana. The purpose is plain. The attached post card on this one was returned to him for further literature."

**PILES**

**CURED**

**Without Knife**  
**Without Pain**  
**Without Anesthetics**  
**Without Loss of Time**

The only way known to-day to tell the public about my method of treatment is to use the public press. That's why I advertise.

No charge for examination.  
No incurable diseases accepted.

**DR. WILLARD E. OGDEN**  
**36 West Randolph Street**  
N. E. Cor. Randolph & Dearborn Sts.  
Suite 405-406

**BEST CHICAGO REFERENCES**

Photographic reproduction of one of Ogden advertisements in Chicago newspapers at the time he was at 36 W. Randolph Street.

In each case the correspondents send in a four-page folder bearing the title "Proctology, A Clinic. Who? Where? Why?" Three of the four pages purport to answer the interrogations given on the title page. Under "Who?" we read:

DR. WILLARD E. OGDEN  
Chicago, Ill.

SPECIALIST IN PROCTOLOGY

Member Chicago Medical Society and A. M. A.  
Author of "Improved Method of Treating Rectal Diseases"  
Formerly associated with Drs. Burleson & Burleson,  
Grand Rapids, Mich.

Under the question "Where?" there appears the statement that "Dr. Ogden Will Hold a Clinic for The Treatment of Rectal Diseases" and the name of the city and the dates of the "clinic" are inserted with a typewriter.

Under "Why?" we read:

"Dr. Ogden does not use the usual surgical methods. His many years of experience in the treatment of Rectal Diseases (during which time he has been associated with the leading Proctologists of America) have

enabled him to develop a system of office treatment which is not taught by any other practitioner.

"Tear off, sign and mail attached post card and I will send you a booklet giving you full particulars as to the course.

Yours truly,

H. L. ROBERTS, Business Manager.

"Eighty-three per cent. of the people have some Rectal trouble. THIS IS THE DAY OF SPECIALISTS. Why not fit yourself to specialize in Proctology?"

The fourth page is a post card addressed to "H. L. Roberts, Room 1126, Masonic Temple, Chicago." On the reverse side there is a printed statement which the recipient is expected to sign to the effect that he is interested in "Dr. Ogden's Clinic" and wishes to have "full particulars of the course."

A visit to Room 1126, Masonic Temple, failed to disclose the name of H. L. Roberts, either on the door (or doors, for there are two rooms having this number) or on the office building directory board. In fact, Rooms 1126 seem to contain a somewhat miscellaneous assortment. The signs, either on the door or on the directory board, show that there is a public stenographer (who operates a "Mailing Service," and does "Addressing, Mailing, Multigraphing, Mimeographing"), a bookstore, a chocolate company, a publishing company, a lumber company, and one or two other concerns; but the name of "H. L. Roberts" does not appear. Incidentally, no "H. L. Roberts" is to be found listed in the Chicago telephone directory.

A few yards away from Rooms 1126 and on the same floor there appears the name, "Dr. Willard E. Ogden" on Room 1102.

According to our records, Willard Ealon Ogden was born in 1866. Before taking up the study of medicine he seems to have been a preacher. In 1899 he was graduated by the Saginaw Valley Medical College, Saginaw, Mich. He was licensed in Michigan in 1900, in Illinois and Indiana in 1913, and in Wisconsin in 1921. From 1900 until 1904 he practiced in Lyons, Mich.; from 1906 until 1911 he was at Ionia, Mich.

In 1911, he was in Grand Rapids, Mich., and was associated with Burleson and Burleson, an advertising pile cure concern. From some of the voluminous Burleson advertising on file, we learn that they "cure all diseases of the rectum (except cancer)"; and claim to have "the most successful method ever discovered," and to have cured "many desperate cases that have been given up to die." Furthermore, they "guarantee to cure in every case or make no charge."

On Jan. 1, 1914, Ogden was sending out a card to physicians in which he stated that he had removed from Grand Rapids, Mich., and LaPorte, Ind., to 36 W. Randolph St., Chicago, and that he would limit himself "exclusively to the treatment of diseases of the rectum." Later, Ogden was sending out an advertising booklet filled with testimonials.

In 1914, Ogden was carrying display advertisements in Chicago papers reading, in part, in large black-faced type: "Piles Cured Absolutely Without Knife, Anesthetics, Pain or Loss of Time. . . . Cure Guaranteed or Money Refunded."

### Foreword

FIRST of all, because I realize that it will not be considered exactly ethical by the Medical Profession, I wish to offer an explanation of this little booklet.

There are hundreds of good people who are suffering from some form of rectal disease, but who in fear of the Surgeon's knife, anesthetic and the after effects of an operation have never been relieved.

To them I say in all sincerity that without the knife, chloroform, ether or other anesthetic, and without any bad after effects I can and will effect a permanent cure, if they will but entrust their case to my care.

### To the Public

I further believe that in the interest of humanity everyone so afflicted should know and receive the benefit of my treatment. I therefore take the only method known today to bring my message to the people—the conservative use of the public press—and ask of my critics only an honest, fair, and thorough investigation of my work.

### Specialty

I am a Rectal Specialist. I limit my practice to diseases of the rectum only.

Photographic reproduction (reduced) of the first page of a booklet Ogden was sending out in the latter part of 1914.



In March, 1918, he became a member of the Chicago Medical Society and qualified for Fellowship in the American Medical Association, August, 1918.

In 1921, Ogden had a copyrighted mail-order course on the "Treatment of Rectal Diseases by Improved Method." This "course" consisted of thirty-eight pages of foolscap printed on one side in imitation typewriting. The material abounded in typographical errors. Among the proprietary products recommended in this "course" as "essential" to those taking it, was "Mecca Ointment." This nostrum, made by a Chicago concern, was declared misbranded in 1916 because of false and fraudulent claims made knowingly, recklessly and wantonly. The "course" was divided into ten parts, and with it, apparently, came ten consecutively numbered sealed envelopes, and the purchaser was instructed to open these envelopes, one at a time, as he completed the corresponding part in the "course." He would there find questions which were to be answered and returned to Ogden. This, according to the description, was to enable Ogden to determine whether it was necessary to "enter more into detail upon that particular subject," which, he stated, he would gladly do if necessary.

**Piles Cured WITHOUT the Knife**



**The Largest Institution in the World for the Treatment of Piles, Fistula and All Other Diseases of the Rectum (Except Cancer)**

WE CURE PILES, FISTULA and all other DISEASES of the RECTUM (except cancer) by an original PAINLESS DISSOLVENT METHOD of our own WITHOUT CHLOROFORM OR KNIFE and with NO DANGER WHATSOEVER TO THE PATIENT. Our treatment has been so successful that we have built up the LARGEST PRACTICE IN THE WORLD in this line. Our treatment is NO EXPERIMENT but is the MOST SUCCESSFUL METHOD EVER DISCOVERED FOR THE TREATMENT OF DISEASES OF THE RECTUM. We have cured many cases where the knife failed and many desperate cases that had been given up to die. WE GUARANTEE A CURE IN EVERY CASE WE ACCEPT OR MAKE NO CHARGE FOR OUR SERVICES. We have cured thousands and thousands from all parts of the United States and Canada. We are receiving letters every day from the grateful people whom we have cured telling us how thankful they are for the wonderful relief. We have printed a book explaining our treatment and containing several hundred of these letters to show what those who have been cured by us think of our treatment. We would like to have you write us for this book as we know it will interest you and may be the means of RELIEVING YOUR AFFLICTION also. You may find the names of many of your friends in this book.

We are not extensive advertisers as we depend almost wholly upon the gratitude of the thousands whom we have cured for our advertising. You may never see our ad again so you better write for our book today before you lose our address.

**Drs. Burleson & Burleson**  
Rectal Specialists  
The Burleson, Grand Rapids, Mich.

Photographic reproduction (greatly reduced) of an advertisement of the Burleson concern with which Ogden was connected previous to 1914, and which connection he is capitalizing in his present advertising.

Furthermore, the purchaser had the privilege of asking questions of Ogden relative to symptoms, diagnosis and treatment for a period of six months after the purchase of the "course." Although, in Ogden's opinion, "you should have the subject well understood long before that time."

The charge for this course and "services as outlined" was \$200, but in order to show his confidence in the ability of those who purchased it, Ogden was willing to take \$100 down and the other \$100 paid in "five per cent of monies received from CURED patients" until the balance was paid.

Reverting to the present "post-graduate course" and "clinic": Those who send in the postal card to "H. L. Roberts" receive a form-letter, signed "H. L. Roberts" in facsimile handwriting, stating that information was enclosed "regarding THE OGDEN METHODS" and stating that Dr. Ogden would be in Indianapolis or Cleveland or Pittsburgh, as the case might be, on a certain date and that the fee for the "clinic" would be \$100. With this letter is an eight-page pamphlet

entitled "Some Facts Concerning the Ogden Method of Treating Rectal Diseases." The first page is headed in black-faced type: "About References and Endorsements." It then states that the "usual references and endorsements are omitted from this booklet." Further:

"As to Dr. Willard E. Ogden: The professional and social standing of Dr. Ogden is such that he does not need to offer any."

"As to 'THE OGDEN METHOD' and its value to you in your professional work: What others say or think has little if any weight. You are your own man. You do your own thinking. You decide for yourself—Do you not?"

The booklet gives an outline of the "Course of Instruction," which is almost identical, word for word, with the outline given in the letter advertising the mail-order course previously referred to.

The booklet further states that "THE OGDEN METHOD has entirely eliminated the use of cautery, the ligature or any injections, in the treatment of hemorrhoids," but that "the use of the electric current has proved to be the very correct method in such cases, as will be demonstrated at the clinic." The booklet reiterates the statement that Ogden's association with the Burleson and Burleson concern at Grand Rapids makes him "eminently well qualified to instruct members of the medical profession in this important branch of the medical science!"

In addition to this booklet there is a four-page advertising leaflet illustrating and describing the "Ogden Rectal Cabinet" and also the "Ogden Rectal Table and Stool." There is also a little postcard—addressed, of course, to "H. L. Roberts"—for the physician to fill in stating that "you may enroll me as intending to attend Dr. Ogden's Clinic in Proctology, to be held at \_\_\_\_\_." Should the recipient not fill in and mail this enrolment card he gets another form letter calling attention to the fact that the enrolment card has not been received and stating further that "available hotel facilities make it necessary to limit our enrolment to twenty students."

Careful search fails to disclose that Dr. Willard Ealon Ogden has ever distinguished himself in the practice of the specialty in which he now wishes to instruct physicians. Equally careful search fails to show that Dr. Ogden has ever published a paper either on any proctologic subjects or on any other phase of medicine or surgery. Neither does there seem to be any evidence for the claim that Dr. Ogden "has been associated with the leading Proctologists of America."

## Correspondence

### THE ADAPTATION OF INFANT WELFARE WORK TO PRIVATE PRACTICE

To the Editor:—The present era is witnessing an intensification of the ideas of preventive medicine. Always greater in idealism than their contemporaries, physicians have felt their responsibility—not only that personal responsibility to fellow members felt by the craftsman or the merchant to his particular association, but also a sense of responsibility and obligation to the community at large. Every medical discovery of possible practical value to humanity made by a physician has been made available to both the public and the medical profession gratis. The technic of this transfer has usually been by means of the "board of health." When the typhoid bacillus was sufficiently correlated to typhoid fever, the state established methods of milk, food and water inspection. A study of the tubercle bacillus has led to the establishment of municipal and state dispensaries and sanatoriums. Elaboration of our knowledge of contagious disease leads to constantly changing laws of quarantine. The dependence of pellagra and beriberi on food developed a new dietary code, and more recently the practicability of toxin-antitoxin mixture has led to its adoption by various municipal agencies. It would seem that as soon as the medical profession has so perfected a study as to make feasible its application on a broad scale, this function has been assumed by the state.



Undoubtedly, with every increase in the power of the public health department, a number of physicians have sensed danger to their profession and, from loyalty to their own, have voiced protest. But in every case a group more altruistic, feeling deeper responsibility to the entire community, has advocated the change. In every instance this has come.

During these developments, however, the medical profession has never really suffered. It has protected its own interests by offering much the same service as that of the state. Owing to political conditions, a mass of the public prefers the services of a private physician even in preventive work, while those less fortunate financially are cared for at public expense.

Until recently, preventive medicine has been mainly concerned with the control of infectious disease. Such problems as infant feeding were too complex and too unsettled to be feasible for organized effort; but the individual study and enthusiasm of the last ten years has revolutionized and decidedly simplified the principles of infant feeding. Diarrheas of obscure and baffling origin, ascribed to every possible hypothetic cause, are now placed as simple dietary failures, too much carbohydrate, too little carbohydrate, lack of vitamin, or improper balance between food constituents. Infant feeding becomes relatively simple. With the newer technic, privately endowed infant welfare societies working in a spirit of preventive medicine have shown it practicable to direct the diets of large groups of infants, to keep them happy, healthy and thriving, and to decrease infant mortality by incredible figures. No sooner had this been demonstrated than the state grasped the idea and municipal welfare stations entered the field. Private enterprise is now developing the field of cardiac clinics, and schools are established especially for these patients.

This idea is spreading to the care of adults, and in a rather vague, indefinite way come rumors of health centers and other propaganda for preserving the health of the adult and his ability to work. The state is as yet far from adopting practical measures along these lines. It would seem reasonable to assume that the idea must first be proved practicable by groups of physicians in private practice. But already another struggle is on. Opponents loyal to the medical profession denounce such tendencies. Their ideals of citizenship rest temporarily on the shelf. Proponents with broader points of view favor another great medical sacrifice so as to bring about intervention for those unfortunates who must pay for efficient service by starvation, and who pay for inefficient skill by suffering and neglect.

Though these ideas have not yet crystallized, the germ is here. If in time to come the public makes such a demand, this demand will be granted. Physicians as a profession or by individual effort may stem the tide, but a democracy will always heed the call of 700 to one.

Is not the time ripe for the physician to look to the future? Must these ideas be thrust on the profession, or will it as in the past be a leader and educator of the layman? Why not give private patients the same benefit as will be offered by the state? Why not offer one's skill and experience not only for the cure of disease but also for its prevention? The public is not blind to such possibilities. The farmer gladly employs means for preserving the health of his cattle and hogs. Corporations employ high salaried attorneys to prevent lawsuits. Every adult goes periodically to the dentist. Why not offer preventive medical service to our patients.

Of all specialties, pediatrics has seized the idea most vigorously. Much of the activity of the modern pediatrician is devoted to keeping his little patient well. In introducing such ideas the physician finds enthusiastic cooperation. The mother is delighted in an interest which attempts to preserve her child's health. She gladly consents to routine examina-

tions that aim at prophylaxis. She is well satisfied to understand that orange juice, cod liver oil, phosphorus, calcium and iron are given at various times with a view of preventing disturbances rather than of curing them. Indeed, this idea, first conceived with regard to the nutritional disturbances, meets with such a welcome that by one's own practice one is almost forced into other fields. Smallpox vaccination, of course, is not new. The recent health department propaganda has resulted in a bombardment of questions as to the advisability of giving toxin-antitoxin mixture. Typhoid vaccination is well established. Mothers literally insist on prophylactic injections of pertussis vaccine in spite of the warning as to its doubtful efficacy.

Granted examinations at stated intervals, routine supervision of the diet, and prophylactic procedures as regards infectious disease, a children's practice becomes a source of great satisfaction and pleasure. Such work is the finest feature of the day's duties.

Is not the time ripe for the general practitioner to offer in an organized way some such service to adults? Such a slight adaptation to the demands of the present would mean much to the general public and to the physician as well. One might truly feel that he was entering a new era. "State medicine" might grow in influence and no cloud darken the medical horizon. The altruistic activities of the physician would be compatible with professional livelihood. He himself would prosper in attempting to actualize his abstract dreams. Medical ideals harmonizing with medical prosperity would thrive in an atmosphere of health and happiness.

JESSE R. GERSTLEY, M.D., Chicago.

#### THE MICHIGAN STATE MEDICAL SOCIETY AND THE MEDICAL SCHOOL OF THE UNIVERSITY OF MICHIGAN

*To the Editor:*—During the past years, and especially through this last year, rumors and misstatements have appeared in the medical as well as the lay press. They were concerned with compulsory health insurance, "state medicine," socialization of medicine, administrative policies of the Medical School of the University of Michigan, and the antagonism of the medical profession of Michigan.

Jan. 11, 1922, in Detroit, the council of the Michigan State Medical Society, and President Burton and a committee of the University of Michigan met in conference. As a result of that conference, we desire to make the following announcements to the profession and public of this country over our signatures:

1. A basis of mutual understanding has been reached, and past apparent differences have been obliterated.

2. The university and its medical school are not in favor of "state medicine," so called, nor do they indorse or subscribe to those policies or movements that have for their object the establishment of any such forms for the practice of medicine.

3. Dr. Hugh Cabot, dean of the medical school, has been and is opposed to "state medicine," so called. He desires his opposition to be known to the entire profession, and that in the past he has been unjustly accused of being favorable to that type of socialization of medical practice.

4. In response to the invitations of the president and council of the Michigan Medical Society, the University of Michigan, through its extension division and medical school, has expressed its desire and readiness to educate the public in regard to scientific medicine and the benefits to be derived therefrom.

5. The medical school is concerned chiefly with the education of students in scientific medicine, with the promotion of



medical research, and with cooperation with the profession in the advancement of scientific medicine in Michigan.

To these ends have we pledged ourselves and through duly appointed representatives we propose to enter into a campaign of concerted and cooperative activity. Coincident with this action, we believe that the profession at large should be acquainted with our avowed attitude. We therefore issue this statement at this time for the explicit purpose of discrediting false assertions of the past and to make clear for the future the policies and purposes of the principals concerned in this announcement.

THE MICHIGAN STATE MEDICAL SOCIETY:

W. J. KAY, President,

W. J. DU BOISE, Chairman of the Council.

THE UNIVERSITY OF MICHIGAN:

MARION L. BURTON, President,

HUGH CABOT, Dean of the Medical School.

### "CIRCUMCISION PREVENTS SYPHILIS"

To the Editor:—In THE JOURNAL, Aug. 27, 1921, appears an abstract of an article in the *Virginia Medical Monthly* by Irvine, who asserts that nation wide circumcision would practically stamp out syphilis in a few years. I have not seen the article itself so that I do not know what arguments the author adduces; but if his claim is true, it would follow that syphilis should be very rare among Mohammedans and Jews, both of whom practice circumcision as a religious rite. What the statistics of syphilis among Jews in America is compared with other races I do not know; but the disease is frightfully common in Persia among both Mohammedans and Jews. The impression derived from ten years of practice of medicine in Persia is that syphilis is much more in evidence than in America, and that its incidence is steadily and rapidly increasing. As practically all the male population of Persia is circumcised, this evidence would seem to disprove the value of circumcision as a prophylactic measure.

M. A. ZOECKLER, M.D., Daulatabad, Malayir, Persia.

### "THE MODE OF PRODUCTION OF THE SO-CALLED VESICULAR MURMUR OF RESPIRATION"

To the Editor:—I have read with much interest Dr. Bushnell's article on vesicular murmur (THE JOURNAL, Dec. 31, 1921, p. 2104), and it would seem to me that his conclusion that the sound of inspiration arises or originates in the larynx from a common sense standpoint is not well founded.

If we are to assume that the normal murmur arises in the larynx during inspiration, why should we not be warranted in also assuming that bronchovesicular breathing and even sonorous râles originate in the same manner? This assumption would upset our present interpretation of physical signs.

H. F. GAMMONS, M.D., Dallas, Texas.

[This letter was referred to Dr. Bushnell, who replies:]

The difficulties will, I think, be removed if it is noted that I say that the breath sounds *originate* in the larynx. My paper states distinctly that the sounds of vesicular and of bronchial breathing, *as we hear them over the thorax*, owe their characteristics to the thorax and to the bronchi, respectively. But these air-spaces function as resonators and, like other resonators, do not originate sound; they reinforce existing sounds of proper pitch. Therefore, when the larynx is silent the thorax also is silent. It is only in this way that we can reconcile two facts: first, the undoubted fact that the vesicular murmur has been heard under conditions in which the vocal cords are excluded; second, the fact, which I con-

sider to be established, that when the glottis is opened widely enough the vesicular murmur disappears. While this view throws a very different light on the mode of production of both normal and abnormal breath sounds, I do not see that it affects materially the interpretation of physical signs. The vesicular murmur, as we hear it, is still caused by the vibrations of the air within the pulmonary alveoli, and the sounds of bronchial breathing are still produced in the bronchi.

I have, of course, no belief that the larynx has any part in the production of sonorous, or other, râles.

G. E. BUSHNELL, M.D., Bedford, Mass.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### VIBRATIONS OF MUSICAL TONES

To the Editor:—Please inform me as to the number of double vibrations per second for the octave of musical tones as listed:  $c^2$  (512 d. v.),  $c^2$  sharp,  $d^2$ ,  $d^2$  sharp,  $e^2$ ,  $f^2$ ,  $f^2$  sharp,  $g^2$ ,  $g^2$  sharp,  $a^2$ ,  $a^2$  sharp,  $b^2$ ,  $c^3$  (1,024 d. v.). J. N. STROOPS, M.D., and R. P. STROOPS, M.D., Scottsbluff, Neb.

ANSWER.—The vibrations of musical sounds are of particular interest to otologists. The number of double vibrations per second in the octave mentioned are:

	Equally Tempered	Physical
$c^2$ .....	512	512
$c^{\sharp 2}$ .....	542.4 +	533.3 +
$d^2$ .....	574.2 +	576.0
$d^{\sharp 2}$ .....	608.9 —	600.0
$e^2$ .....	645.1 —	640.0
$f^2$ .....	683.5 —	682.7
$f^{\sharp 2}$ .....	724.1 —	711.1 +
$g^2$ .....	767.1 —	768.0
$g^{\sharp 2}$ .....	812.7 —	800.1
$a^2$ .....	861.9 —	853.3
$a^{\sharp 2}$ .....	912.3 —	888.9 —
$b^2$ .....	966.5 —	960.0
$c^3$ .....	1,024	1,024

The ratios of the notes of the major diatonic scale are, with respect to the keynote: 1,  $\frac{9}{8}$ ,  $\frac{5}{4}$ ,  $\frac{4}{3}$ ,  $\frac{3}{2}$ ,  $\frac{5}{3}$ ,  $\frac{15}{8}$ , 2. By multiplying the vibrations per second of the keynote by these ratios, respectively, the vibrations per second may be obtained for each of the notes of such scale. This is the exact physical scale. In order to obtain the vibrations per second of the sharp of any note, multiply by  $\frac{25}{24}$ . In order to obtain the vibrations per second of the flat of any note, multiply by  $\frac{24}{25}$ . The sharp of  $c^2$  and the flat of  $d^2$  do not agree, and therefore in order to make a keyboard which it was possible to use, a scale called the "equally tempered scale" was invented and is now used in virtually all music.

In order to obtain the vibrations per second of any note on the piano, multiply the vibrations per second of the preceding note by  $\sqrt[12]{2}$ . This applies for the complete chromatic scale. However, the pitch 512 vibrations per second is not used on the piano. International pitch uses 517.12. Assuming 512 to be correct, the other values are given above.

### ACETIC ETHER AS A PEDICULICIDE

To the Editor:—Please summarize briefly the "Safe and Quick Acetic Ether Method of Getting Rid of Head Lice," as recommended by Dr. Walter Schnell in the *Deutsche medizinische Wochenschrift* 47:1254 (Oct. 20) 1921, and mentioned in THE JOURNAL, Jan. 7, 1922, p. 76.

FRANCIS SCHILL, JR., M.D., Johnstown, Pa.

ANSWER.—For the application of acetic ether (ethyl acetate) to rid a subject of head lice, Schnell recommends a special type of hood, which, while fitting the head tightly at the outer border, so as to prevent the escape of vapors, has a roomy crown with sufficient space for the hair to hang loose, thus permitting the fumes of ethyl acetate to penetrate to all parts of the head. On a thin layer of absorbent material (artificial cellulose), from 5 to 10 c.c. of ethyl acetate is distributed as evenly as possible over the hairy scalp, whereupon the hood is immediately applied and drawn tight across the forehead by a band of porous material within the hood and tied behind the head, while another band beneath the chin secures the lower portion. The lice are usually all killed at



the end of fifteen minutes, but it is safer to leave the hood on for thirty minutes. As a rule, the nits are also killed by one application, but it is not superfluous to give a second application after an interval of a week, when any nits that may have escaped will have hatched out. He warns that in the presence of a perforated tympanic membrane, the ears should be protected by rubber stoppers. When the treatment is given by laymen, it is well that this precaution be always taken.

#### STAINING AND EXAMINATION METHODS FOR GONOCOCCI AND SPIROCHETES

*To the Editor:*—1. Please give a formula of a satisfactory staining solution for microscopic examination of gonorrheal smears: a solution that can be kept on hand for some time in a physician's office without the solution undergoing deterioration, or only slight deterioration that will not affect the staining of the gonococci.

2. Outline the steps to get the best results in staining and examination of gonorrheal smears.

3. Give a brief outline of procedure in the microscopic examination with the dark field illuminator for *Spirochaeta pallida*.

4. Is the dark field on direct examination for the spirochete superior to any of the staining methods for the same germ? J. J., Iowa.

**ANSWER.**—1. Loeffler's alkaline methylene blue solution is a good single stain and improves on standing. Thirty cubic centimeters of saturated alcoholic solution of methylene blue is added to 100 c.c. of a 1:10,000 aqueous solution of potassium hydroxid.

2. The smears should be thin and taken carefully from the foci that are suspected to be the seat of infection. Any standard laboratory manual may be consulted for the steps in staining and for the directions for Gram's stain, which should be used also.

3. The lesion is cleaned with gauze and water to remove the superficial purulent material, and a drop of serum is squeezed from the depth of the sore and examined in the dark field. If antiseptics have been used on the lesion, a dressing of physiologic sodium chlorid solution should be applied for twenty-four hours, when a dark field examination may be made, or a drop of fluid may be withdrawn from the swollen inguinal or regional glands and examined.

4. The dark field method is superior to any staining method.

#### TESTS OF LIVER FUNCTION (DEDICHEN; KINBERG)

*To the Editor:*—What are the (1) gelatin and glycocholic test of liver function of Dedichen and (2) the provocative amino-aciduria test of Kinberg? Where can I read details of them?

CHARLES A. PANNETT, London, England.

**ANSWER.**—1. Dedichen maintained that urobilinuria is a sign of absolute insufficiency of the liver, and devised a test to detect urobilin in the feces and urine. Tincture of iodine is added, drop by drop, to the material to be tested, and then an equal amount of Schlesinger's reagent. Immediate filtration is done. If urobilin is present, fluorescence takes place. The test is described fully by Dedichen in the *Norsk Magazin for Lægevidenskaben* 78:124 (Nov.) 1917.

2. In his tests of the functional capacity of the liver, Kinberg used gelatin instead of glycocholic. After a constant test diet with low nitrogen content for several days, 50 gm. of gelatin dissolved in hot chocolate is taken fasting. In case of liver disease there is an increase in the output of amino-acids, except in catarrhal jaundice and congestion of the liver. Kinberg described his test fully in *Hygiea* 81:689 (Aug. 31) 1919.

#### HANDBOOKS ON CLINICAL MICROSCOPY AND ON MUNICIPAL PUBLIC HEALTH WORK

*To the Editor:*—Please give me the names of one or two good handbooks or compends on clinical microscopy that may be used by practitioners for clinical office work and for reference, and the names of two or three handbooks on municipal public health work.

THOMAS W. RHODES, M.D., East Liverpool, Ohio.

**ANSWER.**—

Webster's Diagnostic Methods, P. Blakiston's Son & Co., 1012 Walnut Street, Philadelphia.

Emerson: Clinical Diagnosis, J. B. Lippincott Company, Washington Square, Philadelphia.

Mallory and Wright: Handbook of Pathological Technique, W. B. Saunders Company, West Washington Square, Philadelphia.

Overton and Denno: The Health Officer, W. B. Saunders Company, Philadelphia.

Rosenau: Preventive Medicine and Hygiene, D. Appleton & Co., 20-25 West Thirty-Second Street, New York.

Park: Hygiene, Lea & Febiger, 706 Sansom Street, Philadelphia.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vighne, Juneau.  
CALIFORNIA: Los Angeles, Feb. 13-16. Sec., Dr. Charles B. Pinkham, 342 Flood Bldg., San Francisco.

CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd. Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, March 14. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.

MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.

MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.

NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools, Part I, Feb. 15-17; Part II, Feb. 20-21. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia.

NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.

WYOMING: Cheyenne, Feb. 13-15. Sec., Dr. J. D. Shingle, 206 Citizens Bank Bldg., Cheyenne.

### California June Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the oral and written examination held at San Francisco, June 27-30, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 133 candidates who took the physicians' and surgeons' examination, 118, including 11 osteopaths, passed, and 15, including 4 osteopaths, failed. One candidate was licensed to practice as a chiropractor. Of the 12 candidates who took the examination for chiropody, 11 passed and 1 failed. Of the 17 candidates who took the drugless practitioners' examination, 16 passed and 1 failed. Two candidates were licensed to practice midwifery. One hundred and sixty-two candidates were licensed by reciprocity. Seven candidates were licensed on government credentials. Three candidates received osteopathic certificates by reciprocity and 5 candidates received drugless certificates by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists.....	(1921) 82.1, 82.8, 83.3, 83.4, 84.2, 85.4, 86, 86.7, 86.9, 87.2, 87.3, 88.4, 89.3, 89.6, 90.3	(1921)	80.4,
College of Physicians and Surgeons, Los Angeles....	(1918) 75.7, 77.6, 77.9, 79.9, 80.2, 80.4, 81.2, 82.6, 82.7, 85.2, 86, 86.6, 86.9, 86.9	(1918)	75.4,
College of Physicians and Surgeons, San Francisco....	(1921) 76.6, 82.3, 82.4, 85.3	(1921)	75,
Leland Stanford Junior University.....	(1921) 83.6, 85, 85.1, 85.9, 86.3, 86.4, 88.1, 88.9, 88.9, 94.4	(1921)	82.7,
Oakland College of Medicine and Surgery.....	(1920) 84.6, 85.2, 85.4, 85.4, 85.6, 86.2, 86.3, 86.3, 86.6, 86.9, 87.1, 87.3, 87.8, 87.9, 88, 88.1, 88.1, 88.4, 89, 89, 91.8	(1920)	84.7
University of California.....	(1920) 75.8, 81.7, 83.3, 83.6, 83.7, 84, 84.1, 84.5, 84.6, 85.2, 85.4, 85.4, 85.6, 86.2, 86.3, 86.3, 86.6, 86.9, 87.1, 87.3, 87.8, 87.9, 88, 88.1, 88.1, 88.4, 89, 89, 91.8	(1920)	81.3,
Northwestern University.....	(1917) 89.5, (1920) 83.4, 83.7	(1917) 89.5, (1920)	87.2,
Rush Medical College.....	(1920) 80.9, (1921) 80.7, 87, 87.6	(1920) 80.9, (1921)	87, 87.6
Indiana University.....	(1917) 80.4	(1917)	80.4
State University of Iowa College of Medicine.....	(1920) 80, 88.3	(1920)	80, 88.3
Johns Hopkins University....	(1916) 83.1, (1919) 79.3, (1920) 88.2	(1916) 83.1, (1919)	88.2
St. Louis University School of Medicine....	(1920) 87.9, (1921) 90.1	(1920) 87.9, (1921)	90.1
Cornell University .....	(1920) 86.4	(1920)	86.4
University of Oregon.....	(1921) 84.7	(1921)	84.7
Jefferson Medical College.....	(1919) 85.1	(1919)	85.1
University of Pennsylvania.....	(1919) 75, (1920) 91.3	(1919) 75, (1920)	91.3
Vanderbilt University .....	(1921) 80.8	(1921)	80.8
University of Texas.....	(1917) 83.6, (1920) 82.8	(1917) 83.6, (1920)	82.8
Queens University .....	(1912) 87.1	(1912)	87.1
University of Palermo.....	(1913)* 76.6	(1913)*	76.6
School of Medicine and Pharmacy of Jalisco.....	(1912)* 78.1	(1912)*	78.1
University of St. Vladimira.....	(1915)* 77.3	(1915)*	77.3
Osteopaths.....	75, 75, 75, 75.5, 79.1, 80.3, 82, 84, 85.2, 88.4†		

### FAILED

College of Physicians and Surgeons, San Francisco....	(1918) 68
State University of Iowa College of Medicine.....	(1901) 30
Minneapolis College of Physicians and Surgeons.....	(1890) 67
St. Louis College of Physicians and Surgeons.....	(1888) 43
Washington University .....	(1903) 58
University of Buffalo.....	(1920) 72.1
Meharry Medical College.....	(1893) 51
University of Nashville.....	(1899) 61
Aichi Prefecture Special Medical School.....	(1908)* 59.2



Kyushu Imperial University, Fukuoka.....	(1913)*	62.9
Escuela de Medicina, Oaxaca.....	(1908)*	61.3
Osteopaths .....	40, 44, 69.5, 70	
College	LICENSED BY RECIPROCITY	Year Reciprocity Grad. with
University of Arkansas.....	(1915)	Arkansas
Denver College of Physicians and Surgeons.....	(1909)	Colorado
University of Colorado.....	(1911)	Idaho
Georgetown University .....	(1904)	Idaho
Howard University .....	(1909)	S. Carolina
Emory University .....	(1920, 2)	Georgia
American Medical Missionary College.....	(1900)	Montana
(1905) Michigan		
Bennett Medical College.....	(1914)	Illinois
Chicago College of Medicine and Surgery.....	(1910)	Wisconsin
(1913, 3), (1914, 2) Illinois, (1915) Utah,		
(1917) Illinois		
Chicago Homeopathic Medical College.....	(1902)	Montana
College of Physicians and Surgeons, Chicago.....	(1902)	Washington
(1904) Iowa, (1905), (1906) Illinois, (1907)		
Minnesota, (1910) Illinois, South Dakota		
Hahnemann Medical College and Hosp. of Chicago..	(1917)	Kansas
(1920) Illinois		
Harvey Medical College.....	(1904)	Oregon
Hering Medical College.....	(1906), (1910)	Illinois
Loyola University.....	(1916, 2)	Illinois
Northwestern University .....	(1902), (1908), (1910), (1912), (1913)	Illinois
Rush Medical College.....	(1882) Minnesota, (1894)	Illinois
(1895) Iowa, (1897) Washington, (1900) Illinois,		
(1902) Washington, (1908) Illinois, Indiana,		
(1912), (1917), (1918), (1920) Illinois		
University of Illinois.....	(1911) Illinois, (1915)	Missouri
(1917), (1920) Illinois		
Fort Wayne College of Medicine.....	(1900)	Indiana
Indiana Medical College.....	(1906)	Michigan
Physio-Medical College of Indiana.....	(1907)	Indiana
College of Physicians and Surgeons, Keokuk.....	(1895)	Illinois
State University of Iowa College of Medicine.....	(1920)	Iowa
Kansas Medical College, Topeka.....	(1894)	Louisiana
Hospital College of Medicine, Louisville.....	(1890)	Illinois
Kentucky School of Medicine.....	(1898) Indiana, (1906)	Penna.
University of Louisville Medical Dept.....	(1912), (1913)	Kentucky
Tulane University .....	(1912), (1920)	Louisiana
Medical School of Maine.....	(1903), (1911)	Maine
Baltimore Medical College.....	(1890)	Maryland
Johns Hopkins Univ.....	(1908) New York, (1910), (1915)	Maryland
Boston University .....	(1917)	Mass.
College of Physicians and Surgeons, Boston.....	(1890)	Mass.
Columbia University..	(1905), (1908), (1911), (1912), (1916)	New York
Eclectic Medical College of the City of New York...	(1912)	New Jersey
Long Island College Hospital.....	(1908), (1909)	New York
University and Bellevue Hospital Medical College...	(1915)	New York
University of Buffalo.....	(1910)	New York
Leonard Medical School.....	(1908)	Louisiana
Cleveland Homeopathic Medical College.....	(1909)	New York
Eclectic Medical Institute, Cincinnati.....	(1896), (1899)	Illinois
(1902) Ohio		
Medical College of Ohio.....	(1876) Illinois, (1898)	Kentucky
Pulte Medical College.....	(1910)	Ohio
Starling Medical College.....	(1891)	Oklahoma
University of Cincinnati College of Medicine.....	(1917)	Ohio
Willamette University Medical Dept.....	(1906), (1909)	Oregon
Jefferson Medical College.....	(1904) Iowa, (1908), (1909)	Utah
(1914) New Jersey, Pennsylvania		
Medico-Chirurgical College of Philadelphia.....	(1911)	Utah
Temple University.....	(1906) Pennsylvania, 1910)	Minnesota
(1917) Pennsylvania		
University of Pennsylvania.....	(1899)	Penna.
Western Pennsylvania Medical College.....	(1888)	Indiana
Mcharry Medical College.....	(1907) Texas, (1915), (1917)	Tennessee
(1918) Georgia		
Memphis Hospital Medical College.....	(1910)	Mississippi
Vanderbilt University .....	(1890)	Tennessee
Baylor University .....	(1916)	Utah
Harvard University.....	(1900) North Dakota, (1903)	Mass.
(1906) Maine, (1907) Nevada		
Tufts College Medical School.....	(1898), (1908)	Mass.
Detroit College of Med. and Surg... (1911), (1914), (1915)		Michigan
Grand Rapids Medical College.....	(1901)	Michigan
University of Michigan Homeopathic Medical School.....	(1908)	Penna.
University of Michigan Medical School.....	(1888)	New York
(1891) Colorado, (1908) Montana, (1909),		
(1919) Michigan		
Minneapolis College of Physicians and Surgeons...	(1899)	Washington
University of Minnesota College of Med. and Surg..	(1895)	Minnesota
American Medical College.....	(1897)	N. Dakota
Barnes Medical College.....	(1907)	Illinois
Ensworth Medical College.....	(1906)	Kansas
Kansas City Medical College.....	(1893) Texas, (1902)	Oklahoma
Medico-Chirurgical College of Kansas City.....	(1905)	Kansas
National University of Arts and Sciences.....	(1914)	Missouri
St. Louis College of Phys. and Surgs.....	(1905), (1906)	Illinois
Washington University .....	(1901)	Missouri
John A. Creighton Medical College.....	(1906), (1915)	Nebraska
Omaha Medical College.....	(1896)	Nebraska
University of Nebraska.....	(1903)	S. Dakota
Dartmouth Medical School.....	(1899)	New Hamp.
Albany Medical College.....	(1906) New Hampshire, (1908)	New York
University of Texas.....	(1907, 1919)	Texas
University of Vermont.....	(1915)	Indiana
Medical College of Virginia.....	(1917)	Virginia
Marquette University .....	(1914)	Wisconsin
Milwaukee Medical College.....	(1895)	Wisconsin
McGill University .....	(1904)	N. Dakota
University of Toronto.....	(1903) New York, (1911)	Colorado

Western University .....	(1910)	Ohio
University of Vienna.....	(1894)	Montana
University of Munich.....	(1908)*	Washington
College	ENDORSEMENT OF CREDENTIALS	Year Endorsement Grad. with
Rush Medical College.....	(1900)	U. S. Navy
Omaha Medical College.....	(1897)	U. S. Army
Columbia University .....	(1909)	U. S. Navy
Jefferson Medical College.....	(1913)	U. S. P. H. S.
University of Buffalo.....	(1897)	U. S. Army
Medical College of the State of South Carolina....	(1892)	U. S. P. H. S.
Marquette University .....	(1917)	U. S. Army
* Graduation not verified.		
† No grade given.		

Medical Economics

PHYSICIANS AND THE INCOME TAX

At this time all professional men are beginning to think about the income tax and to worry over the making of tax returns. As usual, THE JOURNAL has received letters from many physicians asking for information on the ways in which the income tax law affects physicians and for specific advice as to the general provisions of the law and the regulations. In previous years THE JOURNAL has endeavored to advise its readers on these points (THE JOURNAL, Jan. 10, 1920, p. 126; Feb. 12, 1921, p. 455.) Since the returns for last year were filed, a new law has been passed. The Revenue Act of 1921, approved by the President, became effective, Nov. 23, 1921. While the general provisions remain the same, there have been a number of changes.

GENERAL PROVISIONS

The general provisions of the law are the same for physicians as for any others. Every citizen of the United States, whether residing in this country or abroad and whether he derives his income from property in the United States or abroad, is subject to taxation. Resident aliens, whether their incomes are derived from sources within or outside the United States, must also file returns and pay the tax.

PERSONAL EXEMPTION

Under the new law, married persons, living with husband or wife, or the head of a family, may deduct \$2,500, if the net income is not in excess of \$5,000. This is an increase of \$500 over the previous law. If the income is in excess of \$5,000, then the exemption allowed is only \$2,000. For each dependent person in the household, a deduction of \$400 additional may be made. This is an increase from \$200 for each dependent under the old law. Dependency is defined as actual financial dependency and not mere legal dependency. The dependent must be under 18 or incapable of self support, on account of physical or mental disability. Single persons, as individuals, are allowed \$1,000 exemption.

WHO MUST FILE RETURNS

All persons whose net income for 1921 amounts to \$1,000 or over, must file returns, even if the exemptions are sufficient to relieve them of paying any tax. Internal Revenue Collectors state that blanks sent to persons having a supposedly taxable income will often be returned unfilled with the statement, "No taxable income." This is not accepted as legal evidence of exemption. If one's net income is over \$1,000, the burden of proving exemption lies with the individual, who must present a detailed and carefully prepared return under oath, as evidence of his exemption, just as though he had a taxable income.

FORMS FOR MAKING RETURNS

Those having a net income of less than \$5,000 should ask for and fill out Form 1040 A. Those having a net income of \$5,000 or over should ask for Form 1040. These forms, with instructions, can be secured from the Internal Revenue Collector of your district.

NEW LAW RETROACTIVE

While the new revenue law did not become effective until Nov. 23, 1921, the income tax provisions are retroactive to January, 1921, and apply to incomes for the entire calendar year of 1921.



## PROVISIONS REGARDING RETURNS

Failure on the part of the taxpayer to receive a blank does not excuse him from making a return. All income tax returns must be verified under oath before a notary public, judge, revenue collector or other person authorized to administer oaths. The forms when filled out must be delivered or mailed to the collector for the district in which the individual resides, and must be in the hands of the collector on or before March 15, together with a check for the entire tax or for an installment. Exemption is determined by the civil state of the taxpayer on the last day of the year. For instance, a man who marries during the last week in December is regarded as a married man for the entire year; a widower whose wife died in December and who has not since married is regarded as a single man for the entire year.

## SPECIAL PROVISIONS FOR PHYSICIANS

The foregoing general provisions are comparatively simple. It is when the physician begins to estimate his net income for 1921, in order to determine the amount on which he must pay an income tax, that he comes in contact with the special application of the law to physicians. The income tax law regards the physician as a business man. It applies the same rules to him that it does to any other business man. He is required to pay a tax only on his net income, i. e., on the difference between his gross professional receipts for the year and his total business expenses for the year. In this particular, the income tax law has been of great educational value to physicians, since it has made it necessary for them to keep their accounts so as to be able to determine their actual expenses and to separate their personal from their professional expenditures. Prior to the passage of the income tax law, physicians were all in the habit of saying, "I did a good business last year. I took in nearly \$15,000." They entirely overlooked the fact that expenses increase proportionately with business and that the actual income with a larger intake is often no greater than, if as large as, it is with the smaller receipts. Since the income tax law went into effect, physicians have been forced to keep books much more carefully. As a result, they are today better able to determine their actual financial standing at the end of any year.

Leaving out of account any proceeds which result from the sale or rental of house and lands, income from stocks, bonds and other investments, in which case the law applies to the physician exactly as it does to any other man, how is the income tax law to be applied to the peculiar conditions under which physicians carry on their professional work? Three things must be remembered.

## I. GROSS INCOME: WHAT IS IT?

A physician's gross income for the year is the sum of all the money he receives during that year for professional work, regardless of when the services were rendered. Money collected in January, 1921, for services rendered or operations performed in 1920 are a part of the income for 1921, the year in which it was received, and not of 1920, the year in which it was earned. Physicians' books should be kept so as to show the total amount of money received for professional services from Jan. 1 to Dec. 31, 1921, inclusive. The total is the gross professional income for the calendar year.

## II. PROFESSIONAL EXPENSES: WHAT MAY BE DEDUCTED?

The second principle to be remembered is that all expenditures necessary for carrying on one's practice during the year (except investments) are deductible. It is on this question of what constitutes allowable deductions that most physicians fall into difficulties. Deductible professional expenses are all the necessary expenses for the carrying on of practice or for material consumed in professional work. This would include office rent and maintenance, wherever the office is located, provided it is not in a building owned by the physician. If a physician maintains an office in his own house or in an office building which he owns, he cannot charge himself rent and deduct the amount. If he rents an office for business purposes alone, in a building outside his residence, then the entire rental is deducted. If his office is located in a rented house, in the house or apartment in which he also has his residence, then a part of the rental, in proportion to the amount of space used for business purposes, may be

deducted as office rent. The same rule applies to expenditures for heating, lighting and maintaining an office. If a physician having his office at his residence has a servant, part of whose time is devoted to office work, then part of her wages may be deducted. Salaries of office attendants, assistants, stenographers and the like are deductible. The fact that a physician occasionally sees a patient at his house does not justify him in making a deduction for rental. In order to be allowed expenses for office maintenance, he must actually have an office with regular office hours in his house.

*Drugs and Dressings.*—The cost of drugs, dressings and other material, actually used in the treatment of patients, is an expense and may be deducted; but the cost of instruments, appliances and equipment, which are to be used over a considerable period of time and which are a part of the physician's professional outfit, is an investment and not an expense. The distinction is based on the difference between expendable and nonexpendable property. Anything that is used up or consumed or which may be used up during the year is an expense. Anything that is of permanent use or value is an investment. Under this distinction, office furniture and equipment, instruments and apparatus would not be deductible, but the cost of drugs, dressings, breakable material, clinical thermometers, chemicals, etc., would be deductible.

*Transportation.*—Whatever form of transportation a physician uses for business purposes only, the cost of maintaining such transportation is a deductible expense. The original cost, however, is an investment, not an expense. The amount paid for an automobile which will probably last for a number of years cannot be deducted but so far as the physician uses an automobile for business purposes, the cost of operating is deductible. This includes gasoline, oil, tires, insurance, repairs, garage rental, chauffeur's wages, etc. In addition, the owner can charge off each year reasonable depreciation on the car; that is, the amount of the original cost of the car divided by the number of years for which the car can be used. This does not mean the number of years that the physician can use the car, but the number of years it can be used for any purpose. If the car is sold, the price received is an addition to the physician's income for the year. If the car is used both for professional and for personal purposes, or if it is used by the physician or his family for recreation, then the proportionate expense of operating the car for business purposes alone may be deducted. A physician doing an exclusive office practice, who merely uses his car to go down to his office in the morning and to go home at night, cannot deduct the operating expense, since he is using the car for his personal convenience and not as a means of gaining a livelihood.

The same rule applies to horses, if a physician uses them for business purposes, instead of an automobile. The original cost is an investment, but the maintenance and operation are deductible expenses. These would include feed and care of horses, rental of stable, wages of driver, repairs on carriage or sleighs, etc. Reasonable depreciation on horses, carriages, sleighs, harness and other equipment would be deductible.

*Books and Journals.*—Medical journals are an expense. Money paid out for subscriptions to them may be deducted, because they are of temporary value. Medical books are an investment, as a part of a physician's library, and the cost may not be deducted. But medical books become obsolete to varying degrees, depending on their character. Standard textbooks, such as works on anatomy and chemistry, are probably good for a lifetime, while many books are out of date and worthless in a few years. The general average is about twenty years, so that one twentieth of the cost of the physician's library may be deducted each year as depreciation. Any property purchased before March 1, 1913, when the first income tax law went into effect, must be estimated at its value at that time and not at its original value or purchase price.

*Medical Society Dues.*—Dues in medical societies of a strictly professional nature are a legitimate expense and may be deducted; but dues for social organizations, even if they are limited to medical men, are not deductible. Expenses incurred in attending medical society meetings are deductible. Prior to 1921, only railroad fare and Pullman fare were allowed. Last year, in addition to these expenses, the Commissioner of Internal Revenue ruled that, on actual business



trips, expenditures for meals and lodging were expenses and that this amount, less what one would have to pay at home for living expenses for the same period, could be deducted. The new ruling is still more liberal. Under the present law, the entire cost for meals and lodging for the entire time one is away from home on strictly business trips may be deducted, in addition to railroad and Pullman fare. Physicians attending meetings of state medical associations or the American Medical Association and other strictly professional meetings and conventions may deduct these expenses. Personal expenses incurred during this period, however, may not be deducted. THE JOURNAL is frequently asked whether the cost of a postgraduate course can be deducted. The law provides that money expended for postgraduate courses, like money paid for a medical education, is an investment. Expenditures for postgraduate work, therefore, cannot be deducted.

**Laboratory Expenses.**—Physicians maintaining a laboratory may deduct rent and maintenance expenses if the laboratory is separate from and in addition to the office expenses. They may also deduct salaries paid to laboratory assistants, cost of chemicals, breakable apparatus, roentgen tubes and plates. Expenditures for permanent apparatus are an investment and cannot be charged up as expenses. But such permanent apparatus is subject to depreciation, which can be deducted. Under the same ruling as on automobiles, deduction is made for the original cost to the physician or its value, March 1, 1913, divided by the total number of years which it can be used. Oculists furnishing glasses for patients can deduct the cost of this material to the oculist, provided two distinct charges are made on the doctor's books, one for his professional services in examining the eyes and one for the glasses for the patient. The first is a professional charge, which goes into the income, and the second is the cost of furnishing perishable material, which is a deductible expense.

**Contributions and Donations.**—Contributions and subscriptions to churches and other philanthropic, religious and humane organizations may be deducted, as well as contributions to educational institutions, etc.; but the amount deducted must not exceed 15 per cent. of the total income. Dues to clubs and other social organizations are personal and not business expenses, and cannot be deducted.

**Taxes Already Paid.**—Government taxes already paid on railroad or Pullman tickets, theater tickets, articles of luxury, club dues and society dues can be deducted, provided evidence of such payment can be produced. Uninsured and unrecoverable loss by fire, theft or other means is also deductible, provided satisfactory evidence of the loss can be produced.

**Total Deductions.**—All of the foregoing items are legitimate business expenses, and the sum total of them can be deducted from the total gross income.

### III. NET INCOME

The physician's net professional income is the difference between his gross professional receipts and his total professional expenses. This is the amount, less personal deductions, on which the income tax must be paid.

No attempt has been made to consider the exemptions or deductions which a physician may make on account of any income which he may have outside of his professional work, where he is, of course, subject to the same ruling as any other business man. Any receipts, such as interest on bonds, dividends on stock and any other business relations, or on property rented or sold, etc., must be added to his medical profession income and it will be subject to tax. Only those transactions which are a part of the physician's professional work have been considered.

It will be seen that it is wise to keep accurate accounts, not only of all money received but also of all expenditures, and to separate carefully business from personal and family expenses. The more carefully this is done, the easier will it be, at the end of the year, for the physician to know just how much it has cost him to carry on his practice, what is the exact amount of his personal expenses, and what are his financial returns for the year. It will also be easier for him to make out his tax returns and to secure those exemptions and deductions to which he is entitled. THE JOURNAL will be glad to answer, so far as possible, any questions on this subject.

## Social and Industrial Medicine

### THE PRESCHOOL NUTRITION CLASS

CHARLES D. EASTON, M.D.

WASHINGTON, D. C.

The Child Welfare Society of Washington, D. C., has extended its scope of work and, for the last two years, has included the important group of children of preschool age. A preliminary survey revealed among them a surprisingly large number of physical defects in addition to malnutrition. To find children, so young in years, showing evidence of structural impairment was, indeed, a surprise. To remedy the physical defects was a serious problem. The limited number of nurses in the employ of the society could ill be spared from their ever increasing duties and obligations to the babies. Moreover, it required more than one follow-up visit to convince doubting parents of the necessity of remedial measures—particularly so, for the children were neither complaining nor were they "sick."

The failure of many parents to recognize the importance of early remedial measures is responsible for the various physical and mental handicaps of schoolchildren. These are only too familiar to the medical inspectors of our schools. Accordingly, the Child Welfare Society has adopted in its campaign the slogan: "Make the Child Fit for School."

The nutrition classes, so successfully introduced by Dr. William R. P. Emerson, long ago proved their value in helping delicate schoolchildren. The element of competition and of rivalry brings forth a ready response in the older children. The application of the same principles to children from 2 to 6 years of age was undertaken with some misgiving. Thanks to generous friends of the society, the salary for a nutrition nurse was assured and two nutrition classes for underweight children of the preschool group established.

It may not be amiss, therefore, to record our initial experiences in this new public health adventure. The classes were in session twenty-one weeks, from Dec. 3, 1920, to May 9, 1921. Forty-five children were enrolled, consisting of twenty-six boys and nineteen girls. Their ages ranged from 2 to 6 years, with three exceptions. The latter were children aged 7, 8 and 10 years, respectively. The percentage of underweight varied from 4 to 20 among the boys, and from 6 to 17 among the girls. There were two boys with an underweight percentage of 20, and one girl with an underweight percentage of 17. There was a total of 140 defects among the boys, yielding an average of 5.6 defects per boy. The minimum number of defects was two, and the maximum eleven. The group of girls showed a slightly better record, with a total of 100 defects and an average number of 5.2 defects per girl. The minimum was one and the maximum number of defects was nine.

Complete physical examination was made of each child in the presence of a parent or the guardian, and the defects were pointed out. The twenty-four different kinds of defects consisted of malnutrition, hernia, hypspadias, undescended testicle, strabismus, keratitis, enlarged tonsils and adenoids, vaginitis, adherent foreskin, enuresis, intestinal parasites, kyphosis, lateral curvature, flatfoot, carious teeth, alveolar abscess, eczema, otitis media, cerumen, enlarged lymphoid glands congenital syphilis, endocarditis, glandular deficiency, and lastly, psychologic abnormality.

### MALNUTRITION AND ITS CORRECTION

The physical examination of the child at the health center served as a means of introduction to a fuller knowledge of the child, of his habits, and of his home surroundings. As



the result of these observations, the following causes have been found contributing to malnutrition: (1) Late hours. Many parents considered 9 o'clock as an early hour for bed, and not a few children went to bed at 11 and 11:30 p. m. (2) Overfatigue. This resulted from failure to observe periods of rest after overindulgence in play, and in some cases from lack of proper amount of sleep. (3) Insufficient outdoor air by day and night. Some children insisted on playing indoors. In the case of families living in apartment houses, the time for the outing of children was limited because of the household demands made on the mother. Moreover, the shortage of adequate housing facilities necessitated the use of bedrooms by too large a number of persons. In a few instances, the windows were not kept open enough during the night. (4) Two meals a day. These were the reward of "Late to bed and late to rise." (5) Irregular meals. The children eating at irregular hours usually found the family table deserted and grew accustomed not to eat at the table and preferred eating from the hand. (6) Improper diet. Coffee, tea, sausage, and sauerkraut were samples of the many unsuitable foods which were given to children under 6 years of age. Candy between meals seemed, also, to be the rule. (7) Diet of low caloric value. This was determined by calculating the calories of the child's dietary, which was submitted by the mother.

The correction in the child of such faulty habits as were discovered became an important task of the nutrition nurse. The ignorance of parents, fully as much as family tradition, proved to be at times serious obstacles on the highway to correct living. The function of the nutrition nurse was not to give the uninformed mother a postgraduate course in the preparation of food and in the determination of caloric values with or without the use of logarithms. Racial or traditional methods of preparing foods have withstood the test of time, and a mother's loyalty to them is likely to make her intolerant of the advice of dietitians, however sound the advice may be. The duty of the nutrition nurse is to impress on the mother the fact that coffee, tea and sausage, irrespective of chemical composition, caloric content and method of preparation, are improper articles of diet for children under 6.

#### ELIMINATION OF DEFECTS

Fully as important as the correction in the undernourished child of faulty diet and faulty mode of living was the elimination of such defects as were remediable. To attain this desirable result, 209 recommendations were made to the forty-five children who were enrolled in the classes. This amounted to 4.6 recommendations per capita. All of these were complied with, excepting 0.4 recommendation for each child.

The children were referred both to clinical agencies for examination and appropriate treatment, and to laboratory agencies for purposes of diagnosis. There were 131 clinical and seventy-eight laboratory recommendations; 114 of the former and seventy-four of the latter were followed. The clinical group consisted of the following recommendations which were complied with: three children treated by the endocrinologist, two by the aural surgeon, twenty-three by the dental surgeon, eighteen by the orthopedic surgeon, and four by the general surgeon; thirty-five children were examined by the rhinologist, and in twenty-one operation was advised and performed in twelve (at this writing four children are on the waiting list for operation); fifteen were vaccinated, two circumcised, and twelve examined by the mental hygienist. Thus, of all the clinical recommendations, 12.9 per cent. were refused. The greatest number of failures was among those referred for vaccination.

The laboratory recommendations which were complied with consisted of fifteen photographs, four roentgenologic examinations, five Wassermann reactions, six Pirquet tests, one

test for protein sensitization, fourteen microscopic blood examinations, fifteen microscopic examinations of stools, and fourteen urinalyses. In the laboratory group, the percentage of noncompliance was 5.1.

#### GAIN IN WEIGHT

Obviously, every reasonable resource was employed to have the children attain their normal weight; and, as indicated above, it required the cooperation of the child, the family, the nutrition nurse and the medical specialists. The results of this joint action were gratifying. Six children were graduated from the classes.

The accompanying table contains the data relative to the graduates.

GAIN SHOWN BY SIX GRADUATES

	Age, Years	Under-weight, Cent.	Defects, No.	Normal Gain	Actual Gain	Weeks to Graduate
1. Boy	3 4/12	10	9	3 oz. (85 gm.)	3 3/4 lbs. (1,701 gm.)	3
2. Girl	3 7/12	17	9	1 1/4 lbs. (567 gm.)	6 3/4 lbs. (3,068 gm.)	20
3. Girl	4 3/12	10	5	14 oz. (397 gm.)	4 1/2 lbs. (2,041 gm.)	13
4. Boy	4 10/12	6.4	2	1 lb. (454 gm.)	3 3/4 lbs. (1,701 gm.)	15
5. Boy	5 9/12	9.9	6	15 oz. (425 gm.)	8 3/4 lbs. (3,969 gm.)	14
6. Boy	7 8/12	4	6	1 3/4 lbs. (794 gm.)	5 lbs. (2,268 gm.)	13

Among the graduates, it might be stated in summary, there was an average percentage underweight of 9.5 per child with an average number of six defects. The minimum period required to reach the normal weight curve was three weeks, the maximum twenty weeks—yielding an average of thirteen weeks. During the same period, the total normal gain for the children might be represented as 6 pounds (2.8 kg.). The total actual gain, however, was 32 1/2 pounds (14.8 kg.), or 26 1/2 pounds (12 kg.) in excess of normal. Therefore, each graduate in an average of thirteen weeks gained an average weight of 6 pounds and 6 ounces (2.9 kg.) or almost 8 ounces (2.25 kg.) a week in excess of normal.

More significant than the record of successful achievement with six graduates was the fact that twenty-eight children were made "free to gain." In the latter group of children, every recommendation for the correction of both faulty habits and physical defects was carried out. Furthermore, the total gain of all the children enrolled in the two nutrition classes was 2,009 2/3 ounces (57 kg.). The total loss was 668 1/3 ounces (19 kg.), leaving a net gain of 1,341 1/3 ounces (38 kg.).

#### FAR-REACHING BENEFITS

The results of our efforts are not to be measured by the net gain in weight, however desirable. The influence of the class sessions has, indeed, been far reaching, for many subtle forces have been operative. The advantages of "class methods," in vogue for many years in the educational world, have become so obvious that they have been finally adopted in the dispensaries of the large hospitals throughout the country. Mothers and children in the nutrition classes are impressed with the beneficent results which follow compliance with simple recommendations. Symptomatology and treatment of disease find no place in the curriculum, for the dominant thought is physical well being. Moreover, ample evidence is available to offset erroneous notions which have been handed down from one generation to another. A child need no longer be of subnormal physique because his parents or grandparents have been victims, willing or otherwise, of malnutrition. The book of hygiene is open to all, and no department of medicine has a monopoly on it. In addition, the dread of operative procedure is dispelled. Mothers will unconsciously bring to mind the horrible pictures of the anti-vaccinationists and lay stress on the rare accident in tonsillectomies. In the classes, parents see the children who have



been vaccinated and those who have had their tonsils and adenoids removed. Far from being incapacitated, these children gain weight and serve as a great object lesson to the skeptics.

Despite their scant years, children in preschool nutrition classes display a well developed spirit of competition. This is evidenced in the interest shown in the leader of the class, and in the tears shed by the unsuccessful candidates for gold stars, or shed on failure to graduate. A child who has been ungovernable becomes amenable to suggestion when he realizes what he must do to gain in weight and "win his stars." Respect for authority reinforces the element of self-control. The child becomes a healthier child, and the foundation for better citizenship is strengthened.

"To make the child fit for school" commands the serious attention of all child welfare agencies. In no better way can its accomplishment be gained than through the means of nutrition classes for delicate preschool children, as our experiences have indicated.

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## Book Notices

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INSANITY AND MENTAL DEFICIENCY IN RELATION TO LEGAL RESPONSIBILITY. A Study in Psychological Jurisprudence. By William G. H. Cook, LL.D. Cloth. Price, \$4. Pp. 192. New York: E. P. Dutton & Co., 1921.

Although written by an English barrister, naturally with reference to English statutes, this book will be read with interest and profit by American physicians interested in medical jurisprudence. Embracing, as it does, analyses of decisions in 200 leading cases, it is of great value as a work of reference without regard to the theory advanced as to the legal responsibility of the insane, as to any acts which he may commit or any contracts into which he may enter. The chapter on definition and classification is particularly interesting as illustrative of the changing attitude of both the medical and the legal profession regarding insane persons. The bulk of the book is devoted to discussing the responsibility of the insane under both the criminal and the civil law. The chapter on evidence of insanity, dealing with both legal and medical methods of determining mental conditions, is especially interesting. The appendix contains a summary of English authorities on the control of insane persons, and suggestions for the improvement of governmental administration in this field. Owing to our different form of government, none of these administrative suggestions will apply to the United States. The last one, however, that the care of all persons of unsound mind be put under a subdepartment of the ministry of health, is of interest as showing the gradual expansion of such a department after it is once created.

GOUT. By Llewellyn Jones Llewellyn, M.B., Governor and Senior Physician, Royal Mineral Water Hospital, Bath. With a section on Ocular Disease in the Gouty. By W. M. Beaumont, Consulting Ophthalmic Surgeon to the South-Western Region of the Ministry of Pensions. Cloth. Price, \$7.50. Pp. 469, with 1 illustration. St. Louis: C. V. Mosby Company, 1921.

The first part of the well-written chapter on ocular disease is a description of the various types of diseases of the eye that have been found to occur in persons suffering with gout. It is in the nature of a verbal discussion, rather than a definitive clinical description, and is intended more for the perusal of the trained ophthalmologist than for the tyro. And then comes the meat. "Gouty iritis is not a clinical entity." Gout, that etiologic standby of British ophthalmologists from time immemorial for nearly every "itis" known to ophthalmology, is denied causative importance and is classed among the sequelae of that twentieth century child, focal infection. Beaumont comes to the conclusion that "it is unwarrantable to speak of 'gouty' ocular disease, for there is nothing of the inflammation specific of gout. We renounce the prefix in order that (1) we may not be lulled into false etiologic security and (2) we may approach the elucidation of the case

and the treatment thereof free from misconceptions." An earnest search for the etiologic factors of ocular disease from the standpoint of the American advocates of the focal infection theory is urged, and the author even comes out flat-footedly in favor of "state medicine" as an aid to such investigation.

THE BOOK OF POULTRY. Cloth. Price, \$5. Pp. 672, with illustrations. New York: The Macmillan Company, 1921.

This is a compilation of information by numerous authorities. Chapters on Mendel's law and mendelian experiments, on methods of breeding and influences affecting offspring, on control of fertility and methods of feeding, have much scientific interest. Hundreds of varieties of fowls, pheasants, ducks and geese are described and illustrated. This compendium on the care and control of the breeding of chickens makes one wish that as much were known of the same matters as they affect the human race.

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## Medicolegal

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### Board of Health Barring Traveling Shows

(*Benson v. Walker et al. (U. S.), 274 Fed. R. 622*)

The United States Circuit Court of Appeals, Fourth Circuit, says that this suit was instituted on April 30, 1920, against the defendants, constituting the board of health of Alamance County, North Carolina, and the sheriff of said county, to enjoin the sheriff from interfering with the operation of the complainant's show and to compel him to issue the proper license to conduct the show, after the sheriff had refused to accept the license tax and to issue the license, because, as he said, he had been forbidden to do so by the board of health of the county, pursuant to a resolution of that board. The resolution was to the effect that, whereas the county was just recovering from a serious epidemic, and, in other parts of the country, both within and without the state, epidemics of contagious and infectious diseases were very prevalent, and were likely to be spread and contracted by personal contact in dense crowds, and because the board was of the opinion that traveling shows, such as circuses and carnivals, were the means of transmitting and spreading dangerous and infectious diseases, and that their coming into Alamance County from other portions of the state, and from other portions of the country, with their attendant crowds, constituted a menace to the health of the people of the county, "therefore, be it resolved that until Aug. 1, 1920, all such traveling shows, usually denominated circuses and carnivals, be prohibited from exhibiting in Alamance County." The United States district court in which the suit was instituted granted a temporary injunction, which it, a few days later, vacated. The circuit court of appeals, in approving such vacation, says that it was not called on to determine whether the original injunction should have been granted or not, but merely whether there was error in vacating and discontinuing the same, and on that question it was entirely in accord with the court below. That the action of the board of health, sought to be enjoined and made inoperative, was respecting a matter clearly within the police power of the state, and within the peculiar province of the health authorities, was manifest, that is, the health of the county; and for a cause which the board found and certified would be inimical to the health of the community, namely, the gathering of large numbers of people from without, and from one community to another within their jurisdiction, would tend to the spread of the Spanish influenza, a disease which at that time, or shortly theretofore, had been epidemic, bringing death and much sickness and disease in the community. Nothing is better settled than that in the consideration of ordinances and laws of the character in question here, every intendment is to be made in favor of the lawfulness of the exercise of municipal power in making regulations to promote the public health and safety. It is not for the courts, in the administration of justice, to substitute their judgment for that of the legislative or municipal



authority or to interfere with the lawful exercise of the power and authority granted in furtherance of the ends desired, unless those acting have plainly and manifestly exceeded their power and authority to the prejudice of those affected. This is strikingly true in considering rules and regulations coming clearly within the domain and discretion of public health authorities. That the board of health, in the passage and carrying out of the resolution complained of, acted not with the proper motive and intent in the interest of the public health, but arbitrarily, unreasonably, and discriminatorily as against the complainant, involved questions of fact which should call for the strictest proof on his part, especially in dealing with public officials charged with the preservation of the health of the community.

#### Test for Physicians Prescribing Narcotics

(*Barbot v. United States (U. S.), 273 Fed. R. 919*)

The United States Circuit Court of Appeals, Fourth Circuit, in affirming a judgment of conviction of defendant Barbot, a physician, of violating the Harrison Narcotic Law, says that the facts in the case, that is, that the defendant prescribed, sold, and distributed drugs and narcotics as charged in the indictment, in large quantities, were not in dispute. Indeed, the defendant insisted on his right, as a licensed physician, so to do, and that he was acting from a humanitarian standpoint, and that, so far as the Harrison act inhibited him from so doing, it was in contravention of his constitutional rights. But he could not for a moment set up the defense of his conduct that, from his point of view, what he had done, though in the teeth of the law, was in the interest of humanity. An excuse for violating every law would be readily found, if such a defense could be interposed. The meaning and purpose of the act, as regards physicians, is manifest; namely, not that they may not in a proper case, in good faith, prescribe drugs for a patient whose malady is such that, in their professional judgment, the drug is necessary, but only that they may so prescribe, in good faith, for their patients in the course of their professional practice; and, of course, this does not contemplate prescribing drugs for persons who merely want them in order to gratify their appetites or desires, or because of their unfortunate habit of the use of the drugs. A careful review of the decisions as they exist at the present time makes clear the fact that, when a physician is charged with unlawfully selling or prescribing drugs under the Harrison Narcotic Law, the case turns largely on his good faith in prescribing drugs to his regular patients, for maladies requiring the administration of the drug, or on the question as to whether he prescribed for persons seeking his professional aid merely to procure the drug. In the latter case, the physician might, perhaps, in a single instance afford temporary relief for one whose condition demanded immediate treatment. To go further than this would enable every doctor to furnish the drug to addicts, or afford opportunity to them to procure all the narcotics they desired; since, unrestrained, they would go from one physician to another, and quickly destroy the whole purpose of the act in question.

#### Burden of Proof on Quarantine Officers

(*Ex parte Arata (Calif.), 198 Pac. R. 814*)

The District Court of Appeal of California, Second District, Division 1, in explanation of why it, on a writ of habeas corpus, ordered the petitioner discharged, when the health department of the city of Los Angeles had instructed the jailer and chief of police not to release her until she had submitted to an examination to determine whether she was infected with a communicable, infectious or quarantinable disease, says that at the hearing on the writ proof was not offered to be made that she was at the time of her arrest a woman of ill fame. That the health authorities possess the power to place under quarantine restrictions persons whom they have reasonable cause to believe are afflicted with infectious or contagious diseases coming within the definition set forth in Section 2979 a of the Political Code of California, as a general right, may not be questioned. It is equally true that, in the exercise of this unusual power, which infringes on the

right of liberty of the individual, personal restraint can only be imposed when, under the facts as brought within the knowledge of the health authorities, reasonable ground exists to support the belief that the person is afflicted as claimed; and as to whether such order is justified will depend on the facts of each individual case. When a person so restrained of his or her liberty questions the power of the health authorities to impose such restraint, the burden is immediately on the latter to justify by showing facts in support of the order. It might be proved, for instance, that the suspected person had been exposed to contagious or infectious influences; that some person had contracted such disease from him or her, as the case might be. Such proof would furnish tangible ground for the belief that the person was afflicted as claimed. But the court wishes here to emphasize the proposition, which is unanswerable in law, that a mere suspicion, unsupported by facts giving rise to reasonable or probable cause, will afford no justification at all for depriving persons of their liberty and subjecting them to virtual imprisonment under a purported order of quarantine.

Coming, then, to a case in which it is claimed that the person suspected is one whose habits are such as to warrant the belief that such person is afflicted with a venereal disease: The court may agree that in cases of persons who commit acts of prostitution—that is, acts that are commonly understood to fall within the “commercial vice” definition—such a majority of them may be afflicted with infectious venereal disease as to justify the health department in enforcing the preliminary measures as here shown as against any such; in other words, that, based on the experience of the health authorities as it was stated to be, it is reasonably probable that a person found to be of the class mentioned is so infected with such disease. If the health authorities rely on the claim that the person quarantined is a prostitute and hence likely to be afflicted with disease, then the burden is on the quarantine officers to establish the proof of the claim that the accused is of the class and character mentioned. If such person has been legally convicted of being of such class and character, the record of conviction may be relied on to establish the important fact. In the absence of such conviction, the burden will be with the health authorities to establish the fact by sufficient evidence; for it is the existence of that condition in the person suspected that furnishes the ground for the belief, as an inference only, that the disease exists. It will not do to allow the inference of probable cause to be drawn from a mere suspicion.

#### What Is Meant by Sick or Those with Infirmities

(*State v. Gardner (Mo.), 231 S. W. R. 1057*)

The Springfield (Mo.) Court of Appeals, in affirming a judgment of conviction of the defendant, a chiropractor, says that the statute provides that “any person attempting to treat the sick or others afflicted with bodily or mental infirmities,” without a license from the state board of health, shall be deemed guilty of a misdemeanor. The verdict of the jury found the defendant guilty as charged by “attempting to treat the sick or those afflicted with bodily infirmities by manipulating, adjustments, or massages.” It was contended that the use of the disjunctive “or” in the verdict annulled it, because it could not be certainly determined just what acts the jury found the defendant had committed. The court, however, does not think the verdict uncertain or open to the objection made against it. What the jury found was that the defendant had performed for the various witnesses who testified the service of alleged replacement of the bones of the spinal column by the process described as “adjustments,” “manipulations,” and “massages,” these terms of necessity all referring to the same thing—the replacement of those bones; and the defendant, who was plying his trade in open violation of the law, knew exactly of what he was convicted by the jury. The terms “sick,” and those afflicted with “bodily infirmities,” are not intended to designate two classes of persons, but the use of those terms in the statute (and in the information and instructions in this case) is simply the use of words to include all persons that have or think they have any ailments of any kind.



## Society Proceedings

### SOUTHERN SURGICAL ASSOCIATION

Thirty-Fourth Annual Session, held at Pinehurst, N. C., Dec. 13-15, 1921

The President, DR. RANDOLPH WINSLOW, Baltimore,  
in the Chair

#### Operation for Diaphragmatic Hernia

DR. HARVEY B. STONE, Baltimore: Abdominal exploration is essential in the great majority of cases of diaphragmatic hernia. Thoracic approach greatly facilitates the necessary operative steps. The method of choice, therefore, for the routine handling of these cases should be by combined abdominal and thoracic incisions. These incisions are best made separately instead of by the French method of a continuous incision.

#### Conservative Surgery in Nonmalignant Diseases of the Pelvic Organs

DR. E. P. HOGAN, Birmingham, Ala.: Conservative surgery includes a correct diagnosis and such preoperative, operative and postoperative treatment as will save life primarily and restore the patient to health and a normal or as nearly normal existence as possible. Diseases of the female pelvic organs rarely kill immediately. Repeated acute or subacute attacks may require operation. Women under 35 operated on for a nonmalignant disease of the pelvic organs should have the menstrual and, if possible, the reproductive function preserved. Radical operation may be indicated in older women.

#### Surgical Treatment of Extensive Basal Cell Carcinoma

DR. J. SHELTON HORSLEY, Richmond, Va.: In extensive basal cell cancers, in addition to cauterization and excision with a cautery, it is important to apply as soon as possible, to the raw surface from which the cancer was excised, the raw surface of a pedunculated flap transplanted from a distance to add an additional obstacle to the growth of the cancer by interposing its own natural resistance to the cancer cells.

#### Aneurysm of the Internal Carotid Artery

DR. NATHAN WINSLOW, Baltimore: Aneurysm of the internal carotid artery outside the skull, though rare, is not as infrequent as supposed. Before incising a unilateral lump in the neighborhood of the tonsil, especially if of long standing, one should look, feel, listen. Spontaneous cure may occur, but the usual termination in untreated cases is rupture into the fauces. The operation of choice is obliteration of the internal carotid proximal to the sac. If this is impossible, one should ligate the common carotid together with the external carotid between its origin and first branch. All branches of the external carotid proximal to its site of ligation should also be tied. The operative mortality is 20 per cent.

#### Periosteal Sarcoma in Association with Osteomyelitis

DR. R. L. RHODES, Augusta, Ga.: My three cases of sarcoma were associated with infection and necrosis of bone. The left tibia was involved in each case. There was no history of trauma or serious illness. There was local pain in two, and none in the other. *Staphylococcus aureus* infection was found in each case. The treatment consisted of mid thigh amputations. One patient died, and the other two are living, free from signs of recurrence, local or elsewhere.

#### Consideration of Some Nontuberculous Kidney Infections

DR. RAYMOND P. SULLIVAN, New York: The kidney is the eliminating organ for circulating microbes, and in the course of this elimination may itself be damaged in a variety of ways. Hematogenous infection may be restricted not only to a single kidney, but even to a circumscribed portion of the organ. Not only may the source of the infection be a general disease, but a distant and apparently insignificant focus may be responsible. Metastatic hematogenous infection of the kidney, perinephritic or paranephritic abscess, is not always easily recognized, and may be confused with intra-abdominal infections. A sudden attack of pain in the kidney

region associated with fever in a patient known to have a suppurative process elsewhere in the body should excite suspicion of metastatic kidney infection. Cystoscopy and pyelography are valuable aids, especially when urinary changes are incomplete, or the symptoms are referred to the healthy side. The treatment of perinephritic or paranephritic abscess is early drainage. When the suppuration involves the kidney parenchyma, or when the process is an acute fulminating one, nephrectomy is indicated.

#### Reconstruction of the Female Urethra and Vesical Sphincter

DR. EDWARD H. RICHARDSON, Baltimore: If there is complete absence of the sphincter, the construction of a compressor of the vesical neck through transplantation of the partially detached pyramidalis muscle, together with its anterior fascia, or of the pubic portion of the levator ani muscle, is the operation of choice. Reconstruction of the urethra is best accomplished by the simple submucous tunnel operation followed by the use of a retention catheter until epithelization occurs from the bladder. When an excess of scar tissue, or other disadvantageous local conditions imperil the success of this procedure, the value of the various plastic flap operations alone or in conjunction with transplanted epithelial tubes has repeatedly been demonstrated. The use of the fallopian tube for this purpose, as attempted in my case, possesses distinct advantages. As in all reconstructive surgery, the frequent superiority of a several stage procedure must be borne in mind.

#### Jejunal Ulcer Without Previous Gastro-Enterostomy

DR. EDWARD P. RICHARDSON, Boston: The two cases that I saw appear to be instances of simple ulcers affecting the jejunum. No definite etiology may be assigned to them. Since syphilis produces a form of intestinal ulceration which affects the jejunum more readily than the ileum, and also has a tendency to cicatricial contraction and perforation, it must be considered as a possible cause of ulceration in some of these cases, although definite confirmatory evidence is lacking. Whatever the cause, the occurrence of perforation gives these ulcers a definite surgical importance, the more so since the perforation does not take place in one of the regions in which we are accustomed to search for it.

#### Pelvic Tumors with Sacral Attachments

DR. ARTHUR A. LAW, Minneapolis: Owing to the demonstrated tendency to malignant degeneration, these tumors should be removed when recognized, and they should always be attacked from behind through the sacrococcygeal route. The modified Kraske approach is ideal for the larger tumors and permits them to be shelled out with little difficulty, usually without invading the peritoneum, and facilitates the control of hemorrhage.

The interesting feature of this tumor is that there is only one tissue in it which can be differentiated definitely, and this tissue is prostatic tissue. This tissue suggests the interesting possibility that this tumor may represent an embryoma bearing the same relation to the prostate as do some of these tumors of the testicle to that organ, and that it might possibly be classed as a teratoma of the prostate in which development was one-sided. As it has been impossible definitely to differentiate this tumor, I have stressed the importance of the removal of these embryonic tumors ventral to the sacrum, as I believe that most of them tend to malignant degeneration.

#### The Remaining Breast After Radical Removal of the Opposite Side for Carcinoma

DR. HUGH H. TROUT, Roanoke, Va.: In twenty-seven cases of women under 40 years of age, who did not become pregnant, there was not a single case of recurrence of the cancer in the remaining breast, although the recurrences elsewhere in the body were much higher in this group than in the rest of the series, the patients all being over 40. Of this group over 40, about 10 per cent. developed cancer in the remaining breast, and this in spite of the fact of recurrences elsewhere in the body being as high as most of the recently published reports. Surgeons should warn patients who are in the child-



bearing period and from whom a carcinoma of the breast has been removed not to become pregnant for fear of serious trouble in the remaining breast.

#### Meckel's Diverticulum

DR. ALEXIUS MCGLANNAN, Baltimore: In a series of 276 cases there were nine instances in which the diverticulum was recognized as the cause of the obstruction. Six of the patients died, and three recovered after operation. In one case the diverticulum was attached to the inner surface of the umbilicus by a cord; in the others it was free or had become adherent by its tip, or a cord, to the bowel or mesentery. The obstruction was caused by entanglement of a loop of intestine around the diverticulum, except in one case, in which an adherent diverticulum kinked the bowel by traction. In none of the cases was there any umbilical deformity or discharge.

#### Bleeding Ulcer of the Duodenum Associated with Cholecystitis

DR. EDWARD S. JUDD, Rochester, Minn.: Within the past year I have operated on four patients with bleeding duodenal ulcers in whom the pathologic condition was more extensive in the gallbladder than in the duodenum. In each case, the duodenal ulcer could be demonstrated easily, and in one case it was of long standing, as evidenced by the amount of scar tissue. A very severe grade of cholecystitis was also present in all of these cases. The gallbladders of the four patients were very much alike, being rather larger than normal, with thick, edematous walls. They were not compressible, because of the inflammatory deposits in the tissues. They contained stones and infected bile in each instance. I believe that their mucous membranes were completely destroyed and that they were functionless. The findings in these four cases impressed us with the importance of infections in the gallbladder as a possible etiologic factor in cases of gastro-intestinal bleeding. A definite lesion in the duodenum was found in every instance and undoubtedly was the point from which bleeding occurred. The hemorrhages were of the massive type, such as usually occur from the pancreaticoduodenal artery, and yet in each case it was quite definitely shown that none of the larger vessels could be involved in the ulcerations.

#### Ligation of the Internal Iliac for Enormous Gluteal Aneurysm: Cirroid Aneurysm of the Scalp

DR. WILLIAM D. HAGGARD, Nashville, Tenn.: The first patient complained of intolerable pain in the right leg and throbbing tumor of the right buttock as large as an inverted salad bowl. At operation the right internal iliac artery was exposed. It was as large as one's little finger. Two heavy silk ligatures were tied around the internal iliac one-half inch from its origin. To facilitate the agglutination of the wall of the aneurysmal sac, it was emptied by firm pressure and a large pad was tightly strapped over it and firmly held in place by adhesive plaster. Convalescence was uneventful. The second case showed itself as a subcutaneous swelling made up of a pulsating network of arterial sinuses, with tortuous branches spreading out to the left zygomatic arch on the left and across the median line to the opposite parietal region, and posteriorly toward the occipital region. The left anterior half of the scalp was covered with a large tumor, like an aggregation of dilated, tortuous, pulsating, bluish tinted, elevated blood vessels. Just to the left of the median line was a larger mass, the size of a child's hand, with tortuous, pulsating branches radiating out to the left zygomatic arch on the left. The entire tumor of blood vessels was excised. Eight months afterward, there was no return of the trouble.

#### Final Results in Myoma of Uterus and Myopathic Bleeding, Treated with Radium

DR. C. JEFF MILLER, New Orleans: The most striking feature revealed in the review of the cases treated by surgical intervention and by irradiation is the increasing percentage of myomectomies performed. The decision to adopt myomectomy in many cases formerly subjected to hysterectomy was prompted by the assurance that if myomectomy failed to control hemorrhage, radium could eventually complete the cure. With such assurance, the scope of conservative surgery

has been materially widened. Of 107 patients, 102 reported complete relief from hemorrhage within five months after irradiation. Two of the remaining five required a second application before being relieved; two others were not relieved by a second exposure, and the remaining patient did not return. In two instances, massive growths as large as a seven months' pregnant uterus had shrunk below the umbilicus. These patients had been bad surgical risks and were irradiated to control bleeding. Both were subsequently operated on successfully. In cases of myopathic hemorrhage, such as are commonly classified as chronic metritis, hyperplasia, fibrosis, uterine insufficiency, etc., radium approaches more nearly the ideal specific than any other therapeutic agent at command. Subsequent reports as to the symptoms of the menopause were interesting. In women over 40 in whom preservation of function was not considered, about 60 per cent. reported flushes and the usual phenomena of the climacterium. In many the symptoms were reported as severe, and almost invariably their history showed that the bleeding had been of the aggravated type. The duration of symptoms lasted about the average of the normal menopause, but in two cases the flushes have persisted for six years, and the patients complain that the flushes are as frequent and severe as during the first four months following irradiation.

#### Epilopexy

DRS. JOHN H. GIBBON and JOHN B. FLICK, Philadelphia: Our operative mortality was two out of ten cases; one patient died of pneumonia forty-eight hours after operation, and the second died four days after operation from peritonitis. In the last six cases there has been but one death with which the operation might be associated. This patient died two months after operation. She was a syphilitic.

#### Treatment of Cancer of the Tongue

DR. CURTIS F. BURNAN, Baltimore: Complete removal of the tongue is unjustifiable in early cases, and usually useless and harmful in advanced cases. The sum total of removals in extensive neck metastases, when the disease is outside the glands, does much more harm than good. Between 1916 and 1920, nearly all our operable cases were treated by operation and radium employed externally as an adjunct to the treatment. During these years a large number of inoperable cancers were treated by needling, local applications in the mouth, and heavy distance irradiation from the surface. In spite of shrinkage of growth, sometimes disappearance in the tongue and undoubted amelioration of symptoms, the results were nevertheless disappointing, for there were no cures. It is only fair to say that the technics employed in these cases were not nearly so theoretically good as those which we could employ now. Since 1920, we have taken up again the treatment of early operable cases with radium, and we agree with Dr. Quick that radium has a much more definite field in treating the tongue and mouth lesions than has surgical removal. This advance in radium therapy has been made possible by the bare tube technic. It is possible by this method to eradicate, not only small and moderate sized tongue lesions, but also very large ones in a high percentage of cases treated.

#### Gastrojejunal Fistulas Following Gastro-Enterostomy

DR. CHARLES H. MAYO, Rochester, Minn.: Six cases of gastrojejunal fistulas were observed among 101 gastrojejunal ulcers at the Mayo Clinic. A definite syndrome accompanied gastrojejunal fistulas, and their existence can be revealed by the roentgen ray in practically all cases. The onset of symptoms may occur from five weeks to nine and one-half years after gastro-enterostomy. Usually symptoms develop within six months or a year. The fistula may be intermittently patent and closed. Pain is not of a definite character, but is usually lower than the pain accompanying duodenal ulcer, and often a palpable mass is produced by the scar tissue in the area involved. Diarrhea, wasting and fecal vomiting are prominent symptoms. The cause of the condition is obscure. Separation of the colon from the stomach with closure of the fistula may be the only treatment necessary. It may be advisable to undo the gastro-enterostomy, as patients with fistulas do not tolerate it well, and a pyloroplasty can be done after excising the original ulcer.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Diseases of Children, Chicago

January, 1922, 23, No. 1

- \*Nature of Plantar Reflex in Early Life and Causes of Its Variations. W. M. Feldman, London.—p. 1.
- \*Can Yeast Be Used as a Source of Antineuritic Vitamin in Infant Feeding? A. L. Daniels, Iowa City.—p. 41.
- Incidence of Protein Sensitization in Normal Child. M. M. Peshkin and W. L. Rost, New York.—p. 51.
- \*Unusual Exanthem Occurring in Infants. R. M. Greenthal, Ann Arbor, Mich.—p. 63.
- Respiratory Exchange in Case of Biliary Atresia. G. B. Fleming, Glasgow, Scotland.—p. 66.
- \*Bacteriologic Studies of One Hundred and Sixty-Five Cases of Pneumonia and Postpneumonic Empyema in Infants and Children. A. B. Lyon, Boston.—p. 72.
- \*Congenital Tuberculosis; Report of Case. G. P. Pratt, Omaha.—p. 88.

**Nature of Plantar Reflex in Early Life.**—Feldman examined the plantar reflex of about 500 subjects from birth up to age of 7 years, the large majority being under 4 years. A response was obtained in 426 cases. The proportion between plantar flexion and dorsiflexion was approximately 4:1. As regards the age at which the plantar definitely becomes plantar flexor in type, Feldman does not agree with the conclusions of some observers that it depends on the age at which the child begins to walk, since not only does he find plantar flexion to be the prevailing response before the walking age, but he obtained it in a few cases either unilaterally or bilaterally, long after the child had begun to walk. Moreover, in the same infant either plantar flexion or dorsiflexion might be elicited at different times. The prevailing plantar response in early life is plantar flexion of the big toe, although when a dorsiflexion of the toe occurs it has not the same significance as a similar response in the adult. Bilateral plantar flexion is at all ages as common in girls as in boys, but bilateral dorsiflexion is at all age periods in infancy more common in girls than in boys. Bilateral dorsiflexion of the toes is commoner in cases with a subnormal temperature because, probably, in such cases there is a greater congestion of the spinal cord. Bilateral dorsiflexion is slightly more common in dolichocephalic than in brachycephalic infants, possibly because inhibitory control is less powerful in the former than in the latter.

**Yeast as Source of Antineuritic Vitamin.**—In her experiments with yeast Daniels used from 2 to 10 gm. air dried pulverized yeast (Fleischmann's) soaked in a small amount of water, subsequently boiled and added to the day's feeding. In certain instances, when no gain in weight resulted from the yeast additions, wheat embryo extract (50 c.c.) was substituted for the yeast, in order to make sure that the failure to gain was not due to a lack of the antineuritic vitamin. In some cases the wheat embryo extract was added for therapeutic purposes. The most noticeable general effects of the yeast additions, especially with younger babies, was the change in the number and character of the stools, a formed "safe" stool often becoming diarrheal. In many instances not only was the character of the stool changed, but the number per day was greatly increased even when comparatively small amounts of yeast were used. These frequent diarrheal stools were in a number of cases followed by sudden losses in weight. The results were sometimes so disastrous that it was necessary to institute corrective measures at once. Altogether, Daniels' experience with yeast points to the conclusion that it should not be used as a means of increasing the antineuritic content of infants' foods.

**Unusual Exanthem in Children.**—The cases seen by Greenthal were characterized by an acute illness, with high fever, lasting from three to four days. The temperature then fell quickly to normal, and with the subsidence of the fever an eruption appeared lasting from one to three days. The patients were all infants whose ages ranged from 9 months to 2 years. Only one member of a family contracted the disease.

**Bacteriology of Pneumonia in Children.**—In the cases of lobar pneumonia, or empyema following, studied by Lyon, pneumococcus Type IV predominated with Type I a close second; 37.7 and 29.9 per cent., respectively. It is suggested that the etiology of lobar pneumonia in infants and children follows in a general way that in adults for a given community at a given time. Studies of comparative mortality suggest that the child possesses a better natural immunity against pneumococcus, type for type, than does the average adult. In bronchopneumonia the fixed types of pneumococcus are much less common than in lobar pneumonia. There has been an extraordinary tendency to the development of empyema in infections with pneumococcus Type I. Nearly 38 per cent. of pneumonias charged to this type developed this complication. Numerically it outranks any other cause of empyema in this series by about six times. This phenomenon bears not relation to the administration of serum.

**Congenital Tuberculosis.**—Pratt relates the case of a pregnant woman whose condition was diagnosed clinically as acute miliary tuberculosis. As no time could tubercle bacilli be demonstrated in the scanty sputum. She died. The necropsy revealed a generalized distribution of characteristic miliary tubercles in all the organs but most numerous in the lungs, making the case a predominant pulmonary form of miliary tuberculosis. The uterus was markedly enlarged, soft, congested and corresponded in size to that of a five months pregnancy. A distinct increase of straw-colored fluid was found in the fetal peritoneal cavity. Smears of this were negative for the bacillus of tuberculosis. No evidence of miliary tubercles was found in the abdominal cavity. The liver was somewhat enlarged and section was made of it in a dry field under aseptic precautions. Smears were made of scrapings from the cut surface and in these smears occasionally tubercle were found with Ziehl-Neelsen's carbol-fuchsin stain. Similar smears were made from the placental cut surface before complete fixation, and prolonged search of these failed to reveal any tubercle bacilli. The finding of the tubercle bacilli in the fetal liver establishes this as a proven case of congenital tuberculosis.

#### American Journal of Hygiene, Baltimore

September-November, 1921, 1, Nos. 5-6

- \*On Longevity of Human Intestinal Protozoan Cysts. W. C. Boeck, Baltimore.—p. 527.
- \*Disinfecting Skins and Hair for Anthrax. H. F. Smyth, Philadelphia.—p. 541.
- Investigations on Control of Hookworm Disease. W. W. Cort, Baltimore.—p. 557.
- \*Five Species of Tsutsugamushi (Carrier of Japanese River Fever) and Their Relation to Tsutsugamushi Disease. M. Nagayo, Y. Miyagawa, T. Mitamura, T. Tamiya and S. Tenjin, Tokyo, Japan.—p. 569.
- Vitality of Peoples of America. R. Pearl, Baltimore.—p. 592.

**Longevity of Intestinal Protozoan Cysts.**—The longevity was determined by Boeck of four different species of human intestinal protozoan cysts, under two different environments. Immersed in distilled water, contained in bottles and kept at a temperature of 12 to 22 C., cysts of *E. histolytica* were found viable at the end of 153 days; *E. coli* at the end of 244 days; *Giardia intestinalis* at the end of thirty-two days and *Chilomastix mesnili* at the end of 187 days. In eosin stained wet preparations, sealed with petrolatum, cysts of *E. histolytica* were viable at the end of 211 days; *E. coli*, 124 days; *Giardia intestinalis*, sixty-six days and *Chilomastix mesnili* at the end of 232 days. The cysts of *E. histolytica* and *E. coli* are infectious for man two and ten days, respectively, after their passage from the human body, and the cyst of *Giardia intestinalis* for kittens, after seventy-four days. In the absence of more definite information regarding the period of infectivity, all prophylactic measures against the dissemination of protozoan diseases should aim to prevent the access of flies to feces and to destroy the feces within two days after their defecation.

**Disinfecting Horse Hair for Anthrax.**—Smyth states that anthrax infested horse hair can be satisfactorily disinfected by several methods: (a) by steam under pressure in the autoclave (15 pounds) for thirty minutes; (b) by dry heat (200 F.) for twenty-four hours; (c) by formaldehyd.



**Tsutsugamushi Carrier.**—While there are at least five species among the mites which have been defined as tsutsugamushi, only one of these species, *Trombicula akamushi*, is of significance in the occurrence of human tsutsugamushi disease.

### American Journal of Medical Sciences, Philadelphia

December, 1921, 162, No. 6

- \*Acute Cerebellar Encephalitis (Acute Cerebellar Ataxia). J. P. C. Griffith, Philadelphia.—p. 781.
- \*Clinical Studies in Functional Disturbances. N. G. Russell, J. A. P. Millet and B. D. Bowen, Buffalo.—p. 790.
- \*Clinical Classification on Asthma Based on Review of Six Hundred and Forty-Eight Cases. F. M. Rackemann, Boston.—p. 802.
- \*Treatment of Auricular Fibrillation by Quinidin Sulphate. C. C. Welferth, Philadelphia.—p. 812.
- \*Nonspecific Wassermann Reactions in Diabetes Mellitus. E. H. Mason, Montreal, Canada.—p. 828.
- \*Lead Poisoning, with Special Reference to Poisoning from Lead Cosmetics. M. Barron and H. C. Habein, Minneapolis.—p. 833.
- \*Analysis of Cases of Cancer of Stomach; Incidence of Preexisting Ulcer.—p. 863.
- Relation Between Poliomyelitis and Epidemic (Lethargic) Encephalitis. W. B. Cadwalader, Philadelphia.—p. 872.
- Meningococcus Septicemia. W. A. Bloedorn, U. S. Navy.—p. 881.
- Morphology of Heart in Relation to Habitus and New Method of Estimating Morphologic Changes. S. Hirsch and L. L. Shapiro.—p. 892.

**Acute Cerebellar Encephalitis.**—Thirty-one cases, including four of his own, are analyzed by Griffith. In only two cases was a necropsy performed, hence little is known regarding the actual lesions present. The disquieting element is that in about one quarter of the cases there was at the last observation some evidence of mental defect.

**Functional Disturbances.**—A clinical and functional study is presented by Russell and associates. Of eighty-five cases showing symptoms either definitely attributable to disturbance of the endocrine glands, particularly the thyroid, or not readily explainable on any other basis. The functional tests employed were the basal metabolism glucose tolerance and epinephrin sensitivity tests. The cases studied were divided into four groups: hyperthyroid, hypothyroid, fatigue, and a large miscellaneous group. Clinical methods were found satisfactory in the diagnosis of frank hyperthyroidism, myxedema and to a lesser extent in the third and fourth groups. In apparent hypothyroidism—not myxedematous in type, however—the ordinary clinical methods usually failed to suggest the probable diagnosis. In such cases the diagnosis was made entirely on the basis of a decreased basal metabolic rate, together with definite improvement after the administration of thyroid extract. Of the functional tests used the basal metabolism was the only one to yield uniform results, which could be reasonably interpreted in association with the clinical findings and subsequent progress of the cases studied. Both of the other tests yielded positive results in almost all cases of hyperthyroidism, but the frequency of similar responses in a variety of other conditions, in some of which the diagnosis of hyperthyroidism was not even a remote possibility, necessarily detracts from their value as specific tests of thyroid function. Special emphasis is laid on three points brought out by the data obtained. These are: (1) That there are some cases showing definite hypersensitiveness to epinephrin and intolerance to glucose who tolerate thyroid extract well and improve under its administration; (2) that it is dangerous to attribute much importance to a positive epinephrin response in the diagnosis of suspected hyperthyroidism, and (3) a corollary of the point just mentioned that an occasional case of classical exophthalmic goiter showing marked increase of the basal metabolic rate may exhibit no hypersensitiveness to epinephrin.

**Classification of Asthma.**—The classification of asthma presented by Rackemann is: (a) pollen hay-fever and asthma; (b) dust asthma; (c) food idiosyncrasy; (d) bacterial asthma, and (e) reflex asthma. Cases from each group are analyzed.

**Quinidin Sulphate in Auricular Fibrillation.**—Of the twelve cases of auricular fibrillation treated with quinidin sulphate by Welferth the normal rhythm was restored in seven, the fibrillation converted to flutter in one, while in four the treatment failed to abolish the fibrillation. In two cases there was no clinical benefit from the restoration of normal rhythm, as the fibrillation was reestablished within two

weeks. In two others the results might be regarded as moderately successful. Fibrillation was abolished for periods of several weeks and the patients stated that they felt better during that time. But in both fibrillation returned and was much more refractory to a second course of treatment, although it was again possible to restore sinus rhythm temporarily. In three cases the results of quinidin therapy were excellent. The dosage varied somewhat, but the first dose was 0.2 gm. twice daily. The dosage varied up to 0.6 gm. three times daily.

**Wassermann Reaction in Diabetes.**—In a series of 168 cases of diabetes mellitus, Mason says, two cases have been observed which gave strongly positive blood Wassermann reactions, there being no history or other signs or symptoms of a specific infection. Both patients were treated for their supposed syphilitic infection over a short period of time, with marked and rapid decline of carbohydrate tolerance.

**Lead Poisoning from Cosmetics.**—In the cases reported by Barron and Habein a powder containing pure lead carbonate ground to an impalpable powder used as a face powder, was responsible for the lead poisoning. It is urged that rigid laws be enacted prohibiting the sale of any compound containing lead for cosmetic purposes.

**Ulcer Basis for Gastric Cancer.**—An analysis of 182 carefully studied cases of cancer of the stomach shows that a history suggestive of preexisting ulcer was obtained in only 17 per cent. Reference of epigastric pain to the back occurred in 29 per cent. of the pyloric cancers, and of those with reference of pain to the back 80 per cent. had involvement of the pylorus. The age incidence for the beginning of "ulcer" symptoms in the ulcer-before-cancer cases had its apex two decades later than did a series of seventy-nine ulcer cases. This suggests either that ulcers first giving rise to symptoms in middle life have a far greater likelihood of becoming malignant than do ulcers generally or that the ulcer-before-cancer cases are really malignant from the beginning. Either of these considerations justifies and indicates prompt and radical surgical treatment of all patients first developing symptoms suggestive of ulcer after 40 years of age. The average free hydrochloric acid and total acidity findings in the pyloric cancers was not abnormally low (15.5 and 45), but there was evidence of definite retention. There was also retention in some of those with lesser curvature involvement. When the cancer was situated elsewhere retention did not occur, but the acid figures were distinctly low. Roentgen-ray study gave a positive diagnosis in 96.8 per cent. and in but one case was it misleading. At operation the tumors were shown to be somewhat more extensive and more often to involve the lesser curvature than the roentgen ray suggested.

### American Journal of Physiology, Baltimore

January, 1922, 58, No. 3

- Blood Fibrin Studies. D. P. Foster and G. H. Whipple, San Francisco.
  - I. Method for Quantitative Analysis of Blood Fibrin in Small Amounts of Blood.—p. 365.
  - II. Normal Fibrin Value and Influence of Diet.—p. 379.
  - III. Fibrin Values Influenced by Transfusion, Hemorrhage, Plasma Depletion and Blood Pressure Changes.—p. 393.
  - \*IV. Fibrin Values Influenced by Cell Injury, Inflammation, Intoxication, Liver Injury and Eck Fistula.—p. 407.
- Effect of Repeated Rotation on Duration of After-Nystagmus in Rabbit. S. S. Maxwell, U. L. Burke and C. Reston, San Francisco.—p. 432.
- Contour of Ventricular Volume Curves Under Different Conditions. C. J. Wiggers and L. N. Katz, Cleveland.—p. 439.
- Action Currents in Stomach and Intestine. W. C. Alvarez and L. J. Mahoney, San Francisco.—p. 476.

**Fibrin Values Affected by Tissue Injury.**—According to Foster and Whipple tissue injury and inflammation exert a powerful stimulus on fibrinogen production and cause prompt and notable increase in fibrin values. Bacteria are not directly concerned in this reaction, which is identical whether a sterile or septic inflammation is present. All available data point to the liver as the only potential source of fibrinogen in the body.

### American Review of Tuberculosis, Baltimore

December, 1921, 5, No. 10

- Tuberculosis Problem; Its Solution. A. K. Krause, Baltimore.—p. 769.
- Antituberculosis Campaign in West Riding of Yorkshire, England. J. B. McDougall, Wakefield, Eng.—p. 784.



- Institutional Treatment of Tuberculosis: Its Limitations. A. F. Miller, Kentville, Nova Scotia.—p. 801.
- Seven Years' Experience with Artificial Pneumothorax. A. F. Miller, Kentville, Nova Scotia.—p. 809.
- \*Tuberculous Pyopneumothorax Treated with Methylene Blue. J. Rosenblatt and B. P. Stivelman, Bedford Hills, N. Y.—p. 819.
- Safe Removal of Tonsils by Desiccation Method with High Frequency Current in Poor Surgical Risks, with Especial Reference to Tuberculosis. P. P. McCain, Sanatorium, N. C.—p. 824.
- \*Uterine Tuberculosis Associated with Uterine Neoplasm. J. R. Scott, Vermillion, S. D.—p. 829.
- \*Theoretic Considerations on Application of Ultraviolet Radiation in Tuberculous Laryngitis. E. Mayer, Saranac Lake, N. Y.—p. 835.
- Determination of Clinical Activity in Pulmonary Tuberculosis from Roentgenograms. G. G. Ornstein and H. L. Sampson, Trudeau, N. Y.—p. 842.
- Tuberculosis Versus Influenza. J. J. Singer, St. Louis.—p. 851.

**Methylene Blue in Tuberculous Pyopneumothorax.**—Rosenblatt and Stivelman report two cases of tuberculous pyopneumothorax in which they injected a saturated alcoholic solution of methylene blue with good results. Three c.c. is injected at a time until sterilization is effected.

**Tuberculosis of Uterus and Polyp.**—In Scott's case the dominant symptom was an excessive loss of blood at the menstrual epochs, which has shown a tendency to increase with succeeding periods. This is accompanied by severe pain in the lumbar region, necessitating the patient being confined to her bed during the epochs. These periods last about ten days, during the last two or three days of which the flow gradually decreases. There also is evident a feeling of weight in the pelvis, which is accentuated at the periods. The lungs were negative and the vulva gaping. There was a noticeable loss of tone in the perineum. A clinical diagnosis was made of antelexion of the uterus, probably due to the relaxation of the perineum. An operation for repair of the perineum was undertaken, previous to which a routine curettage was performed. Microscopic examination of the curettings revealed a mucous polypus, 3 by 1.5 by 1 cm. Sections of the curettings revealed a number of tuberculous ulcers, together with a few miliary tubercles. Sections from the polypus also showed the characteristic picture of tubercle. Sections stained for tubercle bacilli revealed a small number of acid-fast rods. The convalescence was uneventful, the patient being discharged in a satisfactory condition. She returned after several weeks, complaining of a loss of weight and a feeling of fatigue, with a distressing cough. Physical examination at this time revealed a suspicious area in the right apex, which was demonstrated in roentgenograms. The sputum however was negative for tubercle bacilli on repeated examinations.

**Ultraviolet Rays in Tuberculous Laryngitis.**—Theoretically, Mayer believes it is justifiable to expect that ultraviolet radiation, of sufficient intensity to produce focal reactions, can stimulate healing of tuberculous laryngitis. Impressions thus far obtained by this form of treatment by direct application of the rays are encouraging.

### Boston Medical and Surgical Journal

Jan. 12, 1922, 186, No. 2

- Challenge of Chronic Patient to Medical Profession. J. E. Goldthwait, Boston.—p. 31.
- \*Diagnosis of Heart Disease with Especial Reference to Its Importance in Preventive Medicine. P. D. White, Boston.—p. 34.
- Problems for Cardiovascular Investigation. S. A. Levine, Boston.—p. 38.
- \*Common Pulmonary Diseases Confused with Tuberculosis. E. O. Otis, Boston.—p. 41.
- \*Postdiphtheritic Disseminated Myelitis, Report of Case. H. Powers, Brookline, Mass.—p. 45.
- Abnormal Menstrual History, Followed by Pregnancy. C. J. Kickham, Boston.—p. 47.

**Diagnosis of Heart Disease.**—To determine disorders of the heart beat, White says clinical observation may often suffice if one is familiar with the findings of premature beats, heart block, auricular fibrillation and pulsus alternans; but very often graphic records—the electrocardiogram and arteriogram—are essential to clear up the situation. And finally, in the discovery of the very important condition of intraventricular block the electrocardiogram alone will suffice.

**Pulmonary Diseases Confused with Tuberculosis.**—Otis points out that there are a certain number of cases of lung

condition which can only be diagnosed after long and careful observation, and although there may be a certain amount of evidence pointing toward tuberculosis, it is unjust and often cruel to the patient to make a definite diagnosis of tuberculosis without good and sufficient evidence to support such a diagnosis.

**Postdiphtheritic Disseminated Myelitis.**—Disseminated myelitis or sclerosis following diphtheria is reported only seven times in the literature. Powers adds one case: the only one in which antitoxin was given. The picture of disseminated myelitis was complete, but apparently in this case, myelitis has not terminated in sclerosis. The patient made a complete recovery.

### Canadian Medical Association Journal, Toronto

December, 1921, 11, No. 12

- Malignant Disease of Throat. W. S. Syme, Glasgow.—p. 887.
- Experiences of an Otolologist in France (1915-1919). J. K. M. Dickie, Ottawa.—p. 893.
- What Does Public Health Administration Embrace? W. H. Hattie, Halifax.—p. 900.
- Relation of General Medicine to Mental Medicine. A. T. Mathers, Winnipeg, Man.—p. 904.
- Chlorination of Small Water Supplies. F. B. Jones, Montreal.—p. 908.
- Treatment of Acute Pelvic Inflammation in Female. E. R. Secord, Brantford, Ont.—p. 910.
- Roentgen-Ray Diagnosis of Gastric and Duodenal Ulcer. L. R. Hess, Hamilton.—p. 914.
- Prognosis and Diagnosis in Tuberculosis as Aided by Serology. W. E. Ogden, Toronto.—p. 918.
- Cancer of Stomach. J. C. Masson, Rochester, Minn.—p. 924.
- Surgery of Gallbladder and Biliary Ducts. E. S. Judd, Rochester, Minn.—p. 929.
- Etiology of Rickets. F. F. Tisdall, Toronto.—p. 934.
- Recent Advances in Our Knowledge of Alkaloids of Opium. H. G. Barbour, Montreal.—p. 944.
- Surgery in Treatment of Pulmonary Tuberculosis. E. W. Archibald, Montreal.—p. 945.
- Bronchial Asthma. A. T. Henderson, Montreal.—p. 947.
- Traumatic Aneurysm. C. K. P. Henry, Montreal.—p. 949.
- Case of Gauze in Intestine. G. W. T. Farish, Yarmouth, N. S.—p. 950.

### Florida Medical Association Journal, St. Augustine and Jacksonville

December, 1921, 8, No. 6

- Vital Statistics and Medicine. S. R. Roberts, Atlanta, Ga.—p. 93.
- Fractures of Femur. J. S. Turberville, Century, Fla.—p. 96.

### Illinois Medical Journal, Oak Park

January, 1922, 41, No. 1

- Thyroid Gland and Toxemias—with Special Relation to Intestinal Stasis. W. S. Bainbridge, New York.—p. 1.
- \*Acidosis in Surgical Anesthesia. M. E. Rose, Decatur, Ill.—p. 6.
- Psychic Factor in Anesthesia. J. R. Eastman, Indianapolis.—p. 9.
- Principle of Basal Metabolism Test. H. Swaenbergh, Quincy, Ill.—p. 15.
- Refinements in Operation for Senile Cataract. C. B. Welton, Peoria, Ill.—p. 19.
- Precautions Necessary to Avoid Accidents in Cataract Extraction. W. A. Fisher, Chicago.—p. 23.
- Diagnostic and Therapeutic Value of Nonsurgical Biliary Tract Drainage in Patients Exhibiting Biliary Tract Disease on Whom Surgical Procedures Have Been Performed Previously. F. Smithies and R. B. Oleson, Chicago.—p. 29.
- Two Problems in Bronchoscopy and Their Solution. G. W. Boot, Chicago.—p. 36.
- Paternalism, Most Subtle and Sinister Enemy of Popular Government. F. L. Greene, St. Albans, Vt.—p. 38.
- Present Situation with Regard to Narcotic Addiction in U. S. R. G. Perkins, Cleveland.—p. 44.
- Plea for More Thorough Routine Back Examination. J. H. Bacon, Peoria, Ill.—p. 47.

**Acidosis in Surgical Anesthesia.**—An attempt was made by Rose to determine whether procain, the most widely used local anesthetic, produces a decrease in the alkali reserve of the blood. The work was done on thirty-eight surgical patients, the operations including herniotomy, hysterectomy, nephrectomy, cholecystectomy, thyroidectomy, appendectomy, etc. A 0.5 per cent. solution of procain with epinephrin, 4 drops of 1:1,000 solution to the ounce, was used as the anesthetic in all cases. Twenty-two patients, or 58 per cent., showed no decrease in the blood bicarbonate after operation. Sixteen, or 42 per cent., showed a decrease varying from 1.5 to 10 volumes per cent., the average decrease being 4.5 volumes per cent. In all cases, however, the average fall was 1.9 volumes per cent.



## Indiana State Medical Association Journal, Fort Wayne

December, 1921, 14, No. 12

- Ulcer of Stomach and Duodenum. Etiology and Pathology. B. W. Rhamy, Fort Wayne.—p. 405.  
Id. Diagnosis and Treatment. W. H. Foreman, Indianapolis.—p. 409.  
Id. Surgical Treatment. J. R. Eastman, Indianapolis.—p. 414.  
Physician. "Rejuvenation of Medical Ethics." F. B. Wynn, Indianapolis.—p. 422.

## Johns Hopkins Hospital Bulletin, Baltimore

January, 1922, 33, No. 371

- \*Secondary Anemia of Infants: Study of So-Called Infantile Splenic Anemia or Anemia Infantum Pseudoleukemica. F. A. Evans and W. M. Happ, Baltimore.—p. 1.  
Pregnancy and Labor in Young Primiparae. J. W. Harris, Baltimore.—p. 12.  
\*Protective Power of Serum in Pernicious Anemia and Other Conditions Against Hemolysis by Saponin and by Sodium Oleate. R. H. Zinck, H. M. Clark and F. A. Evans, Baltimore.—p. 16.  
\*Establishment of Collateral Circulation Following Ligation of Thoracic Duct. F. C. Lee, Baltimore.—p. 21.  
Studies on Experimental Rickets. XV. Effect of Starvation on Healing of Rickets. E. V. McCollum, N. Simmons, P. G. Shipley and E. A. Park, Baltimore.—p. 31.

**Secondary Anemias of Infants.**—When the cases of anemia in infants reported here by Evans and Happ were examined in detail, it was seen that, although some of the features presented were common to all the patients, other varied within wide limits. Diminution in the number of red blood cells and in the hemoglobin percentage, anisocytosis, poikilocytoses and basophilia were present in all, and, in general, the severity of these changes varied with the severity of the anemia. All of the patients also showed at least a slight relative increase in cells of the large mononuclear-transitional cell group. Variations in the number and character of the platelets present from time to time were essentially the same in all cases. However, the degree of anemia, the total white blood cell count, the differential white blood cell formula, the presence of immature cells, enlargement of the spleen, liver and lymph nodes, the presence of rickets, the signs of prematurity, and the kind of feeding employed varied within wide limits. The blood pictures in these cases showed three major types of reaction, or various combinations of them. Type I.—The blood changes resembled somewhat those seen in simple secondary anemia of adults; that is, there were no immature forms and no increase of lymphocytes. Type II.—The blood showed, in addition to the changes of Type I, an increase in the relative proportion of lymphocytes. Type III.—The blood showed, as the most pronounced change, immature cells of all types. There was also in these cases some increase in the percentage of lymphocytes. It would seem, therefore, that the simple anemias of infants differed in blood picture from those of adults chiefly by reason of two special reactions, lymphocytic increase and the presence of immature cells. Either one of these might be present alone and in different degrees, or both be found, the relative importance of one toward the other also the subject of wide variation.

**Protective Power of Serum in Pernicious Anemia Against Hemolysis.**—The serums of patients with hemolytic anemia and other conditions in which the liver and spleen are prominently involved in the disease process, as compared with the serums of normal persons and of patients not suffering with either of these maladies showed a marked diminution in protective power against hemolysis by saponin, and by sodium oleate. Zinck and her associates conclude that saponin is a hemolytic agent foreign to the body, and sodium oleate is one that is probably present in the body normally.

**Establishment of Collateral Circulation Following Ligation of Thoracic Duct.**—After reviewing the literature on the experimental ligation of the thoracic duct, an intrathoracic method is described by Lee for complete ligation of the thoracic duct in the cat. It seems that the integrity of the thoracic duct is not essential to the life of the animal. In some cases in which the ligation was absolute, collateral lymph circulation was established to the right thoracic duct; while in other cases which showed complete ligation, lymphaticovenous connections were found to exist between the thoracic duct and the azygos vein. The embryology of the

lymphatic system may explain partly, but not entirely, these findings which also have a bearing on studies of fat absorption as well as on the clinical aspect of injuries to the thoracic duct.

**Effect of Starvation on Rickets.**—The authors observed that when young rats with rickets are made to fast for periods of from three to five days (distilled water only being offered), healing begins in exactly the same way as it does when suitable amounts of cod liver oil are administered. The good effects of fasting are given a new meaning, because the organism is able to adapt itself to pathogenic distortions of normal metabolic ratios when the burden of carrying on exogenous metabolism is removed. Since the starving body is capable of readjusting abnormal relations within itself it is easy to understand the benefit derived by a diabetic from occasional hunger days, and why it is that the wasted anthreptic infant does not develop rickets. Rickets has certain of the characteristics of a deficiency disease because a certain substance contained in cod liver oil and elsewhere corrects an anatomical condition which develops when the calcium and phosphorus in the diet are present in wrong proportions. Yet rickets has a feature entirely distinct from beriberi, scurvy, and xerophthalmia. The relation between two inorganic elements determines the extent of the animals' need for the organic factor which cod liver oil furnishes. No such relationship between a vitamin and any other food substance has been clearly demonstrated in any other condition.

## Journal of Biological Chemistry, Baltimore

December, 1921, 49, No. 2

- \*Relation Between Chlorid Content of Blood and Its Volume Per Cent. of Cells. A. Norgaard and H. C. Gram, Copenhagen, Den.—p. 263.  
\*New Method for Determination of Fibrin Percentage in Blood and Plasma. H. C. Gram, Copenhagen, Den.—p. 279.  
Further Study of Respiratory Processes in Mya Arenaria and Other Marine Mollusca. J. B. Collip, St. Andrews, Can.—p. 297.  
\*Sulphates in Blood. W. Denis, New Orleans.—p. 311.  
\*Creatin Formation in Case of Progressive Pseudohypertrophic Muscular Dystrophy. R. B. Gibson and F. T. Martin, Iowa City.—p. 319.  
Action of Nitrous Acid on Casein. M. S. Dunn and H. B. Lewis, Urbana, Ill.—p. 327.  
Comparative Study of Hydrolysis of Casein and Deaminized Casein by Proteolytic Enzymes. M. S. Dunn and H. B. Lewis, Urbana, Ill.—p. 343.  
Determination of B-Hydroxybutyric Acid. R. S. Hubbard, St. Louis.—p. 351.  
\*Determination of Acetone Bodies in Urine. R. S. Hubbard, St. Louis.—p. 357.  
Determination of Acetone Bodies in Blood. R. S. Hubbard, St. Louis.—p. 375.  
Blood Acetone Bodies After Injection of Small Amounts of Epinephrin Chlorid. R. S. Hubbard and F. R. Wright, New York.—p. 385.  
\*Some Nutritive Properties of Nuts. II. Pecan Nut as Source of Adequate Protein. F. A. Cajori, Palo Alto, Calif.—p. 389.  
\*Studies on Experimental Rickets. IX. Lesions in Bones of Rats Suffering from Uncomplicated Beri-Beri. P. G. Shipley, E. V. McCollum and N. Simmons, Baltimore.—p. 399.  
Ammonia Excretion Following Experimental Administration of Acids via Stomach and Peripheral Vein. R. W. Keeton, Chicago.—p. 411.  
\*Composition of Chinese Edible Birds' Nests and Nature of Their Proteins. C. C. Wang, Chicago.—p. 429.  
Isolation and Nature of Amino Sugar of Chinese Edible Birds' Nests. C. C. Wang, Chicago.—p. 441.  
Animal Calorimetry. Behavior of Various Intermediary Metabolites on Heat Production. G. Lusk, New York.—p. 453.  
Animal Calorimetry. XIX. Influence of Acids on Carbon Dioxid-Combining Power of Blood Plasma. S. A. Taistra, New York.—p. 479.  
Animal Calorimetry. Influence of Ingestion of Meat and of Glycine and Alanine on Carbon Dioxid-Combining Power of Blood Plasma. A. Chanutin, New York.—p. 485.  
\*Micro Determination of Calcium in Whole Blood, Plasma and Serum by Direct Precipitation. G. W. Clark, Berkeley, Calif.—p. 487.  
Fate of Sulphids in Blood. H. W. Haggard and T. J. Charlton, New Haven, Conn.—p. 519.

**Chlorid Content of Blood.**—In fifty-two cases of various types Norgaard and Gram found that the content of sodium chlorid in the plasma is nearly constant, about 0.61 per cent. The corresponding chlorid determinations on whole blood show that these values vary greatly. The chlorid percentage in blood increases when the cell volume percentage (and hemoglobin) drops, and vice versa; these changes following certain laws, which are formulated. The chlorid content of the blood corpuscles is nearly constant, about 0.31 per cent., the only serious divergence being found in pernicious anemia, where the average content is calculated to be 0.23 per cent.



**Determination of Fibrin in Blood.**—A technic is described by Gram by which the fibrin percentage in blood and plasma may be determined from 5 c.c. of citrated blood (0.5 c.c. of 3 per cent. citrate + 4.5 c.c. of blood). This includes a determination of the cell volume. On the same specimen one may determine the platelet count by Thomsen's method and the coagulation time by a method indicated by the author.

**Sulphates in Blood.**—The inorganic sulphates of blood, as determined by a new and simple method, a description of which is given by Denis, is found to amount to from 1.8 to 4.0 mg. of sulphur per 100 c.c. blood in the case of various species of animals and from 1.0 to 0.5 mg. in normal human blood. In nephritics with nitrogen retention there is also found a retention of inorganic sulphate, figures as high as 12 and 16 mg. having been obtained.

**Creatin Formation in Progressive Muscular Dystrophy.**—Ingested creatin was promptly and completely eliminated chiefly as creatin, in part as creatinin, in an advanced progressive pseudohypertrophic muscular dystrophy case described by Gibson and Martin. The creatin and to a lesser extent the creatinin excretion was increased as the result of a greater protein intake. This increase is obtained only from the protein that catabolized, including gelatin, and not from that retained for growth purposes. Preformed creatin in the diet was not an important factor to be considered in interpreting the results. The substitution of the arginin-rich protein edestin for 0.8 of the protein of the diet failed to increase the creatin excretion. Hordein added to the diet increased the total nitrogen and urea elimination, but probably was without effect on the creatin; this observation is indicative only. Ingested sarcosin and asparagin did not lead to an increase in the creatin excretion. Glycocyamin was converted in part (at least 36 per cent.) into creatin. It is probably not a stage in ordinary creatin formation. Experiments with cystin have been negative.

**Determination of Acetone in Urine.**—A method is described by Hubbard for the determination of the acetone bodies in normal urine, which gives a good percentage of recovery for substances added, and which is particularly applicable for the analysis of normal urines. It gives low values for normal urines, but not lower than some already included in the literature. Duplicates agree well, and determinations when carried out by two distinct methods of final analysis show satisfactory agreement. In addition, two cases are presented in which the gradual development of acetonuria was brought about, and a brief discussion is given of the relationship between the different acetone bodies under such conditions.

**Nutritive Value of Pecan.**—Cajori states that the principal protein of the pecan nut is a globulin. Feeding experiments on rats showed that the nut is a source of adequate protein.

**Experimental Rickets.**—According to Shipley, McCollum and Simmonds, rats fed on a diet complete except for the absence of the antiberiberi factor, develop lesions in the bones which are essentially identical with those seen in guinea-pigs suffering from acute and uncomplicated scurvy. Rats confined to the same diet supplemented with water-soluble B do not show these changes. The bones of rats on a diet which is only deficient in the fat-soluble A are osteoporotic, but have no other resemblance to the bones of scorbutic animals.

**Composition of Edible Chinese Birds' Nests.**—Wang shows that the Chinese edible birds' nest has the properties of a protein as well as those of a carbohydrate. It belongs, therefore, to the class of glycoprotein. Its percentage composition resembles that of salivary mucin. It contains 10.29 per cent. nitrogen and at least 17.36 per cent. carbohydrate. Artificial digestion experiments indicated that the birds' nest was digested by both pepsin hydrochloric acid and trypsin at a slower speed than boiled egg. Feeding experiments indicate that the nest protein is probably of an inferior quality.

**Determination Calcium in Blood.**—Experimental data are presented by Clark to show that the micro method depending on the direct precipitation of calcium from serum, plasma and whole blood is accurate to  $\pm 5$  per cent., and equal in this respect to any of the numerous micro methods recorded in the literature. The direct method possesses several advantages not common to other procedures: (1) the small amount

of sample necessary (1 to 5 c.c. of plasma, 5 c.c. of whole blood); (2) the saving in time (no ashing, protein precipitation, filtering, etc.); and (3) minimal mechanical loss, since all operations are carried out in one tube. With proper concentration of H ions (approximately that of normal sulphuric acid) and at an initial temperature of 75 C., small amounts of calcium may be estimated accurately (to approximately 2 per cent.) by titration of the oxalate with hundredth normal potassium permanganate.

### Maine Medical Association Journal, Portland

January, 1922, 12, No. 6

\*Some Large Ureteral Calculi. L. G. Paul, Boston.—p. 147.

Diarrhea in Bottle-Fed Infants. H. E. Small, Fort Fairfield, Me.—p. 154.

Focal Infections. C. G. Dernet, Saco.—p. 158.

**Large Ureter Calculus.**—Paul reports a case in which two stones were lodged in the lower part of the left ureter. They were removed by an extraperitoneal operation. One stone weighed 259 grains and the other 96 grains. The larger stone was 7 cm. long and 2 cm. in diameter at its largest part; the smaller one measured 4.5 by 1.5 cm.

### Medical Record, New York

Jan. 7, 1922, 101, No. 1

Some Factors in Bone Repair. W. S. Bainbridge, New York.—p. 1.

Treatment of Raynaud's Disease with Thyroid Extract. E. W. Hirsch, Chicago.—p. 9.

Redemption of Internal Medicine with Reference to Improved Therapeutic Application. W. C. K. Berlin, Denver.—p. 12.

Fracture of Neck of Femur. S. Kleinberg, New York.—p. 14.

Few Thoughts on Prostatic Disease. A. W. Hammer, Philadelphia.—p. 15.

Compulsory Health Insurance. W. E. Hartshorn, New Haven, Conn.—p. 17.

Uses and Abuses of Pituitrin in Obstetrics. I. Josephson, New York.—p. 18.

Jan. 14, 1922, 101, No. 2671

Pharmacology and Therapeutic Value of Alcohol. G. B. Wallace, New York.—p. 47.

Importance of Endocrine Therapy in Combination with Mental Analysis in Treatment of Certain Cases of Personality Deviation. E. R. Spaulding, New York.—p. 50.

Turpentine by Injection in Dermatology and Urology. J. L. Tenebaum, New York.—p. 54.

Cases of So-Called Tropical Granuloma Observed in Kings County Hospital. J. M. Winfield and L. D. Hoppe, Jr., Brooklyn.—p. 57.

Borderline Endocrine Cases. H. R. Harrower, Glendale, Calif.—p. 60.

Calcium Lactophosphate in Cyclic Vomiting. C. R. Green, Troy, N. Y.—p. 62.

Unexplained Constitutional Symptoms Caused by Foreign Body in Tissues. M. J. Schroeder, New York.—p. 63.

Jan. 21, 1922, 101, No. 3

Syphilis and High Blood Pressure. B. P. Thom, New York.—p. 89.

Faulty Attitudes in Children. J. Grossman, New York.—p. 93.

Child Health in Europe. E. M. Josephson, Paris.—p. 101.

Bladder Bogy. A. Nicoll, New York.—p. 103.

Acute Infections in Sebaceous Glands and Hair Follicles of Nasal Vestibule. L. M. Hurd, New York.—p. 105.

Biochemical Explanation of Silica Molecule. P. R. Vessie, Gowanda, N. Y.—p. 106.

### Michigan State Medical Society Journal, Grand Rapids

December, 1921, 20, No. 12

Tuberculous Pleural Effusion. J. B. Jackson Kalamazoo.—p. 491.

Analysis of One Hundred and Fourteen Cases of Breech Presentation. M. Burnell, Flint.—p. 494.

\*Bacillus Coli Infection During Pregnancy and Puerperium. H. H. Cummings, Ann Arbor.—p. 497.

Cesarian Section: Report of Case. R. F. Webb, Grand Rapids.—p. 502.

\*"Buried Loop" Operation for Shortening Round Ligaments of Uterus. J. N. Bell, Detroit.—p. 505.

Abdominal Angina. A. W. Crane, Kalamazoo.—p. 508.

Group Medicine or State Medicine? A. W. Blain, Detroit.—p. 510.

**Colon Bacillus Infections During Pregnancy.**—In the three cases cited by Cummings, *Bacillus coli* was the only etiologic agent demonstrated. A history of marked constipation was given by each patient. All three had suffered from attacks of pain in the right side of the abdomen. This condition had been diagnosed as appendicitis and two of the patients had had the appendix removed. In the two patients the onset of infection came between the third and fourth months of pregnancy, when the uterus would begin to encroach on the



ureters. Pyelitis was the earliest finding in these patients. The gallbladder was apparently involved in one case; the pleural cavity in two and both kidneys in two patients. The uterus was involved in only one patient. Cultures from the urine were positive for colon bacilli in all three cases; the blood was positive in one and the lochia in one. Two of the patients showed rapid improvement in the kidney findings after proper kidney drainage was established by the elevated Sims' position and the knee-chest position. In the third case these postural exercises were not used. All of the patients survived the infection. Two had living children at full term, while one had a premature labor at the seventh month, giving birth to a child that lived but three days.

**Operation for Shortening Round Ligaments.**—In Bell's operation the round ligaments are brought out through a perforation of the abdominal wall as in the Gilliam operation. A strip of rectus fascia from one-half to 1 inch in width is cut transversely internal to the loop of the ligament and dissected from the rectus. The fascial flap is drawn through the loop replaced in its original position and sutured there. Thus, the loop of the ligament is buried underneath the fascia and cannot escape to slide back into the abdominal cavity. The flap is cut to accommodate the length of loop.

### Military Surgeon, Washington, D. C.

January, 1922, 50, No. 1

- History of Military Medicine. F. H. Garrison.—p. 1.
- Restoration of Internal Table in Cranioplasty. A. M. Hanson, Haessly Hanson and Traeger, Faribault, Minn.—p. 31.
- Progress of Pulmonary Tuberculosis. G. H. Crofton.—p. 32.
- Our Responsibilities. M. H. Epstein.—p. 35.
- Critique of Army Ration, Past and Present. J. R. Merliu.—p. 38.
- Notes on American Mosquitoes. H. G. Dyar and C. S. Ludlow.—p. 61.

### New Jersey Medical Society Journal, Orange

January, 1922, 19, No. 1

- Preventive Surgery. J. W. Draper, Trenton.—p. 1.
- Toxic Thyroid. Treatment Under Ether-Oil-Colonic Anesthesia. G. K. Dickinson, Jersey City.—p. 10.
- Did Experience and Training of Physician in Late War Prove a Benefit to Him? A. L. L. Baker, Dover.—p. 13.
- American Medical Survey of Child Health in Galicia. L. Mitchell, Lemberg, Poland.—p. 14.

### New York State Journal of Medicine, New York City

January, 1922, 22, No. 1

- Value of Radium in Gynecology. F. E. Kenne, Philadelphia.—p. 1.
- Postoperative Use of Radium. E. A. Vander Veer, Albany.—p. 4.
- \*Epileptiform Manifestations in Endocrinous Disorders. S. A. Leahy, Brooklyn.—p. 8.
- Pyelitis. H. D. Furniss, New York City.—p. 14.
- \*Therapeutic Suggestions in Treatment of Epilepsy. L. P. Clark, New York City.—p. 17.
- Fear: A Harmful Emotion. How May We Eliminate It From Surgical Patient's Mind. D. Guthrie, Sayre, Pa.—p. 18.
- Psycho-analytic Experiences with Freud. A. Stern, New York City.—p. 21.
- Relation of Flexor-Adductor Foot Deformity to Diseases of Nervous System. W. M. Kraus, New York.—p. 25.
- History of Dispensary Law. E. E. Harris, New York City.—p. 27.

**Deficient Ovarian Secretion and Epilepsy.**—In the seven cases cited by Leahy, there appeared to be a definite relation between deficient ovarian secretion and epileptiform attacks, and between dyspituitarism attended by deficient secretion and epileptiform attacks. Practically all of the cases showed more than one glandular involvement. Striking physical abnormality was absent, except in one case. There were four cases showing a small sella turcica, one of which showed in addition calcification of the pineal gland, and another calcification of the posterior lobe of the pituitary gland. The cases showing dyspituitarism all showed the small sella turcica with the exception of one which showed the large sella turcica of acromegalic features. All these patients were given ovarian and thyroid extract with marked improvement in the majority of the cases and some improvement in the others.

**Epilepsy.**—Essential epilepsy, Clark says, is an organic disease of the whole personality, shown in a series of defects of instincts; these outstanding faults are summarized in egocentricity, supersensitiveness and emotional poverty. The fit is the maximum periodic manifestation of the disorder;

it is a psychic regression phenomenon, a protective release of the mental mechanism from too intense physical and mental stress. The line of treatment is analytical, explanatory and a broadly reeducative one, physically and mentally.

### Porto Rico Medical Association Bulletin, San Juan

Oct. 31, 1921, 15, No. 133

- \*Differential Diagnosis of Tropical Pyrexias Most Commonly Observed in Porto Rico. A. Torregrosa.—p. 197. Cont'n.
- Modern Ideas in Regard to Diet. R. del Valle Sárraga.—p. 220. Cont'd.
- The Clinical Laboratory and Its Work. R. del Valle Sárraga.—p. 233.

**Tropical Pyrexias.**—In this eighth instalment of his comprehensive study of the differential diagnosis of the fevers liable to be encountered in Porto Rico, Torregrosa discusses the bilious-hemoglobinuric form of malaria and of yellow fever and their differentiation from spirochetal jaundice, acute yellow atrophy of the liver and hemorrhagic nephritis. He is inclined to include in the group of continuous and intermittent pyrexias of tropical climates colon bacillus enteritis and the typhoid group. This subgroup occurs in all countries, but under tropical conditions they seem to display an exaltation of their own special phenomena. Malaria of the pernicious type may display its virulence not only by hyperpyrexia, sweating and algid state, but by sets of symptoms deceptively resembling those of the most diverse diseases and functional disturbances of organs and apparatus. Pernicious malaria affecting the brain may simulate poliomyelitis or epidemic encephalitis, acute mania, epilepsy or sunstroke. The diagnosis in tropical countries is generally possible with remittent fever only after negative examination of the blood; in the continuous fever, malaria is usually thought of only after exclusion of other diseases.

He discusses further the fevers that are neither intermittent nor continuous, especially the irregular fever with helminths, dysentery, etc. Malaria may assume an irregular form, and with a dubious diagnosis the patient does not get enough quinin, which still further masks the malarial origin of the brief attacks at long irregular intervals, with euphoria in the intervals. The ascaris may be responsible for an irregular fever, especially in children, and it may induce a train of symptoms suggesting gallbladder or appendix disease; in one case the discovery of an ascaris in the stools just before the contemplated appendectomy gave the clue for a complete cure under a vermifuge. In Porto Rico, convulsions, with or without fever, are frequently noted in children with ascariasis. In one such case the diagnosis of tuberculous meningitis had seemed inevitable, but lumbar puncture was negative and the symptoms all subsided after santonin. He adds that there is scarcely a physician in Porto Rico who has not seen cases of this kind. He warns further that the discovery of the ascaris does not necessarily imply that it is responsible for the symptoms observed unless the symptoms subside after expulsion of the helminths.

### Southwestern Medicine, El Paso, Texas

January, 1922, 6, No. 1

- Keeping Faith. J. Vance, El Paso, Texas.—p. 1.
- Fracture of Pelvis. Comments on Complications, Mortality and Ultimate Results. J. E. Bacon, Miami, Ariz.—p. 4.
- Fractured Vertebrae. W. B. Bowman, Los Angeles.—p. 13.
- Some Ocular Manifestations of Tuberculosis. H. H. Stark, El Paso, Texas.—p. 16.
- Absorption and Elimination of Water in Relation to Abdominal Surgery. H. Shoemaker, Los Angeles.—p. 19.
- Prognosis in Pulmonary Tuberculosis. J. E. J. Harris, Albuquerque, N. M.—p. 22.
- Psychoneurosis, Incident to War Experience. S. D. Swope, Deming, N. M.—p. 26.

### West Virginia Medical Journal, Huntington

December, 1921, 16, No. 6

- Abdominal Cesarean Section, with Report of Cases. C. F. Hicks, Welch.—p. 207.
- Cesarean Section. W. H. Wallingford, Princeton.—p. 212.
- Pilonidal Abscess. C. S. Hoffman, Keyser.—p. 220.
- Some Minor Points of Major Importance to Surgeon. H. G. Nicholson, Charleston.—p. 222.
- Trans-Duodenal Biliary Drainage. T. P. Sprunt, Baltimore.—p. 225.
- Anesthesia by Oral Insufflation in Tonsillectomy. L. D. Norris, Fairmont.—p. 234.
- Laity. J. A. Porter, Littleton.—p. 238.



## FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

## Archives of Radiology and Electrotherapy, London

December, 1921, 26, No. 257

Problems of Physics. O. W. Richardson.—p. 205.

\*Treatment of Infantile Paralysis. H. Bordier.—p. 215.

On Use of Perpendicular Pins and "Levelling Compass" in Localization. M. H. Knoch.—p. 220.

Malunited Abduction Fracture of Ankle Joint Treated by Operation. C. P. G. Wakeley.—p. 229.

**Treatment of Infantile Paralysis.**—Bordier claims that the prognosis of infantile paralysis is far from being so grave as certain practitioners think. Therapeutic results obtained by modern procedures, and in particular by diathermy, radiotherapy and galvanization, prove that infantile paralysis can be, if not completely cured, at least transformed into an affection which carries with it neither infirmities nor complete crippledom. The first therapeutic indication consists in acting on the medullary lesion by means of radiotherapy. Although radiotherapy does not pretend to reconstitute nerve cells which are completely atrophied, it must have the effect of reestablishing the cells incompletely destroyed and of arresting the progress of the poliomyelitis. The treatment must be undertaken as early as possible. The second indication is to combat the lowering of the temperature, not only of the atrophied muscles but of the limb to which these atrophied muscles belong. The most efficacious means to bring the temperature of a chilled limb to its normal amount is diathermy. When the affected limb is as warm as the other, electrical treatment must be commenced; this will be applied according to the results of the electrodiagnostic examination, and chiefly consists in rhythmic and reversed galvanization of the muscles presenting the reaction of degeneration complete or partial. This treatment must be followed carefully and persistently for months, or even for years, if necessary, if a satisfactory result is to be obtained in any of these cases.

## Edinburgh Medical Journal

January, 1922, 28, No. 1

Basal Metabolic Rate: Its Determination and Clinical Significance. J. Meakins and H. W. Davies.—p. 4.

\*Wassermann Test in General Practice. A. Mills.—p. 19.

Caesarean Section: Its Indications and Technic. J. W. Ballantyne.—p. 28.

**Wassermann Test in Inherited Syphilis.**—Mills has found that a patient suffering from inherited syphilis may have a positive father and a positive mother, or a positive father and a negative mother. He has not yet met with one having a negative father and a positive mother. A positive father may propagate syphilitic children long after he has ceased to be directly infective to the mother. In an industrial school of which Mills is medical officer, 70 per cent. of the children are the subjects of inherited syphilis. Many patients display none of the orthodox cardinal signs. An infant may be suffering from inherited syphilis, though there be no history of rash, snuffles or condylomata. Inherited syphilis may manifest itself in a variety of other conditions, curable by antisymphilitic treatment, and these conditions were not recognized in the past as being caused by syphilis. The sole manifestation of inherited syphilis in an infant may be dietetic difficulties, with little or no increase in weight or with actual wasting. Inherited syphilis may explain recurring attacks of gastrointestinal disturbance in older children and in adults. In particular it may explain attacks of abdominal pain which may lead to a diagnosis of appendicitis, gallstones, Dietl's crisis, and probably of other acute abdominal conditions. Syphilis can produce in a young child a condition impossible to distinguish from tuberculous peritonitis. The external appearances of anemia of a persistent nature and not improved by medication with iron may be the sole manifestation of inherited syphilis. Syphilitic affections of bones, joints and glands are common. Epilepsy is frequently the result of syphilis. Miscarriages may be predisposed to by inherited syphilis. Anginal symptoms, not necessarily those of true angina pectoris, are naturally a frequent result of syphilis.

His blood is definitely positive, and Mills states his respiratory trouble may be syphilitic in origin. A gummatous infiltration of the bronchi may produce bronchiectasis. Syphilis can give rise to as many symptoms as there are functions of the nervous system. Mills points out that the possibility of a child having acquired syphilis must not be forgotten.

## Indian Medical Gazette, Calcutta

December, 1921, 56, No. 12

Arsenical Dermatitis During Treatment with Arsphenamin. W. L. Harnett.—p. 441.

Psycho-Analysis and General Practitioner. O. A. R. Berkeley-Hill.—p. 443.

\*Bronchomoniliasis. T. Sur.—p. 445.

Bilharzia in Mesopotamia. P. W. Harrison.—p. 449.

Case of Snake-Swallowing in Insane. P. C. Das.—p. 450.

Toxic Symptoms by Local Application of Belladonna. R. K. Ketkar.—p. 451.

Case of Bi-Lateral Cerebellar Abscess with No Localizing Symptoms. E. C. Spaar.—p. 451.

Novarsenobillon in Syphilitic Buboës and Chancre. T. Vadivelu.—p. 455.

Case of Intestinal Obstruction Attended with Internal Hemorrhage. S. L. Sen.—p. 455.

Case of Bacillus Coli Pericarditis. M. Ganguli.—p. 456.

Case of Rheumatic Adenitis. G. DeSilva.—p. 456.

Round Worm in Surgery. E. N. Graham.—p. 457.

Case of Pleuropneumonia Successfully Treated by Injection of Pneumonia Phylacogen. G. DeSilva.—p. 457.

Injection for Piles. A. Hooton.—p. 458.

**Bronchomoniliasis.**—The organisms found by Sur in his case consist of budding forms of yeastlike cells, resembling saccharomyces, but mycelial threads as well have always been found present. The filamentous hyphae show only intramycelial endospores but formation of ascus has never been observed. The budding and growing cells at first assume a moniliform character and later on grow into long delicate filamentous threads and form a mycelium. Neither the cells nor the filaments are acid-fast organisms. In liquid glucose, maltose and saccharose mediums it shows the production of acid and gas, while showing no changes in lactose, mannite and dulcitate media. The litmus milk showing only acid but no clotting. In peptone water and nutrient broth mediums the growth forms a deposit at the bottom of the tubes, the medium fluid remaining clear. All these above characters conform to the morphologic and cultural characters of *monilia tropicalis* as described by Castellani.

## Japan Medical World, Tokyo

Dec. 15, 1921, 1, No. 8

Periodicity of Filaria Bancrofti. S. Saganuma.—p. 1.

\*Experimental Studies of Metastasis of Mouse Carcinoma. S. Okonogi.—p. 4.

\*Quantity of Combined Carbonic Acid in Cerebrospinal Fluid. E. Tokuoka and K. Ogasawara.—p. 6.

Nerve Endings in Heart Muscle of Man. K. Sato.—p. 10.

**Anemia Favors Occurrence of Carcinoma Metastases.**—Okonogi found experimentally that by frequent bleeding of mice who were the victims of carcinoma, metastasis, especially in the liver, kidney and lung, in the order named, was favored. Evidently a state of anemia favors the formation of metastases. Fifty-three of 100 mice that were bled had metastases, whereas only twenty-two of 100 mice not bled had metastases.

**Carbonic Acid in Spinal Fluid.**—The amount of carbonic acid combined in the spinal fluid as bicarbonate in 100 c.c. of spinal fluid of healthy women at 0 C. under the pressure of 760 mm. averages 63.0 volume per cent. This is about 20.0 volume per cent. according to Tokuoka and Ogasawara more than that in normal persons. The carbonic acid in 100 c.c. of venous blood of adult women averages 54.4 volume per cent. Starvation for from twenty-one to twenty-four hours and the administration of castor oil before operation causes a slight decrease of carbonic acid. The amount of carbonic acid in the venous blood is markedly decreased after starvation, from 3.9 to 1.75 volume per cent. The amount of carbonic acid in cancerous women averages 60.1 volume per cent. The acid in the blood of cancerous women averages 49.62 volume per cent.



**Japan Naval Medical Association Bulletin, Tokyo**

October, 1921, No. 34

Experiment on Lipovaccine of Shiga's Bacillus. R. Watanabe.—p. 1.  
Experiment on Serum Lypase. M. Ocda.—p. 2.

\*New Method for Staining Flagellated Bacteria and Spirochetes. H. Hidaka.—p. 2.

**Staining Flagellae and Spirochetes.**—Hidaka's method is as follows: Mordant—100 c.c. of a 10 per cent. solution of potassium acetate is heated to about 40 C.; add 100 c.c. of 3 per cent. solution of phenol containing 10 gm. of tannic acid; then add 20 c.c. of a 2 per cent. solution of tartar emetic. This mixture, solution A, is turbid white. It is kept in a brown bottle and is used as mordant. Solution for silvering: 3 per cent. solution of silver nitrate is added, drop by drop, with enough ammonia to clear the brown mixture; then with 3 per cent. solution of silver nitrate until the mixture begins to be turbid again. This mixture is solution B. Method of staining: (a) Cover the smear specimen with a solution A. (b) Heat in paraffin incubator for five minutes, the temperature being kept at 70 C. for spirochetes and typhoid bacillus, 80 C. for spirillum cholerae. (c) Cool the slide in the air and (d) wash thoroughly with tap water. (e) Solution B is placed on the slide, which is treated in the same manner as under (b) and (c). (f) Twenty per cent. solution of sodium hyposulphite is added and left for from ten to twenty seconds; the slide is then washed, dried and mounted with xylene balsam for examination. The slide treated under (a), (b), (c) and (d) can be stained with the usual anilin dyes.

**Journal of Laryngology and Otology, Edinburgh**

January, 1922, 37, No. 1

Hemorrhage During and After Tonsillectomy; Surgical Principles and Methods for Its Control. C. G. Coakley.—p. 3.

Pathologic and Clinical Aspects of Deaf-Mutism. J. S. Fraser.—p. 13.  
Case of Fatal Meningitis Following Submucous Resection of Nasal Septum. W. E. Powell.—p. 39.Foreign Body in Right Bronchus. T. A. MacGibbon.—p. 40.  
Facial Paralysis Associated with Acute Middle Ear Suppuration. E. Culpin.—p. 41.**Lancet, London**

Dec. 31, 1921, 2, No. 5131

Subtropical Esculents. M. C. Grabham.—p. 1357.

\*Use of Levulose as a Test for Hepatic Inefficiency. J. C. Spence and P. C. Brett.—p. 1362.

\*Tuberculin Treatment of Bronchial Asthma and Hay-Fever. W. S. Van Leeuwen and H. Varekamp.—p. 1366.

Standardization of Suspensions of Red Blood Cells for Wassermann Tests. J. W. Bigger.—p. 1369.

Serous Meningitis. A. G. Yates.—p. 1371.

\*Case of Partial Pyloric Stenosis. R. P. Rowlands.—p. 1373.

Loss of Reflex to Light Restored in Sleep. A. Garvie.—p. 1374.

**Levulose as Test of Hepatic Inefficiency.**—Spence and Brett assert that a valuable indication of the efficiency of the liver can be obtained by estimating the changes in blood sugar concentration which follow the ingestion of levulose. In a healthy adult, with a normal liver efficiency, a dose of 50 gm. levulose will produce no appreciable rise in blood sugar. In a subject with diminished liver efficiency a definite rise in blood sugar will result from the ingestion of levulose. The height and length of the "blood-sugar curve" which portrays this rise will be in proportion to the degree of liver inefficiency which is present. The test affords a means of estimating the degree of liver damage in cases of toxic arsphenamin hepatitis and other diseases of the liver. The kidney threshold for levulose is lower than that for glucose and varies in different individuals. The inconstancy of the threshold for levulose renders the older method of testing liver efficiency by urinary examination inaccurate.

**Tuberculin Treatment of Asthma and Hay-Fever.**—Van Leeuwen and Varekamp have noted that very often persons who show a strong skin reaction after serum injections also give a very marked tuberculin (Pirquet) reaction. Of thirty-four cases of bronchial asthma, thirty gave a positive Pirquet test and four patients were negative. The four negative cases were not treated with tuberculin and will not be considered further in this paper. Only two cases of hay-fever were treated with tuberculin. The tuberculin used was Koch's T. O. A. All injections were given subcutaneously, beginning with low doses—mostly 1 c.c. of a 1:100,000 dilution—which

gave no general reaction. During the treatment of these cases the decided impression received was that it was better to keep to very low doses: The most prominent factor of treatment is the disappearance of the acute attacks of asthma in a very short time. When the acute attacks of dyspnea disappeared after the first injections of tuberculin, one of two conditions remained. Either the patient was completely cured or there was a chronic bronchitis left. Even in the latter case the improvement was marked. Most of the patients considered themselves to be cured and took the remaining bronchitis very lightly. Of twenty-eight patients treated eighteen are completely cured; in four, acute attacks of asthma completely or almost completely disappeared, but where a chronic bronchitis remained, five were improved by treatment and in one case the treatment failed to improve the patient's condition.

**Partial Pyloric Stenosis.**—Rowlands' case is a typical instance of partial stenosis due to spasm and hypertrophy of the pyloric sphincter. Finney's operation was done with excellent result. Five months after the operation the patient had not vomited and was entirely free from pain.

**Medical Journal of Australia, Sydney**

Dec. 10, 1921, 2, No. 24

Listerian Oration. F. D. Bird.—p. 527.

\*Clinical Manifestations of Reserve of Heart Muscle. N. W. Markwell.—p. 534.

\*Convention and Decapsulation in Acute Nephritis. J. F. Mackenzie.—p. 535.

Treatment of Urethritis. R. J. Silverton.—p. 536.

Rupture of Bowel by Compressed Air. W. A. Halles.—p. 538.

\*Extreme Ascites. I. C. Hains.—p. 539.

**Reserve of Heart Muscle.**—Markwell asserts that an initial intrinsic period of ventricular systole exists and can be recognized. This initial intrinsic period is the measure of the reserve of the heart muscle. Its duration can be determined by the trained ear and it can be demonstrated in the cardiogram. Shortening of the initial intrinsic period is a necessary accompaniment of a lessening of the reserve. At the commencement of such a condition there are, typically, no heart symptoms. The mechanism of the heart action is discussed.

**Decapsulation in Acute Nephritis.**—Mackenzie urges early decapsulation of the kidney instead of waiting until it is too late. Not only cases of acute nephritis but that type of pyelitis or pyelonephritis with bacilluria, very obstinate to treat by ordinary means is considered an indication for the operation.

**Extreme Ascites.**—Hains removed 27 quarts of fluid by paracentesis from a patient who had heart disease.

**Medical Journal of South Africa, Johannesburg**

November, 1921, 17, No. 4

Toxic Idiopathies or Idiopathic Toxemias. E. G. Drury.—p. 66.

Human Anthrax and Arsphenamin. A. Pijper.—p. 74.

**Practitioner, London**

January, 1922, 108, No. 643

Etiology, Prevention and Treatment of Phthisis. R. D. Powell.—p. 1.

Prevention of Venereal Diseases. A. Reid.—p. 19.

Id. E. B. Turner.—p. 30.

Arteriosclerosis. G. Evans.—p. 38.

Recent Work on Diseases of Heart. C. W. Chapman.—p. 45.

Educating the Patient. L. Grant.—p. 58.

Pneumonia and Its Treatment. A. E. Rouse.—p. 67.

Caesarean Section Necessitated by Adhesion after Gastroenterostomy. D. D'Esterre.—p. 69.

**Annales de Médecine, Paris**

October, 1921, 10, No. 4

\*Syringomyelia plus Spinal Cord Tumors. G. Bickel.—p. 253.

\*Spinal Fluid in General Paresis. R. Targowla.—p. 275.

\*Metastasis in Bones. J. Catsaras.—p. 295.

\*The Oculocardiac Reflex. J. A. Barré and L. Crusem.—p. 303.

Fundamental Principles of Auscultation. E. Rist.—p. 317.

Mesocephalic Syndrome with Objective Sensory Disturbances. Faure-Baulieu and H. Bouttier.—p. 332.

**Tumors of Spinal Cord.**—Bickel describes with photomicrograms the case of a woman of 23 who slowly developed, after a blow on the neck, a syringomyelic gliomatosis, and with



this was found, an ependymal spongioblastoma in the cervical spinal cord, and a glio-ganglioneuroma in the region of the fourth ventricle. The combination of these three types of tumors with a defect in development of the spinal cord, in this case, suggests an embryonal origin for primary tumors of the central nervous system and for syringomyelia. A bibliography of 136 titles is appended.

**The Spinal Fluid in Progressing General Paresis.**—Targowla's conclusions from the findings with the various tests for the spinal fluid applied in over twenty-one cases of general paresis are that not one of the reactions is specific but, taken together, they testify to the diagnosis and to the intensity of the disease process. The colloidal benzoin test seems to be especially instructive in indicating the intensity of the meningo-encephalitis. In fifty cases in which it was studied, the intensity of the reaction varied with the remissions of the disease and corresponded to the clinical course.

**Metastatic Cancers in Bones.**—Catsaras has been able to find only one case on record in which there was metastasis in several bones from a cancer in the liver. He here describes a second case; the primary adenocarcinoma in the liver with cirrhosis had entailed metastasis in the head and neck of the right femur. The cells of the tumor in the femur showed the same arrangement as in the liver, and abundant production of bile, the tumor tissue being deep green in color.

**The Oculocardiac Reflex.**—Barré and Crusem abbreviate this to "roc." They report extensive research with it in normal persons with a spring eyeball compressor with which the pressure can be graduated and recorded. The pulse may be slowed by it up to 30 or 40 beats in apparently entirely normal conditions. They attach no significance from the diagnostic point of view to the inversion of the roc. They explain the oculocardiac reflex as a sympathetic-vagus phenomenon, the trigeminal not involved.

### Archives de Médecine des Enfants, Paris

December, 1921, 24, No. 12

- \*Syphilitic Pseudoparalysis. H. Barbier.—p. 713.
- Chronic Rheumatism in Children. P. Nobécourt and L. Nadal.—p. 731.
- The Weight of a Dinner. J. Camescasse.—p. 747.
- \*Orchitis During Diphtheria. G. Blechmann and J. Stiassnie.—p. 749.
- Tuberculosis in Infants in New York. J. Comby.—p. 753.

**Atrophy from Inherited Syphilis.**—Barbier discusses the treatment for inherited syphilis responsible for arrest of development of the bones plus more or less cachexia. He warns that specific treatment for the *atrophie hérédosyphilitique* should not be begun until digestive disturbances have been corrected. Conditions in 22 of 40 cases improved so materially under treatment that the children left the hospital in good condition, including 3 with Parrot's disease; 9 were much improved, including 1 with Parrot's disease; 7 died, as also 2 others with Parrot's disease. In the total 6 cases of Parrot's disease, the bones were abnormally transparent and there were subperiosteal deposits on all the bones. The femur had fractured in 2 of the infants; none was over 2 or 3 months old. When the manifestations of the inherited syphilis are in skin or bones, they respond to treatment better than when the viscera are involved. Secondary infections of the skin interfere with specific treatment, and it may be well to suspend it until these are cured. Each infant has to be studied separately as the resisting powers vary so widely, and with atrophy the weight is no guide. He begins with very small doses by subcutaneous injection and repeats every fifth day. Mercurial treatment first, and then an arsenical, seems to give the best results. He thinks the treatment should be repeated from time to time, like the courses of treatment in acquired syphilis, in order to maintain the benefit derived. He illustrates his statements with a number of the more typical cases described in minute detail.

**Orchitis in Diphtheria.**—The boy of nearly 7 developed bilateral orchitis and epididymitis in the course of very severe diphtheria, requiring intensive antitoxin treatment. Blechmann is inclined to ascribe these genital complications to the antiserum, as they appeared and disappeared with other symptoms of serum sickness.

### Bulletin de l'Académie de Médecine, Paris

Nov. 15, 1921, 86, No. 37

- \*Congenital Dislocation of Shoulder. P. Coudray.—p. 262.
- \*Effects of Artificial Pneumothorax. Armand-Delille et al.—p. 264.
- \*Edema in Hemoclastic States. J. Le Calvé.—p. 265.
- Flies and Cholera Infantum in Institutions. A. Lesage.—p. 267.

**Congenital Dislocation of the Shoulder.**—Coudray reports two cases of luxation of the shoulder from malformation or arrested development of the shoulder. The right arm in both was completely useless. He ordered massage and passive exercising of the arm, and in the child improvement was prompt and progressive. The head of the humerus was of normal shape, and the child soon could raise her hand to her head. The malformations in the young man were irreparable.

**Antibodies in Serum Under Artificial Pneumothorax.**—Under the induced pneumothorax, not only the fever and expectoration subside but the antibody count of the blood grows less, just as if the tuberculous process had been cut out entirely.

**Edema in Hemoclastic Conditions.**—The anaphylactic shock and the protein shock, as well as asthma, urticaria, migraine and hemoglobinuria all have the feature in common that the sympathetic vasomotor system is predominantly affected. This is manifested by an early and constant drop in the blood pressure, and vasodilatation. Le Calvé explains how this entails edema.

Nov. 29, 1921, 86, No. 39

- \*The Criminal Insane. C. Vallon.—p. 298.
- \*Fixation of Poisons on Nerve Centers. J. Camus.—p. 302.
- \*Friedberger Test for Typhus. G. Delamare.—p. 305.
- \*Desquamation in Typhus. Id.—p. 306.
- \*Shock Treatment of Experimental Infection. F. Arloing, A. Dufourt and L. Langeron.—p. 307.
- \*Prophylaxis of Diphtheria. E. Sacquépée.—p. 309.

**The Criminal Insane.**—Vallon states that the French laws make no provision for the criminal insane. When the court accepts the plea of insanity as attenuating the responsibility for a crime, the accused is sent to an insane asylum. When in the judgment of the medical force of the asylum no further psychiatric treatment is needed, he is dismissed. He may thus escape both prison and internment.

**Fixation and Neutralization of Poisons in the Nerve Centers.**—Camus has been studying this subject for ten years, and reports findings in rabbits and dogs. The poisons that display an immediate toxic action are more numerous than those that act tardily. Lead is one of the latter; intraspinal injection of 2 or 4 mg. of lead chlorid causes no disturbances for two or three days, but then convulsions develop, speedily fatal. The same salt injected directly into one hemisphere causes a small focus of necrosis which becomes encysted and no appreciable symptoms follow. The same dose injected by the vein is borne without harm if the meninges are sound, but if a mild aseptic meningitis has been previously induced, the animal develops convulsions the same as if the chemical had been injected intraspinally. A small dose of choralose irritated the vomiting center while a little larger dose paralyzed it, although none of the other centers, respiration, heart, vasomotor, secretory, etc., were affected in the least. Syncope in the course of spinal anesthesia can be effectually combated with caffein if the amount of the anesthetic is below the lethal dose, but not otherwise. But when supplemented by long artificial respiration, the anesthetic may be eliminated, even when above the lethal dose, and resuscitation follows. His experiments with tetanus antitoxin injected intraspinally confirmed its curative power, but this seems to be because it prevents further fixation of the toxin on the nerve centers, rather than from any direct neutralization of the toxin.

**The Friedberger Test in Typhus.**—Delamare injected subcutaneously a small amount of a culture of *Proteus X<sub>15</sub>*, heated for two hours, in five cases of typhus, fourteen of typhoid, and two of relapsing fever. Friedberger has asserted that no local reaction follows in typhus, but Delamare found the reaction equally pronounced in all his material with the single exception of one case of typhus. It thus has little differential value, but it suggests, he says, that the cyanosis, herpes and desquamation in typhus are due to secondary infection with the proteus. The desquamation in typhus is fine, resembling



the particles rubbed up on paper with a rubber eraser. It occurs usually between the tenth and sixteenth days, and may aid in the tardy or retrospective diagnosis of the typhus.

**Shock Treatment of Experimental Infection.**—Arloing and his co-workers relate that in research with 200 guinea-pigs an induced sero-anaphylactic shock protected the animals against otherwise fatal experimental infection with the pyocyanus in 88 per cent., with typhoid bacilli in 15 per cent., and with the colon bacillus in 30 per cent. The controls all died. The *choc sérique* was induced six hours after the inoculation with the bacteria. Infection with the pneumococcus, tubercle and anthrax bacilli did not seem to be modified by the shock treatment, even repeated in series.

**Prophylaxis of Diphtheria.**—Sacquépée assumes that when the diphtheria bacillus is passed from one person to another it retains its shape, so that if the first person had long bacilli, the bacilli in the second will be long. Hence if the first cases in an epidemic show long or medium bacilli, the contacts presenting only short bacilli can be disregarded. This simplifies materially the search for carriers, and their treatment, and his experience has confirmed the reliance that can be placed on thus weeding out the potentially dangerous from the harmless contacts.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 11, 1921, 45, No. 32

Otitis in Nurslings. L. Tixier.—p. 1449.

Streptococcus Septicemia After Rubella. A. Florand and N. Fiessinger.—p. 1452.

Syphilitic Hyperchromia of the Neck. Gougerot.—p. 1453.

\*Gastric Spasm in Infant. G. Variot.—p. 1454.

\*Chronic Mechanical Jaundice. L. Tixier and E. Douay.—p. 1459.

Secondary Sclerosis of Pulmonary Artery. Ribierre and Giroux.—p. 1465.

\*Recurring Pneumonia. A. Sacquépée.—p. 1476.

Epidemic Encephalitis in Cortex. Delater and Rouquier.—p. 1483.

\*Mercury and Bismuth. G. Milian.—p. 1486.

Some Unusual Roentgenographic Findings in Digestive Tract. Ramond, Jacquelin and Borrien.—p. 1490.

Familial Erythema Nodosum and Miliary Erythema. Gendron.—p. 1495.

**Gastric Spasm in an Infant.**—In Variot's case, the apparently healthy, breast fed infant developed uncontrollable vomiting during the third week of life, and roentgenoscopy revealed an hour-glass spasm of the stomach. By the end of the second month the aspect was that of extreme athrepsia, but recovery gradually followed under persevering feeding with hypersweetened milk with one third water, preceded by a small spoonful of a solution of 5 parts sodium citrate in 300 parts distilled water, supplemented by a daily injection of sea water (*plasma marin*). In a preceding case of this *médiospasme gastrique prolongé*, the vomiting kept up for several months but the tendency was finally overcome by the same measure, extra-sweet milk. Only the roentgen rays can distinguish between this bilocular spasm and congenital hypertrophy of the pylorus, but operative measures such as the latter requires would probably be futile with the former. Extra-sweet milk, he says, seems to combat the tendency to vomiting in infants, whatever its cause. The stomach in both his cases was left abnormally wide and the pylorus region shaped like a cylinder; this suggests that some congenital anomaly may be responsible for the spasm. This anomaly, unlike the congenital hypertrophy, may become attenuated in time and outgrown.

**Chronic Mechanical Jaundice.**—A hydatid cyst in the liver was responsible for the jaundice in the boy of 15 as it compressed the common bile duct.

**Relapsing Pneumonia.**—In the first attack there were two separate foci, and each was due to a different type of pneumococcus. Only one was affected by the serotherapy used. At the second attack, a vaccine made from each of the two types of pneumococci proved promptly effectual, notwithstanding that the patient had been contending with purulent pleurisy in the interim. The whole siege lasted for over two months.

**Mercury Plus Bismuth.**—Milian remarks that now that mercury seems to be resuming its ancient vogue, we may have to contend with more or less intolerance of mercury by the mouth. He has found that mixing 0.75 gm. of bismuth subnitrate with 0.01 gm. of calomel (for one of 60 powders) is

an excellent means for warding off signs of intolerance in treating syphilis. The bismuth seems to prevent diarrhea, anorexia, stomach disturbances and even stomatitis, when mercury is being taken by the mouth. It seems advisable to give mercury in this way even if only to supplement it by other routes. The bismuth has to be kept up as long as the mercury is being given. He adds that it has quite a spirocheticidal action of its own.

### Journal de Chirurgie, Paris

December, 1921, 18, No. 6

\*Tearing Loose of the Mesentery. L. Sencert and G. Ferry.—p. 561.

\*Traumatic Epilepsy. C. Lenormant.—p. 577.

**Tearing Loose of the Mesentery.**—Sencert and Ferry report two cases of abdominal contusion in a child of 9 and man of 45 in which the laparotomy revealed that the only essential injury was that the mesentery had been torn loose, close to the intestine, over a stretch of 20 and 30 cm. In the child the intestine had been torn along with its mesentery; in both the segment of bowel was resected. In 32 such cases on record, the internal hemorrhage was severe in 20, proving fatal in 5 of them in which no operation was attempted, and in 4 operative cases. In others the hemorrhage was very slight; in 3 cases the hemorrhage did not occur until after a considerable interval. The trauma in these cases was usually from being run over, or crushed between two wagons, or a beam rolling on the abdomen. The contusion was violent, but the violence was applied slowly and progressively and at a tangent to the walls of the abdomen. In 10 of the cases analyzed the men kept on with their work for several hours, complaining merely of a dull pain deep in the abdomen, with no signs of hemorrhage or perforation of a viscus. Not until after thirty-six or forty hours, or even seven or eight days in 2 cases, symptoms of diffuse peritonitis developed. The loop deprived of its mesentery had become gangrenous. In one of the 2 cases personally observed there was a very sharp pain at a certain spot on the lightest palpation, and immediate contraction of the muscles above. The spot was not spontaneously painful. This phenomenon should suggest the possibility of the mesentery being torn loose. If the mesentery is merely torn longitudinally, at a distance of over 2 cm. from the bowel, and the laceration is not over 9 cm. long, it might be sutured, and the loop left unmolested. But it is safer to resect it at once, and under other conditions there should be no hesitancy in resecting it. A tear in the mesentery that escapes detection might cause acute occlusion later by a loop slipping into it.

**Operative Treatment of Traumatic Epilepsy.**—Lenormant's verdict after analyzing the literature on this subject and fifty-one recent cases is that operative treatment is not fraught with special danger while it is often effectual, but it rarely cures completely, and exceptionally it may aggravate conditions. It is justified in cases rebellious to medical measures.

### Lyon Médical

Aug. 25, 1921, 130, No. 16

Radium Treatment of Uterine Cancer. R. Condamin.—p. 719. Conc'n in No. 17, p. 763.

Sept. 25, 1921, 130, No. 18

Treatment of Pleural Fistulas. M. Durand and L. Michon.—p. 807. Appendicitis and Hematuria. A. Giuliani.—p. 813.

Oct. 10, 1921, 130, No. 19

\*Coryza in Young Infants. P. Chatin.—p. 850.

**Intra-Ocular Treatment of Coryza in Young Infants.**—Chatin insists on the necessity for thorough treatment of coryza in young infants. The interference with suckling and with respiration is negligible in comparison to the danger from such an infectious focus for the ears and lungs, and as a source of infection for others. He has found very useful the instillation in the eyes, two or three times a day, of a 10 per cent. collyrium of argyrol, to act on the nose through the lacrimal passages. The physician must introduce the collyrium himself at first. The mother soon appreciates the benefit from this treatment, and is then willing to continue it herself. He reiterates that it is absolutely harmless and an almost certain cure for coryza in young infants. He has been using it for ten years.



## Médecine, Paris

November, 1921, 3, No. 2

- \*Syphilography and Dermatology in 1921. H. Gougerot.—p. 85.  
Mikulicz' Disease and Syphilis. Jeanschne.—p. 100.  
\*Means to Ward Off Arsphenamin Shock. J. A. Sicard.—p. 102.  
\*Nature of Nitritoid Crisis. M. Pomaret.—p. 107.  
Nitritoid Crises Under Arsenicals. Lévy-Bing and Gerbay.—p. 111.  
Technic for Intramuscular Injections. Spillmann and Watrin.—p. 112.  
Intramuscular Injections of Arsphenamin. Bloch and Pomaret.—p. 114.  
Dementia Praecox and Syphilis. L. Babonncix.—p. 118.  
Treatment of New-Born with Syphilis. M. Pinard.—p. 120.  
\*Tertiary Syphilitic Fever. M. Chiray and A. Coury.—p. 123.  
\*Traumatic Syphilis. C. Simon.—p. 125.  
\*Arsphenamins and Blood-Producing Organs. A. Lévy-Franckel.—p. 129.  
\*Sterilization of Linen for Infants. E. Weill.—p. 131.  
Disfiguring Seborrhea, Pigmentation and Warts. Sabouraud.—p. 136.  
Acute Phthiriasis. G. Milian.—p. 138.  
Cerium Salts in Treatment of Tuberculids. H. Grenet et al.—p. 142.  
General Treatment in Eczema. A. Louste.—p. 147.  
\*Treatment of Leukoplakia. Vignat.—p. 150.  
\*Gonorrheal Rheumatism. L. Ramond.—p. 154.  
Inguinal Lymphogranuloma. L. Bory.—p. 156.

**Syphilography and Dermatology in 1921.**—Gougerot comments on the lively discussion still going on as to the comparative merits of large intravenous or small intramuscular or subcutaneous doses of the arsphenamins. All agree on the danger of inadequate treatment. Almost all agree also on the necessity for mercury to consolidate the results obtained with the arsphenamins. The tartrobismuthate of potassium and sodium has been extolled in treatment of syphilis by Levaditi and Sazerac, but no conclusive evidence has been offered as yet, and there is some risk that this drug may induce fever and albuminuria and a stomatitis like that of mercury. Several have reported good results by associating protein therapy with arsphenamin. Some state that the phenomena of the secondary stage disappeared as promptly under parenteral injections of peptone as under arsphenamin treatment. Schreiner advises an intravenous injection of peptone four hours after the injection of arsphenamin. "Is a rebellious Wassermann reaction due to the habit of secreting antibodies or is it a sign of still persisting infection?" He inclines to the latter view, himself. To ward off toxic action from the arsenicals, sodium hyposulphite is advocated by some; alkalines, etc., by others. In dermatology, a number of important works are cited, especially Brocq's study of dermatoses in the emotionally unstable under the influence of toxic action, and the numerous works on antianaphylaxis, specific or peptone; on urticaria from fatigue, from rapid eating without mastication, and on the necessity for individualizing treatment for cancer: "The basal cell epithelioma calls for radiotherapy; the prickle cell epithelioma for igni-cauterization; the melanic epithelioma for electrolysis." Autohemotherapy is still on trial; in one case it induced a threatening shock. The foreign body sarcoids that develop from injection of oil, seem to be usually tuberculous or develop on a tuberculous soil. In Gougerot's case a guinea-pig developed tuberculosis after inoculation from the lump. He remarks that France was the pioneer in antivenereal prophylaxis, but lags far behind other countries in its practical application. Tunis and Morocco have adopted his program and will soon be ahead of Paris. He adds that he will send a copy of his program to any physician or hygienist applying for it. Address Dr. Sicard de Plauzoles, 6 rue Logelbach, Paris.

**Antishock Measures.**—Sicard's success in warding off toxic action from the arsenicals has been repeatedly mentioned in these columns. Any means to prevent upset in the colloidal balance of the blood serum will ward off the shock, he reiterates, and may cure it if under way. An intravenous injection of 1 gm. of sodium carbonate in 40 c.c. of distilled water will usually prevent any colloidoclastic shock when the arsphenamin preparation is injected afterward. Another way to prevent it is to inject a small amount of the arsenical into the arm below a constricting band. After waiting four or five minutes the constricting band is removed very slowly. Then the rest of the arsenical is injected. This form of skeptophylaxis has proved simple and effectual both for arsphenamin and horse serum shock. A third measure is subcutaneous injection of epinephrin plus pituitary extract. This is effectual also in treating established arsphenamin

shock. In migraine, if the dose of peptone before the meal is not effectual or loses its efficacy, he orders 12 drops of 1:1,000 epinephrin to be taken before rising and 1 gm. of potassium bromid on retiring. If this fails, the sodium carbonate by the vein is almost certain to succeed. In hay-fever he has found effectual a powder made by grinding in a mortar various grains and grasses and having this fine powder inhaled like snuff.

**Nature of Nitritoid Crisis.**—Pomaret's research has apparently demonstrated that the toxic action known as the nitritoid crisis is not the work of the arsenic.

**Syphilitic Fever.**—Chiray and Coury expatiate on the blunders made in diagnosis and treatment in cases of syphilitic fever, especially in the tertiary stage, when there are symptoms from liver or peritoneum.

**Traumatic Syphilis.**—Trauma may rouse acquired or inherited syphilis, and determine the location of syphilitic lesions. The war brought a number of such cases into prominence and showed that only specific treatment could be counted on for a cure.

**Action of Arsphenamin on Blood-Forming Organs.**—Lévy-Franckel remarks that although arsphenamin has usually a favorable action on hematopoiesis, yet occasionally it seems to be responsible for grave splenomegaly with anemia. Any tendency of this kind calls for immediate suspension of the arsenical treatment.

**Sterilizing Infants' Linen.**—Weill insists that ordinary laundering is not enough. The diapers, caps, etc., should be steam sterilized, in institutions at least. Where this is the rule, skin affections in infants have become far less frequent; in his own service, they have dropped from 6 per cent. to 1 per cent.

**Treatment of Leukoplakia.**—Vignat extols the efficacy of superheated air and carbon dioxid snow for destruction of leukoplakia, and describes devices for their application in the mouth.

**Gonorrheal Arthritis.**—Ramond refers to the pseudophlegmonous form of gonorrheal arthritis, and extols the fine results he has realized with subcutaneous antimeningococcus serotherapy and an antigonococcus vaccine, alone or associated. Any one can apply this treatment and it may ward off otherwise inevitable ankylosis of the joint.

## Presse Médicale, Paris

Dec. 14, 1921, 29, No. 100

- \*Organotherapy in Liver Disease. J. Oddo and P. Borie.—p. 989.  
Paralysis of Associated Movements of Eyes. F. Terrien.—p. 990.

**Organotherapy in Liver Disease.**—Oddo and Borie report the details of nine cases of liver disease, cirrhosis, jaundice during arsphenamin treatment, secondary syphilitic jaundice or catarrhal jaundice, all given treatment by 2 gm. of pulverized liver tissue daily. The digestion hemoclasia test was positive in all, that is, the constant drop in the number of leukocytes after ingestion, fasting, of a glass of milk. After six or seven days of this organotherapy, the hemoclasia test became negative, but on suspension of the liver treatment the reaction became positive anew, and could be banished again by resumption of the organotherapy. They remark that this is not only theoretically interesting but suggests the advantage of giving liver temporarily to remedy a transient insufficiency of the liver after general anesthesia or during arsenical treatment of syphilis. They advise beginning it a few days beforehand, and continuing it a few days afterward. In their experiments, the hemoclastic crisis never failed to disappear under the influence of the liver treatment in the moderate dose of 2 gm. a day, regardless of the severity of the liver disease.

Dec. 17, 1921, 29, No. 101

- \*Pneumogastric Origin of Asthma. C. Lian.—p. 997.  
\*Otitis in Young Infants. Robert-Leroux.—p. 999.  
"Extinction" Skin Sign in Scarlet Fever. P. L. Marie.—p. 1001.

**Asthma; Nature and Treatment.**—Lian presents evidence to the effect that asthma is a manifestation of overexcitability of the pneumogastric system, and that belladonna is the true



treatment for it. Epinephrin has merely symptomatic action; belladonna acts on the cause, and in adequate doses wards off the asthma as effectually as digitalis acts on asystolia. He says that the oculocardiac reflex is an excellent means for estimating the tonus of the pneumogastric, its exaggeration indicating hyperexcitability. He found it much exaggerated in 24 of 31 asthmatics tested, and moderately exaggerated in 5 others, only one giving a negative response. He gives the belladonna extract in 1 cg. pills, three times a day, one before dinner, the others on retiring and in the course of the night. The majority of the patients had no more attacks after the first, second or third night. It improves breathing conditions and promotes sleep, but it does not relieve the cough; this may require something additional. In 2 of his cases the persistence of the asthma under the belladonna convinced him that insufficiency of the kidneys must be responsible, and the nocturnal attacks of dyspnea subsided under a purge, venesection and theobromin with restriction to water.

**Otitis in Young Infants.**—Leroux deplores that so few think of examining the ears when an infant is sick, unless pus appears in the meatus. He insists that latent otitis is the rule in every new-born infant; the ear may be infected from the very first inhalation. Prophylactic measures should be applied to the ears as regularly as to the eyes of every new-born child. The nasal passages should be disinfected at once after birth and during the succeeding days, and the ears should be supervised in every case, and especially when symptoms develop for which the cause is obscure. After birth, the nostrils should be cleansed. He advocates inducing sneezing by insufflating a harmless powder composed of two thirds of boric acid, or the nose can be cleared out by aspiration with a rubber bulb. Then 2 or 3 drops of a 10 per cent. solution of argyrol in glycerin can be instilled in each nostril, for harmless disinfection. For the ear, he prefers a 1:20 solution of phenol in glycerin. The position given to the child's head must not be such as would favor penetration of mucus and milk into the cavum. On the slightest suspicion of mischief, paracentesis should be done; this never does harm, while the lack of it may prove fatal, he declares.

### Revue Médicale de la Suisse Romande, Geneva

October, 1921, 41, No. 10

- Erythema Nodosum. E. Cueissaz.—p. 605. Cont'd.  
Tuberculous Cirrhosis of the Heart. H. Curchod.—p. 648.  
Individual Prophylaxis of Venereal Disease. R. Chable.—p. 662.  
Butter-Flour Mixture in Infant Feeding. L. Exchaquet.—p. 671.  
Tumor in Rhinopharynx of Infant. F. Payot.—p. 674.  
Radium Treatment of Lymphosarcoma in Tonsil. C. Perrier.—p. 675.

### Riforma Medica, Naples

Oct. 22, 1921, 37, No. 43

- Tributes to Cardarelli and Maragliano.—p. 1009.  
\*Exclusion of Pylorus. G. Cavina.—p. 1021.  
Action of Gland Extract. V. Susanna.—p. 1022.  
Present Status of Addison's Disease. G. Molinari.—p. 1024.

**Exclusion of the Pylorus.**—Cavina tied a silver wire around the pylorus after posterior gastro-enterostomy in six dogs. When the animals were killed, from two to six months later, it was found that the wire had worked its way through the tissues until it was almost free in the lumen of the bowel. If it had been given a little longer time, the wire would have been free in the lumen of the bowel, and the pylorus would have been permeable again. In one case the wire had been covered with rubber. Silk passes through the tissues in the same way. There is no danger of perforation, as the tissues heal over the path left by the wire or silk ring. In another series of experiments, he cut out an oval segment in the pyloric region, the longest diameter across the pylorus, cutting down to but not through the mucosa. Then he sutured together the lips of the gap left, making the suture lengthwise. This reduced the lumen materially, even closing it completely over quite a stretch.

Nov. 12, 1921, 37, No. 44-46

\*Transactions of Italian Congresses.—p. 1069.

**Transactions of Surgical, Orthopedic and Internal Medicine Congresses.**—The surgeons' main topics were gastro-intestinal ptosis and tuberculosis of the kidney, and the

addresses and discussions are reproduced in full. The orthopedists' topics were tuberculous spondylitis and deforming osteo-arthritis, but the main interest centered on experiences with the Albee bone implants. Several reported fracture of the implants, saying that this prolonged the immobilization to such an extent that the time element—which is the main advantage in the Albee method—was counterbalanced. Putti related his impressions from his recent visit to the United States. He said that he found considerable hesitancy and skepticism here in regard to the use of the knife in tuberculous spondylitis, and that many of Hibbs' patients had fistulas left. The internists' topics were tuberculosis, purulent pleurisy and epidemic encephalitis.

### Brazil-Medico, Rio de Janeiro

Oct. 8, 1921, 2, No. 13

- Medical Impressions of Brazilian Davos. Alcindo Sodré.—p. 177.  
\*Transmissibility of Leprosy. Belmiro Valverde.—p. 179.  
\*Skull Tumor. P. Palermo.—p. 184.

**Transmissibility of Leprosy.**—Valverde presents arguments against the assumption that leprosy can be transmitted by mosquitoes, and adds that Bahia used to be one of the largest foci of leprosy in Brazil. The governor reported in 1763 that there were 4,000 lepers in his district, and no measures to stamp it out have been taken since, but the disease is extremely rare there now, although mosquitoes abound.

**Skull Tumor.**—Palermo removed a tumor, as large as a hen's egg, from the forehead of a young man six years after a blow at this point. The bone seemed to have become necrotic and this, with transudation from the dura mater, had caused the semisolid tumor which left a cavity in the bone on its removal. The patient returned a month later with a large recurrence of the tumor, and this time Palermo lined the cavity with scraps of cartilage taken from the patient. They healed in place, and there has been no further disturbance during the five months to date. The cavity seems to have filled up with solid bone.

Oct. 15, 1921, 2, No. 14

- Vitamins and Hormones in Deficiency Diseases. G. Riedel.—p. 193.  
\*Myiasis of Mouth and Nose. A. da Matta.—p. 195.  
The Tuberculosis Question. Amaury de Medeiros.—p. 197.

**Nasobuccal Myiasis.**—The man of 28 had been having severe pain in the head for two days and complained of deafness and vertigo, the mouth, nose and throat much inflamed. There was also mental confusion and vague hallucinations. The diagnosis at first had been "false heat stroke," but soon meningitis seemed to be responsible for the symptoms. No benefit was obtained from the various measures applied but the discovery of a maggot on the man's lip and of three openings in the palate cleared up the diagnosis, and under inhalation of chloroform and nasal douches the symptoms all promptly disappeared.

Oct. 22, 1921, 2, No. 15

- \*Instrument to Open Tonsil Abscess. F. Castilho Marcondes.—p. 209.  
\*Mechanical Fluctuations in Leukocyte Count. A. L. Pimenta Bueno.—p. 211.  
Protection of Children Against Tuberculosis. Moncorvo Filho.—p. 212.

**Instrument to Open Abscess in Tonsil.**—The instrument of which Castillo Marcondes gives an illustrated description combines the bistoury with forceps to stretch the opening. The cutting edge does not show until manipulated from the handle, and the abscess can thus be opened and evacuated quickly, and without alarming the patient, so that anesthesia is scarcely required.

**Mechanical Leukocytosis and Leukopenia.**—Pimenta Bueno comments on the variations in the number of leukocytes at various points in the vessels according as the blood is flowing more or less swiftly.

Oct. 29, 1921, 2, No. 16

- \*Hookworm in Southern Brazil. W. G. Smillie.—p. 223.  
\*Endocrine Hemiplegia. Areobaldo Lellis.—p. 229.  
Toxic Meningitis in Child. L. Ferreira Lopes.—p. 231.  
Rickettsia Rocha-Limae. Editorial.—p. 231.

**Hookworm.**—Smillie reviews the results of research on uncinariasis at the Hygiene Institute of S. Paulo, 1918 to 1920. He has the detailed records of 600 cases from twenty-



one different localities, and gives a number of charts such as he has previously published, with Darling, in the monographs of the Rockefeller Institute. Children under 10 and persons over 50 have comparatively few of these parasites, not enough to repay them for taking the treatment. All the fatalities from the use of chenopodium were in children under 9, and these children had had so few of the hookworms and so little disturbance from them that he regretted having given the treatment.

**Endocrine Hemiplegia.**—Lellis reports two cases of lax paralysis in adults, developing suddenly with loss of the heat, pain and tactile sensibility and, in one, of reflex action. There was nothing otherwise to indicate cerebral hemorrhage, and he administered parathyroid treatment. Improvement was pronounced in one or two days and continued to almost complete recovery, only a slight heaviness in the limbs on that side in the male patient. He changed then to ovarian treatment for the young woman, and complete recovery followed at once. She was of an infantile type, with various signs of endocrine insufficiency, and had never menstruated. He theorizes to explain the action in this case.

### Semana Médica, Buenos Aires

Aug. 18, 1921, 28, No. 33

- \*Anastomosis Between Cystic Duct and Stomach. F. Mastro Simone (Naples).—p. 193.  
Address at Centennial of University. Ubaldo Fernández.—p. 201.  
Indications for Cesarean Section. T. A. Chamorro.—p. 206.  
\*Purpura in Pneumococcus Infection. Florencio Bazán.—p. 209.  
Postinfluenzal Laryngeal Abscess. J. Basavilbaso and J. Leyro Diaz.—p. 213.  
Treatment of Preputial Athrepsia. J. Nin Posadas.—p. 215.

Sept. 22, 1921, 28, No. 38

- Inaugural Lecture on Clinical Medicine. P. Escudero.—p. 373.  
Centennial of University. A. Pestalardo.—p. 380.  
Deep Roentgen Ray Treatment in Gynecology. C. Heuser.—p. 388.  
Influenzal Croup. J. Basavilbaso.—p. 391.

**Anastomosis Between Bile Ducts and Stomach.**—Mastro Simone relates that in a series of 1,000 operations on the biliary apparatus, 4 were for anastomosis between the cystic duct and the stomach, and all were completely successful. There has been no disturbance during the three months, two, three and four years since the operation, and the 4 patients seem to be in the best of health. The list includes one woman of 50 whose restlessness and coughing tore out one of the stitches so that bile oozed for a short time. He describes the technic, with illustrations, and also that of the 3 cases of cholecystoduodenostomy, 2 of anastomosis between the common bile duct and the duodenum, 1 of transmesocolic cholecystojejunostomy and 1 of anastomosis between the cystic duct and the colon. The stump of the cystic duct can be invaginated in the stomach through a buttonhole in the prepyloric region. It is drawn into the stomach with a loop of fine catgut the ends of which are brought through the stomach wall and tied outside. The mouth of the duct projects inside the stomach for 1 cm. and it is sutured to the buttonhole with catgut inside and with silk outside. This invagination method, applied at a point high on the posterior aspect of the stomach, where there are few blood vessels, seems to work perfectly. The end-to-side or side-to-side methods are more laborious and there is more danger of leakage.

**Purpura in Pneumococcus Infections.**—Bazán adds 2 new cases to the 7 he has found on record in which purpura was a feature of pneumococcus septicemia in infants. He summarizes the total 9 cases, all fatal.

### Archiv für Gynäkologie, Berlin

Oct. 24, 1921, 115, No. 1

- \*Mechanism of Menstruation Cycle. L. Seitz.—p. 1.  
\*The Menstrual Cycle with Adnexitis. R. Schröder and Frieda Neuen-dorff-Viek.—p. 15.  
\*Pregnancy with Heart Disease. P. Werner and R. Stiglbauer.—p. 41.  
\*Kidney Functioning During Pregnancy. P. Werner.—p. 63.  
\*Toxic Action of Placenta Lipoids. H. E. H. Schönfeld.—p. 80.  
Osteophyte Production in the Pregnant. E. Dreyfuss.—p. 126.  
\*Ulceration in Vagina. R. Schröder and E. A. Kuhlmann.—p. 145.  
Papilloma of Uterine Cervix. R. Meyer.—p. 167.  
One or Two Weeks' Ovum. N. Temesváry (Budapest).—p. 184.  
Embryology of Wolffian Body. R. Meyer.—p. 199.

**The Menstrual Cycle in Relation to Myomas.**—Seitz explains his conception of the menstrual process, and emphasizes that biologic research in this line may throw light on tumor production. Biologic chemical factors evidently determine whether the tumor is to be benign or malignant. A familial tendency to tumor production testifies to biologic influences, as also the influence of castration on a myoma in the uterus.

**Menstruation with Adnexitis.**—This communication reports research on the modification of the menstrual cycle by acute and chronic disease in the adnex and uterus, in a large number of women. The data presented emphasize anew the importance of curing the catarrhal affection of the cervix as the source of the recurring infection of the genital organs above. They show further that rinsing out the uterus is liable to spread the infection from the cervix to the regions above. They demonstrate also the exceptional recuperative powers possessed by the uterus and the ovaries, so that in a few weeks the menstrual cycle usually rights itself, and proceeds normally thereafter, even after the severest disturbances.

**The Heart Disease-Pregnancy Question.**—The tabulated details of 67 cases from Wertheim's clinic confirm the serious nature of the disturbances liable to occur when a woman with a mitral defect becomes pregnant; 2 of the women died, and a third required interruption of the pregnancy. In the 31 cases of mitral insufficiency, 22 viable children were born at term; 6 in the 12 mitral stenosis cases, and 8 in the 19 of mitral plus another valvular defect.

**Kidney Functioning in the Pregnant.**—Werner reports from Wertheim's clinic several years of tests applied to determine the various features of kidney functioning in healthy pregnant women and maternity cases, and in others with glycosuria, albuminuria, chronic nephritis or eclampsia. The severest interference with kidney functioning was found in the cases with the highest albuminuria, chronic nephritis and eclampsia. The elimination of salt was reduced to the minimum, and water was eliminated defectively, and the regularity and persistence of these disturbances were striking. Still more striking was the prompt and pronounced change for the better almost at once after delivery. With heart disease the elimination of salt and water was not quite so defective, but that of nitrogen was more so, and improvement after delivery was slower and less pronounced. The disturbance in kidney functioning with albuminuria, chronic nephritis and eclampsia was shown to be of the same nature in all, differing merely in degree, but persisting without the fluctuations which are noted under normal conditions. The kidneys seem to have lost their elasticity.

**Toxic Placenta Lipoids.**—Schönfeld regards lipoids from the placenta as the cause of eclampsia, and insists that the lipid content of the blood is as important in estimating the gravity of the condition as the urea content in uremia. He urges further research to improve and simplify the determination of lipoids in the blood. Treatment of eclampsia should include purgation, venesection and possibly decapsulation of the kidney, plus sedative treatment. The aim is to get rid of the lipoids from the abnormal internal secretion of the placenta, which are toxic either in themselves or from lack of normal antagonist endocrine substances, or from lack of the normal neutralization by the liver.

**Ulceration in the Vagina.**—Ten different kinds of vaginal ulcers are described, as compiled or observed, with examples of each. The list includes one case of a varicose ulcer.

### Archiv für klinische Chirurgie, Berlin

Nov. 17, 1921, 117, No. 2

- \*Cardiospasm and Esophagus Cancer. H. Kümmell.—p. 193.  
Radical Treatment of Chronic Pleural Empyema. Kirschner.—p. 205.  
Influence on Mastication of Alcohol Anesthesia of Gasserian Ganglion. A. Bleichsteiner.—p. 232.  
Emasculation with Cancer of Penis. S. Hadda.—p. 244.  
Slitting the Sternum. J. Wechsler.—p. 261.  
Diagnosis of Foreign Body Peritonitis. P. Pick.—p. 268.  
Primary Tumors Which Seem to be Metastases. S. Erdheim.—p. 274.  
\*Mouse Tumors After Inoculation with Human Cancer. F. Keysser.—p. 318.  
\*Etiology of Acute Paralysis of Stomach. H. Nieden.—p. 338.  
Surgical Nonvisceral Tuberculosis. Wiesinger.—p. 423.



**Operative Treatment for Cardiospasm and Esophagus Cancer.**—Kümmell regards as great progress the drawing up of the stomach into the chest to serve as an esophagus. He has applied this method in three cases, once for caustic stenosis and once for cancer. The stomach is stretched and drawn up back of the sternum until it can be joined to the stump of the esophagus in the neck. The esophagus below was left unmolested except in the cancer case. With this, the esophagus was drawn down entirely into the abdominal cavity and out through the incision. The stomach was then loosened up all around and the esophagus was then cut away entire. The stomach was then drawn up through the diaphragm and sutured to the esophagus stump in the neck. The whole can be done at one sitting; one surgeon might be making the incision in the neck while the other was operating below.

**Inoculation of Mice with Human Cancer Tissues.**—Twenty photomicrograms show the findings after inoculation of white mice with material from four human cancers. The resulting tumors that developed in about 2 per cent. of the mice Keysser regards as of malignant nature. They took about ten months to develop, but this period grew shorter with succeeding generations.

**Acute Paralysis of the Stomach.**—Nieden states that to date no one has succeeded in reproducing acute paralysis of the stomach in animals, although severing the vagus on both sides below the diaphragm is followed by stretching of the fundus part of the stomach and retarding of the evacuation, testifying to reduction of tonus. Comparison of these and other experimental findings with clinical experiences demonstrates that a nervous predisposition, especially a tendency to paralysis of the intramural nervous system of the stomach, is an indispensable factor. General anesthesia or other toxic influences, operations, trauma, mechanical overexertion, etc., are merely the occasional cause. The mortality in the latest series published keeps as high as ever, as is seen by his tabulation of the cases published since 1911, 50 per cent. of the 36 cases terminating fatally. In 46.2 per cent. of the fatal cases the acute paralysis of the stomach was a postoperative complication. He estimates that there are about 200 cases in all on record. He reviews 84 publications on the subject and his own extensive research on dogs, citing various typical examples. Braun has reported the case of a boy of 12 who developed acute dilatation of the stomach from reflex action as a retention catheter was applied. It slowly subsided after removal of the catheter. This occurred twice, with an interval of several months of normal stomach functioning. Legueu has reported a similar case in which catheterization of the ureter brought on the acute paralysis of the stomach. One important practical conclusion from all this research is the warning of the danger of morphin in postoperative stomach disturbances and in acute paralysis of the stomach. Morphin promotes secretion in the stomach in addition to its other action, and hence it adds to the load the stomach is already carrying. Drugs to stimulate the parasympathetic nervous system would be theoretically indicated if it were not for this same untoward by-effect of some of them, pilocarpin, cholin, etc., that they increase the load of fluids in the stomach. He ascribes the benefit from postural treatment in part to the fact that it relieves the traction on the vagus. The relief is often so prompt and so extreme that nothing but this direct relief of the nerve from traction could explain it.

### Deutsche medizinische Wochenschrift, Berlin

Nov. 10, 1921, 47, No. 45

- Streptoderma; Erysipelas. P. G. Unna.—p. 1349.  
Recent Intracutaneous Diagnostic Methods in Tuberculosis (Own Urine; Own Blood Serum). S. Schoenborn et al.—p. 1351.  
Roentgenotherapy in Pulmonary Tuberculosis. Schröder.—p. 1352.  
Clinical Immunity in Pulmonary Tuberculosis. Zimmermann.—p. 1354.  
Present Status of Myoma Therapy. L. Blumreich.—p. 1355.  
Technic of Wassermann Test of Spinal Fluid. Langer.—p. 1356.  
Blood Picture in Measles plus Whooping Cough. E. Cohn.—p. 1357.  
Precipitin Reaction in Darkfield Illumination for Forensic Purposes; Remarks on Sachs-Georgi Reaction. F. W. Oelze.—p. 1357.  
Salt-Poor Diet and Salt-Free Days for Diabetics. Ziegelroth.—p. 1358.  
Parenteral Casein Therapy. L. Isacson.—p. 1359.  
•Diagnosis of Kidney and Ureter Stones. Béla v. Mezö.—p. 1359.  
Technic of Total Larynx Extirpation. A. Réthi.—p. 1360.

- Silver Arsphenamin Sodium plus Arsphenamin Sodium. Ueberhuber.—p. 1361.  
A Practical Method of Securing Bacteria-Poor Cowpox Vaccine. H. A. Gins.—p. 1362.  
A Case of Sporotrichosis. A. Geiger.—p. 1363.  
Present Status of the Physiology of Sex Determination. T. Péterfi.—p. 1363. Conc'n.  
Hints for Practitioners: Luxations and Sprains. Ledderhose.—p. 1365.

**To Facilitate Detection of Kidney and Ureter Stones.**—Mezö has been pleased with his success in rendering a calculus visible in dubious cases of kidney and ureter stones by injecting 2 or 3 c.c. of a 10 or 20 per cent. solution of collargol. The collargol clings to the surface of the calculus, and it thus becomes more opaque for the roentgen rays. In seven cases in which the symptoms suggested possible lithiasis, but the roentgen findings were negative, he succeeded by this means in obtaining instructive roentgenograms. These stones all proved to be urate stones; one was as large as a hen's egg, and after the collargol application cast a shadow as distinct as a hard oxalate stone. He repeated the injection on alternate days, to a total of three at most; the roentgen examination followed a day or two after the last injection. Any inflammation, even if there is no stone, is favorably influenced by the silver salt. He never injected more than 2 or 3 c.c. of the 20 per cent. solution; this small amount is harmless, he says.

### Medizinische Klinik, Berlin

Nov. 6, 1921, 17, No. 45

- Diagnosis and Treatment of Kidney Disease. G. Dorner.—p. 1347.  
•Spinal Cord Tumors. E. Redlich.—p. 1351. Conc'n.  
•Treatment of Pruritus and Furunculosis. E. Pulay.—p. 1353.  
Retarded Delivery. Nacke.—p. 1356.  
•Diathermy with Chronic Gonorrheal Prostatitis. O. Simmonds.—p. 1357.  
Isolated Fracture of Greater Trochanter. G. Neugebauer.—p. 1358.  
•The Urine Reaction in the Tuberculous. A. Orlianski.—p. 1359.  
Pre-Edema. E. Maliwa.—p. 1361.  
Directions for Common Mixtures for Infant Feeding. K. Blühdorn.—p. 1364.

**Diagnosis and Treatment of Kidney Disease.**—Dorner writes from the Leipzig medical clinic of which Strümpel is director to emphasize the necessity for strict individual treatment of kidney disease as what is indicated in one form is directly injurious in another. Focal nephritis usually heals without requiring special treatment as a rule. With sclerosis of the kidney, the main thing is to sustain the heart: tonics, restriction of fluids, diuretics and sedatives. In acute nephritis, bed rest is imperative; the cases in which the patient keeps up during the early stage have a much graver prognosis. The intake of salt and of water must be as small as possible, and nitrogenous foods debarred. As the lungs evaporate an average of 500 gm. of water and an equal amount passes off through the skin, up to a liter of water can be allowed, fractioned, without harm to the kidneys or vascular system. As soon as the kidneys are secreting better, 200 gm. of sugar, with bread and unsalted butter can be given. As long as the tendency to edema persists, the salt should be kept below 2 or 3 gm. a day. This can be done with what he calls a sugar diet, namely  $\frac{3}{4}$  liter milk,  $\frac{3}{4}$  liter porridge of rice, oatmeal or other cereal, unsalted butter, and cooked fruit, varying within this range as possible. After the edema has subsided and a little salt is allowed, the urine must be examined daily for albumin. With threatening uremia, the protein intake should not be over 30 gm.; this amount is needed to maintain the protein metabolism and any surplus beyond this is liable to form the dangerous waste products. Sugar and carbohydrates can take the place of protein for the time being, as these do not form the dangerous waste products. With pure nephrosis, that is, degeneration processes without inflammation, nitrogen is eliminated fairly well by the kidneys, and hence there is no uremia, and no necessity for restricting the protein intake. No more should be given, however, than can be utilized; this can be determined by estimating the nitrogen output in the urine. With edema he has frequently found what he calls the *Wasserstoss* effectual, that is, drinking 1.5 liters of tea within thirty minutes. The resulting freshet may clear out the kidney vessels and restore urine secretion to practically normal. If this does not succeed the first time, it can be repeated a few days later. With edema of long standing, attempts can be made to mobilize the fluid



with baths at 104 F., cautious sweating procedures and purges. Laxative teas are useful. Great caution is necessary with theobromin and similar drugs as they may irritate the kidneys and induce hematuria. Urea has proved a good diuretic; it can be given dissolved in lemonade up to 60 gm. a day. In one case of severe and rebellious nephrosis he succeeded with this in getting nearly all the water cast off. This is applicable of course only in cases with good excretion of nitrogen. No benefit was apparent in his trials of hypertonic solutions, seeking to influence the kidneys by modifying osmosis.

**Spinal Cord Tumors.**—Summarized, Jan. 28, 1922, p. 317.

**Treatment of Pruritus and Furunculosis.**—Pulay's research on the blood has confirmed that pruritus can be classed in five great groups: The group in which general pruritus is a symptom of a vegetative neurosis, with predominance of the vagotonic element, is easily and promptly curable with atropin. He gives three times a day from 8 to 10 drops of a solution of 0.01 gm. atropin sulphate in 15 gm. distilled water. This is taken the first two or three days of each week, and kept up for weeks, as this treatment is only symptomatic. The second group includes all cases with abnormal uric acid metabolism, and treatment is that for the uric acid diathesis and gout in general. He includes the leukemia and lympho-granulomatosis cases in this group, as the blood contained an abnormal amount of uric acid in his cases. The third group is that of diabetes. The pruritus in six cases was the first and only symptom from the abnormally high sugar content of the blood. Internal salicylic medication proved successful in this form of pruritus. The fourth group is the chronic uremia cases. Two patients with pruritus of long standing seemed to be otherwise entirely healthy, but analysis of the blood showed high content in nonprotein nitrogen, uric acid and cholesterin, and provocative tests of kidney functioning revealed tube casts. Venesection with diet as for nephritis, and diuretics, promptly cured the pruritus. Pruritus may thus give the clue to unsuspected nephritis. Abnormally high uric acid, cholesterin and sugar content of the blood may likewise induce pruritus, with high blood pressure but apparently normal urine secretion. He describes three cases of this kind, classifying them apart as his fifth group. In one in this group the blood showed a high calcium content.

**Furunculosis.**—Pulay's experience has been that pruritus precedes furunculosis; the scratching opens the portal for the infectious process. Before a cataplasm is applied, the surrounding sound tissue should be protected with plaster or a salve dressing, applying the cataplasm outside of this. All irritation of the skin in furunculosis should be scrupulously avoided; even heliotherapy is contraindicated. He protests against merely incising a furuncle to release pus unless compelled by high fever and changes in the pulse. The incision does not remove the cause and merely opens up new routes for infection. Protein therapy and vaccine therapy often give excellent results during the primary septic process in furunculosis. It is so little specific that the autogenous form of vaccine therapy is scarcely called for, and baths in any form are contraindicated with an existing furuncle. Treatment should include isolation of the furuncle and removal of its core, and general treatment according to the type of pruritus. It is not a surgical affection, he reiterates; it requires conservative measures, and we cannot warn too often against a hasty incision.

**Diathermy in Treatment of Chronic Gonorrheal Prostatitis.**—Simmonds reports eleven cases which all sustain his statements in 1912 that diathermy is capable of curing chronic gonorrheal prostatitis. His experience since has convinced him that it deserves the preference over all other measures.

**The Auto-Urine Reaction in the Tuberculous.**—Orliansky's verdict is against the reliability of the Wildbolz own urine test.

### Münchener medizinische Wochenschrift, Munich

Nov. 4, 1921, 68, No. 44

Muscular Involvement in Rachitis. A. Müller.—p. 1409.

Method of Choice in Exclusion of Pylorus. F. J. Kaiser.—p. 1413.

Postural After-Treatment in Laparotomy. Goetze.—p. 1414.

\*Effect of Roentgen Rays on Blood Coagulation. R. Feissly.—p. 1418.

Type of Syphilis Resistant to Arsphenamin. Siemens.—p. 1419.

Behavior of Lipoids in Flocculation Tests. P. Niederhoff.—p. 1419.

Determination of the Apex Beat. K. Grassmann.—p. 1420.

Reflexes of the Abdominal Walls. L. Stern-Piper.—p. 1421.

Benefit from Roentgen Irradiation in Generalized Psoriasis. Görl and Voigt.—p. 1423.

Foreign Body Diverticulitis (Meckel's). A. Henriksen.—p. 1423.

Movement of Population in German Empire, 1851-1920. Burgdörfer.—p. 1425.

The Etiology of Acne Vulgaris. F. Seibold.—p. 1427.

Instrument to Aid in Intravenous Injections. Friedlieb.—p. 1427.

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Nature and Origin of Diastatic Ferments. Biedermann.—p. 1428.

The Painless Birth Question. Grassl.—p. 1428.

Present Status of Treatment of Goiter. A. Krecke.—p. 1429.

**Accelerating Effect of Roentgen Rays on Blood Coagulation.**—Feissly reports that from his experiments with citrated blood and on the exposed jugular vein of the horse it is evident that roentgen irradiation causes a more rapid coagulation of the blood. This result will serve to explain the accelerated coagulation following irradiation of the spleen, the liver and the lungs. It is based, in his opinion, on the destruction of leukocytes and blood platelets, or possibly on the release of a blood-clotting cytozym. The therapeutic irradiation of the spleen, in case of hemorrhage, might possibly be referred to as a form of autocytozym therapy.

### Zeitschrift für klinische Medizin, Berlin

Nov. 15, 1921, 92, No. 1-3

\*Catalase Index of Erythrocytes. R. Nissen.—p. 1.

\*Paroxysmal Hemoglobinuria. J. Burmeister.—p. 19.

\*Carbon Monoxid Poisoning. H. Günther.—p. 41.

\*Spirochetes in Stomach Content. A. Luger and H. Neuburger.—p. 54.

\*Duration of Fatal Diabetes. K. A. Heiberg.—p. 76.

Intestinal Findings in Dysentery. A. Lewin.—p. 78.

War Enteritis. E. Ötvös.—p. 94.

\*Mercuric Chlorid Nephrosis. H. Gorke and G. Töppich.—p. 113.

\*Hypertonia and Sugar Content of the Blood. F. Härle.—p. 124.

\*Treatment of Hemoglobinuria from Chilling. J. Burmeister.—p. 134.

\*Septic Jaundice. K. Bingold.—p. 140.

Lipolytic Ferment in Lymphocytes. A. Resch.—p. 160.

Morbus Maculosus Werlhofii. A. Foerster.—p. 170.

Influences Affecting Metabolism Tests. W. Arnoldi.—p. 187.

Residual Nitrogen in Blood in Influenza. E. A. Cohn.—p. 201.

Influence of Thirst on Nitrogen and Chlorin Metabolism. K. Frankenthal.—p. 208.

Bacteria in Duodenal Juice. B. Hoefert.—p. 221.

Pneumopericardium. A. Mayer.—p. 236.

Leukocyte Picture Under Influence of Drugs. H. Wollenberg.—p. 249.

Ferments in Duodenal Juice. K. Isaac-Krieger.—p. 259.

Flapping of Thorax Wall. G. Holler.—p. 269.

**The Catalase of the Erythrocytes.**—Nissen discusses the diagnostic import in human and experimental blood diseases of the catalase index of the red corpuscles.

**Paroxysmal Hemoglobinuria and Isolation of Substance Causing the Wassermann Reaction.**—Burmeister states that signs of syphilis were evident in 30 per cent. of the 207 cases of paroxysmal hemoglobinuria he has compiled, and the Wassermann reaction was positive in 95 per cent. of the 76 in which this test was applied, and in 2 of 3 cases personally observed. His experiments demonstrated that the hemoglobinuria from chilling is able to induce a positive response to the Wassermann test in the absence of syphilis. He succeeded in isolating from the blood in these hemoglobinuria cases the amboceptor that induces the positive response in the Wassermann test. When added to normal serum, the Wassermann test then applied elicited a positive response. This "chilling-amboceptor" seems to combine with the lipoids in a warm environment, but it does not combine with the erythrocytes (and thus induce hemoglobinuria) except at a chilling temperature. He states that his research preceded Wassermann's recent announcement that he had separated the "Wassermann aggregate" into a "Wassermann substance" and a lipid. The two form a reversible combination. [The "Wassermann substance" Wassermann explains, displays all the properties of an amboceptor and is thus an antibody. This discovery of the amboceptor inducing the Wassermann reaction is the first time that an antibody for lipoids has been isolated. Wassermann ascribes the action of mercury to its effect on the lipid metabolism of the cells, more than to its action on the spirochetes. He has recently announced further what he calls the *bestätigungsreaktion*, or confirmatory reaction, in syphilis, but has not divulged the technic. He says that he has applied for a patent on it. His communications were



published in the *Berliner klinische Wochenschrift* 58:195 and 331, 1921.]

**Carbon Monoxid Poisoning.**—Günther found evidence of polyneuritis from illuminating gas poisoning in about 1 per cent. of the 215 cases at the Leipzig medical clinic in the last thirty years. Hemorrhagic polymyositis was noted in three cases, accompanied by elimination of a peculiar pigment in the urine in the one fatal case.

**Spirochetes in Stomach Content.**—Extremely rare in normal conditions, spirochetes were found constantly and in large numbers in the five cases of gastric cancer examined.

**Duration of Diabetes.**—Heiberg comments on the deaths from diabetes in Denmark in the last ten years, 820 men and 683 women. Under the age of 30, the course was less than nine months in 25 per cent.; less than fifteen months in 50 per cent., and less than two and a half years in 75 per cent. After the age of 50, the course averaged nine years in men and seven years and three months in women.

**Mercuric Chlorid Nephrosis.**—Gorke and Töppich describe the findings and course in a young man who swallowed 7 gm. of dissolved mercuric chlorid and survived for forty-five days. He died while lumbar puncture was being done to relieve the high intracranial pressure. The pressure at first was over 600 mm. water and only 4 or 5 c.c. of spinal fluid were drawn. The pressure then dropped slowly to 150 mm. and the patient suddenly died. The cerebellum had been sucked into the foramen magnum by the lowering of the pressure.

**High Blood Pressure and the Sugar Content.**—Härle was unable to discover any regular connection between the height of the blood pressure and the sugar level in the blood.

**Treatment of Paroxysmal Hemoglobinuria.**—Burmeister confirms the announcements of others that certain salts by the vein or mouth modify the physical conditions of the blood so that the destructive action of chilling on the erythrocytes is temporarily suspended. Cholesterin seems to act in the same way, in this respect, as hypertonic saline solutions.

**Septic Jaundice.**—Bingold describes a few cases of sepsis in which jaundice formed part of the clinical picture. The symptoms were about the same whether aerobes or anaerobes were involved. The Fraenkel gas bacillus has an especially intense destructive action on the blood. Pronounced jaundice with hematinemia is a serious condition, but remarkably prompt and complete recuperation is possible when the sepsis is conquered.

### Zeitschrift für Urologie, Leipzig

1921, 15, No. 9

Functional Tests of the Kidneys. Pflaumer et al.—p. 351.

Malformations in Male Genitals with Aplasia of Kidney. Brack.—p. 389.

1921, 15, No. 10

Roentgen Examination of Bladder from the Side. Sgalitzer and Hryntschak.—p. 399.

Duplication of Ureters. E. Brattström.—p. 407.

\*Prognosis of Carcinoma of Penis. W. Peters.—p. 410.

Degenerative Nephrosis Cause of Renal Neuralgia. Heymann.—p. 415.

Sources of Error in Catheterization of Ureters. H. Böckmühl.—p. 422.

Septum in Bladder. G. Praetorius.—p. 427.

**Prognosis of Carcinoma of the Penis.**—Peters reports that 14 have been free from recurrence of 25 patients operated on from two to thirteen years ago, including 4 that died from old age, pneumonia or a stomach affection from two to nine years after the operation, including 2 free from metastasis for two years. This brings the cured to 68 per cent; 3 died from postoperative pulmonary embolism or edema or pyelonephritis, and 3 developed fatal metastasis from one to eight years afterward. Küttner has reported cures in 73 per cent. of his 22 cases in which no attempt was made to remove the connected glands, but Peters' experience warns that they should be extirpated likewise. There was metastasis in these glands in 50 per cent. of the 8 cases in which the glands were left.

### Zentralblatt für Chirurgie, Leipzig

Oct. 15, 1921, 48, No. 41

Ethyl Chlorid, a Valuable Narcotic Requiring Caution in Using. A. Ley.—p. 1502.

\*Continent Artificial Anus. F. J. Kaiser.—p. 1505.

"Substitute for Sphincter in Artificial Anus." Kurtzahn.—p. 1508.

A Modified Type of Tracheal Cannula. G. Schmidt.—p. 1510.

Laced Flannel Bandage for Laparotomy Dressing. E. Hempel.—p. 1511.

**New Factors Toward the Solution of the Problem of a Continent Artificial Anus.**—Kaiser gives a preliminary report of his method, which he terms "anus praeternaturalis femoralis." It is a modification of the Madelung method for establishing an artificial anus, and consists in passing the distal end of the sigmoid loop through the left sartorius muscle which grips and releases the artificial opening as the sartorius muscle is contracted or relaxed. The details of the technic are not given here.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 15, 1921, 2, No. 16

\*Symptomless Abdominal Cancers. J. W. M. Indemans.—p. 1957.

Mutation of the Colon Bacillus. J. J. van Loghem.—p. 1966.

\*Exaggerated Reflex Excitability. J. Pinkhof.—p. 1971.

\*Late Recovery from Catatonia. F. J. Haverkate.—p. 1974.

Transient Disturbance in Vision Under Arsenical. Schoute.—p. 1978.

**Metastasis of Unrecognized Abdominal Cancer.**—In the three cases reported by Indemans the primary cancer had given no signs of its presence until it had induced a metastatic tumor at a distance. One woman of 63 had a cancer in the navel, four years after removal of a mammary cystadenoma. She had long worn a pad for a small umbilical hernia. The carcinoma in the navel region developed very slowly, without causing much distress, and in the third year a cancer was found in the rectum. There was no local recurrence of the mammary cancer. He remarks that he knows of no instance on record of a primary umbilical cancer, so that he accepts the navel cancer as a metastasis of the unsuspected rectal cancer. In the second case, the man of 49 complained of pain in and swelling of the glands in the left supraclavicular fossa as the first and for about four months the only symptom of a cancer involving the cardia and adjacent esophagus. In another case a tumor in the pouch of Douglas proved to be a metastasis from a carcinoma in the sigmoid flexure which had never given any signs of its presence before in the woman of 62. He cites from the literature some cases of metastasis in the ovaries in which the primary cancer in the stomach was not discovered until necropsy. In conclusion he remarks that in the 3 personal cases described, the patients seemed to be in perfect health when first seen, notwithstanding that their malignant disease had reached the metastasis stage. In the gastric cancer case, the blood gave a pronounced antitrypsin reaction, which he considers very instructive.

**Enhanced Reflex Excitability.**—Pinkhof describes research on the physiology of Kohnstamm's after-contraction.

**Cure of Catatonia.**—Haverkate compares various statistics as to recovery from catatonia after a prolonged course, and relates the details of a case which began at the age of 23. The young man presented a typical case of catatonia for eight years, and then seemed to throw it off completely. After his eight years of institutional existence he regained full earning capacity, and has been promoted in his business during the two years since his recovery.

### Ugeskrift for Læger, Copenhagen

Nov. 17, 1921, 83, No. 46

\*Vasectomy in a Dog. K. Sand.—p. 1509.

\*Railroad Nystagmus. T. B. Wernøe.—p. 1516.

Diphtheric Heart Lesions. C. Schwensen.—p. 1522.

**Vasectomy in a Dog.**—Sand experimented on a large hunting dog, apparently sound except for his advanced age, 12½ years. The illustrations show the senile appearance of the dog, which was scarcely able to crawl around, and the rejuvenation that followed bilateral resection of 3 or 4 cm. of the epididymis close to the testicle. Within five months the dog seemed to have thrown off three years from its age, and could run along with the bicycle for a 15 kilometer spin.

**Railroad Nystagmus.**—Wernøe states that what Bárány calls railroad nystagmus does not occur unless the visual apparatus is in good condition. Hence he has found this reflex useful in estimating the prognosis with amaurosis, etc., of different kinds, and as a means of differentiating the vestibular type of nystagmus.



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## VALUE OF PNEUMOPERITONEAL ROENTGENOGRAPHY IN OBSTETRICS AND GYNECOLOGY

BASED ON AN EXPERIENCE OF MORE THAN  
THREE HUNDRED CASES \*

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Roentgenographic examination of the female pelvic organs after gas inflation has been rather extensively employed during the last eighteen months in the clinic of obstetrics and gynecology of the University of Michigan Hospital. Previous reports on this comparatively new diagnostic method purposely dwelt on the technic of the procedure as it has been developed in this clinic. It was felt that first of all it must be determined whether transuterine and transabdominal gas inflation under proper aseptic technic is attended by dangers serious enough or so unavoidable as to preclude gas inflation as a justifiable or practical diagnostic method in obstetrics and gynecology.

As case after case was added to the list under the technic employed without the slightest peritoneal irritation resulting, it was felt that the safety of the method had been established beyond the shadow of a doubt. Naturally, the next question to be answered, as clinical material has accumulated, is the value of gas inflation as a diagnostic procedure. In what proportion of cases is it of real value in establishing or confirming the preoperative diagnosis? In short, is this new procedure a fad and therefore transitory, or is it a valuable aid to pelvic diagnosis, not to be depended on alone but as a help in making the diagnosis of pelvic conditions more accurate, so that the physician is in a better position in a given case to decide on the line of treatment to be employed? It is to answer these and other interesting questions connected with gas inflation, that the present attempt has been made to draw conclusions from certain groups of the 325 patients in whom inflation was performed for various reasons from July 1, 1920, to Dec. 1, 1921.

Obviously, since the only way of determining the correctness of diagnoses arrived at by bimanual examination and the roentgen ray is by direct palpation through an abdominal incision, only those patients operated on after gas inflation can be considered. Of the 325 patients subjected to pneumoperitoneal roentgen-ray examination, 152 were operated on through the abdomen. In fourteen cases, for one reason or another, excessive or uncontrollable moving of the patients, too

little gas in adipose patients, etc., the roentgenogram from a technical standpoint was so poor as to be worthless. There remain 138 cases in which the clinical and roentgen-ray diagnoses were carefully made and recorded prior to operation.

Before judging the value of the pneumoperitoneal roentgenogram as an aid to preoperative pelvic diagnosis, it will be well to state just how these roentgenographic diagnoses were made, and to set forth the criteria adopted in arriving at decisions as to whether the diagnoses were correct or otherwise. As has been explained at some length in previous communications, the rule of the clinic has been to use the transuterine gas inflation route whenever possible. It was felt that, aside from the question of sterility, it was of the greatest practical interest in every pelvic case to be able to state definitely whether the fallopian tubes were or were not permeable. However, no chances are taken to determine this fact. Whenever there is a history of acute pelvic infection, or in the presence of a bloody or purulent uterine discharge, the transuterine route is decided against and the gas is injected by the transabdominal route.

To show the conservatism of the clinic in this regard, out of the 138 operative cases after gas inflation, the gas was introduced seventy-three times through the abdomen as an elective procedure. In forty-three cases the gas was passed through the uterus and tubes in quantities sufficient for roentgen-ray purposes. In twenty-two cases the transuterine route failed, and the gas was injected through the abdominal wall.

The routine of gas inflation is as follows: A careful history is taken of each patient. There have been no exceptions to this rule, since the determination of the route for gas inflation depends largely on the history. Whenever there is a history of acute or subacute pelvic inflammation, since it is the rule not to subject such patients to transuterine gas inflation, it is carefully considered whether such a patient is suitable for even transabdominal gas inflation. If the pelvic inflammation is acute, it is deemed a case unsuited for any form of inflation. If it is one of subacute pelvic inflammation, if there is no rise of temperature or pulse rate after a bimanual examination, transabdominal gas inflation is resorted to in the large majority of cases.

While it is not believed that there is any particular danger of forcing the contents of the fallopian tubes into the pelvic cavity by gas inflation under moderate pressure, to be on the safe side, as stated before, transuterine inflation is ruled out in the presence of profuse purulent uterine discharges, and when there is a hemorrhagic discharge from the external os.

No patients with serious circulatory changes have been inflated. Even when moderate amounts of gas

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are introduced into the abdominal cavity, it can readily be seen that the sudden rearrangement of the abdominal organs resulting from the gas inflation, together with upward pressure on the diaphragm, might well embarrass a diseased and badly acting heart, and possibly give rise to alarming symptoms, if not leading to fatal results. For the same reason, great care has been taken not to use gas inflation in the presence of large uterine or ovarian tumors. Not only might the presence of the gas produce the symptoms just referred to, but in reality there is very little to be learned from the pneumoperitoneal roentgenogram under such conditions.

The greatest care is used in the presence of suspected bowel adhesions to the abdominal wall. Either a site reasonably certain to be free from such adhesions is selected for the abdominal puncture, or the case is deemed unsuitable for transabdominal gas inflation. In short, every case is critically gone over pro and con prior to gas inflation; and, if there is any doubt, the procedure is decided against and the patient is operated on without the inflation.

At the beginning of our work with the pneumoperitoneal roentgenogram, Dr. Van Zwaluwenburg and I agreed that we would work out our diagnoses independently. This arrangement was entered into deliberately, since neither the clinician nor the roentgenologist desired to be influenced by the other's opinion so far as diagnosis was concerned. This was hardly fair to either, but was particularly unfair to the roentgenologist, who, without the specialist's knowledge of pathologic conditions of the pelvis, attempted to interpret what he saw on the roentgen-ray film. As will be shown later in reviewing the roentgenographic diagnoses, it was remarkable in what proportion of cases, as shown by subsequent operation, correct diagnoses were made by Dr. Van Zwaluwenburg, working in practically a new field and with no knowledge of the clinical histories of the cases.

The details of vagino-abdominal and recto-abdominal examinations without anesthesia were carefully recorded and the tentative diagnosis made for each of the 138 patients subsequently operated on. An attempt was made to have these preoperative diagnoses very accurate. For instance, the size, position and movability of the uterus were recorded. The same was done with the appendages. If for any reason it was impossible to palpate either ovary or tube, it was so stated, and the same with adhesions. Such indefinite terms as "pelvic inflammatory," "tubal masses" and "thickened broad ligament" were discarded in favor of accurate findings and diagnoses.

The roentgen-ray report was sent to the departmental office and studied in connection with the recorded physical findings in a given case. It was then decided whether or not the case called for operation. If the case was operative, the patient was always carefully examined under anesthesia and these findings were recorded. This is only fair when accurate determination of the pelvic contents is being attempted, since in so many instances in a certain class of patients, rigid abdominal walls prevent satisfactory pelvic examination. However, it is well to bear in mind that the roentgen-ray report was not allowed to influence the examination under anesthesia, so far as the findings were concerned. If an ovary or tube could not be felt, or if it was determined that no adhesions existed, it was so recorded.

In order to compare the clinical with the roentgen-ray diagnoses, the most difficult class of cases from the

diagnostic standpoint has been selected for comparative study. Of the 138 operative cases there were fifty-four of salpingitis with adhesions, and these have been carefully analyzed. It must be borne in mind that in stating that diagnosis is difficult in this particular disease of the pelvis, the word is not used in its ordinary sense. Clinically it is not at all difficult to determine whether or not a patient has salpingitis or probably has the condition. Especially is this true in severe types of the disease in which the uterus is immovable or its movability is impaired, when there is distinct inflammatory thickening at one or the other side of the uterus. Minor degrees of tubal enlargement, with or without adhesions, may or may not be felt by the examining finger. From experience with hundreds of cases, verified by subsequent laparotomy, the gynecologist may judge that the tube and possibly the ovary is affected; but in many cases the examining finger is absolutely unable to outline these organs, which are backward in the pelvis and to one side and covered with plastic lymph. In quite a percentage of cases such a condition exists on one side, while the tube is enlarged and adherent and easily palpated on the other.

So difficult has been the differentiation of the appendages or portions of the appendages in certain types of inflammatory disease of the pelvis that in many instances it is not attempted at all, but accurate diagnosis is reserved until the pelvic contents can be palpated through the abdominal incision. Now it cannot be denied that such a course is one of intellectual cowardice. It is dodging the question of preoperative diagnosis because of attendant difficulties which the gynecologist should strive to overcome, if possible.

The clinical diagnosis in relation to the fifty-four cases of tubal disease relates to this more accurate preoperative diagnosis, and should be considered in this connection; otherwise it would be inexcusable for the specialist to fail to make a diagnosis in such a large percentage of the cases. In other words, failure does not mean that the clinician did not know he was dealing with pelvic inflammation, but that he failed in part to state definitely what organs were affected by the inflammatory process.

In fifty-four cases of salpingitis with or without adhesions, in the sense defined above, the clinical diagnosis was correct thirty-three times, or 61 per cent. of the cases. In seventeen cases it was partially correct, and in four cases it was incorrect in that no inflammatory tubal disease was found prior to the operation. Turning to the roentgen-ray diagnostic side of the question, it was found that, in the type of pelvic disease under consideration, tubal disease was correctly diagnosed twenty-four times, or in 44 per cent. of the cases. In twenty-one cases out of the fifty-four patients with salpingitis, or 39 per cent., the roentgen-ray diagnosis was partially correct, while in nine cases, or 17 per cent., it was incorrect.

It seems to me that, all things taken into consideration, this is a very creditable showing for this new aid to pelvic diagnosis, and holds out great hope for greater accuracy in the future, since these statistics were made up from all operative cases of salpingitis with adhesions when the roentgenologist had to feel his way in making a diagnosis. Again, great improvement in diagnosis may be expected from now on, since the future plan of the two departments will be to furnish all factors in the cases before the final diagnoses are made prior to operation. For example, the clinician provided with the history of the case plus the bimanual findings goes over the film with his roentgen-ray colleague and aids



in the interpretation. In one instance he will point out that there is no history of inflammatory pelvic disease, and that the shadow seen low down in the pelvis is probably a cystic ovary and not salpingitis with adhesions; again, that the uterus which is enlarged and backward probably is not due to pregnancy since no menstrual period has been missed.

It is well to call attention to the fact that even as the roentgen-ray diagnosis has improved and will still further improve with added experience, the clinical diagnosis, even under the rigid conditions laid down for correctness in diagnosis, has improved nearly 10 per cent. in the last twenty cases under analysis. This demonstrates how valuable is the pneumoperitoneal roentgenogram in that a study of the films in conjunction with careful bimanual examinations leads to better interpretation of the next case by the examining finger.

It may be urged that such refinements of diagnosis are hardly necessary, since an abdominal incision will clear up all doubts. A little consideration will show this reasoning faulty, and especially unfair to the patient. An exploratory laparotomy may be comparatively free from danger, but not entirely so. The physician is in duty bound to save his patient from unnecessary pain, anxiety and expense, and thus should welcome any additional aid to diagnosis.

The well known fact that, in a certain percentage of cases, the ordinary methods of pelvic examination fail to reveal certain types of pelvic disease causes the examiner to hesitate and take the easiest course, exploratory laparotomy, in the presence of pain or other lower abdominal symptoms—this, even when he can find nothing and really feels there is nothing pathologic in the pelvis. If his negative pelvic findings are supported by a pneumoperitoneal roentgenogram showing normal pelvic contents, he will refrain from a useless exploratory operation and seek another explanation for the existing symptoms.

At least, this is the trend of our practice in the clinic since the advent of the pelvic roentgenogram. In fact, it has been found that this new method of diagnosis has been of the utmost service in doubtful cases, when something is felt by bimanual examination but not enough to make one positive as to diagnosis; when nothing, or practically nothing, is palpated, but the roentgenogram discloses a distinctly pathologic condition; in short, in those cases in which one would gladly palpate through an abdominal incision in order to arrive at a correct diagnosis. The pelvic roentgenogram plus the careful bimanual examination is the next best thing to this direct palpation, and in time, with added experience, may be almost as effective.

A case illustrative of what is meant is being investigated as this paper is written. A woman, aged 21, healthy, in fact an athlete, has noticed for the last year something wrong low down in the right side. She has never had a vaginal discharge, or abdominal pain and fever. Examination reveals an unruptured hymen, no signs of infection, and a normal sized uterus in good position, but of somewhat limited mobility. The left ovary is of normal size, slightly movable, the tube not palpable. In the region of the right tube and ovary and behind in the culdesac to the right of the median line is an irregular, adherent mass not particularly sensitive and not well definable on account of the rigidity of the abdominal walls.

Formerly this patient would have been informed that she had a pelvic mass, that she should be operated on, and that the exact diagnosis would be made after the abdominal incision had been made, in spite of the fact

that this particular patient, because of the probability of marriage in the near future, has every reason to demand that the condition of her pelvic organs and the extent of the operation be told her prior to the abdominal incision.

In this particular case the pneumoperitoneal roentgenogram revealed the irregular mass on the right, adherent to intestinal coils, presumably the tube and ovary, since these organs gave no shadow. The left ovary and tube were enlarged and adherent. The roentgen-ray diagnosis was bilateral salpingitis, more marked on the right side.

The patient has been informed that she has trouble with both appendages, more marked on the right; that she may and probably will have to sacrifice the right tube and ovary, but that part of the left probably can be saved. While all the facts in this particular case have not been ascertained by clinical and roentgen-ray diagnostic methods, for there is no history of pelvic infection further borne out by the unruptured hymen, the condition of the appendages is well enough known to permit an intelligent discussion of the case with the patient prior to operation.

The pneumoperitoneal roentgenogram has been extremely valuable as an aid to diagnosis in early cases of pregnancy—from the sixth to the ninth or tenth week. In these early weeks of pregnancy, the expert examiner may detect enlargement and softening of the uterus, but he is very loath to say more than that he suspects pregnancy or that the condition is very suspicious of pregnancy. Especially is this true if skipping of the period is admitted. His suspicions are made quite positive if the pneumoperitoneal roentgenogram reveals an enlarged uterus and isthmus. In eight cases of pregnancy from the sixth to the tenth week, the condition was positively diagnosed by the roentgenogram without knowledge of the history or the vaginal examination findings. In each instance the diagnosis was confirmed by the subsequent history.

The roentgen-ray picture of early pregnancy shows almost uniformly an enlargement of the isthmus, the cross-section of the uterus at a point corresponding with the lower uterine segment. Not only is the isthmus enlarged in the long axis of the uterus, but it is shown to stretch out on the sides toward the broad ligaments. In pregnancy advanced more than ten weeks, this thickening of the isthmus is very marked, so that beyond the tenth week pregnancy can invariably be recognized by the pneumoperitoneal film at a time long before the fetal bones can be demonstrated. This diagnostic sign is especially valuable in cases of fibroids complicated by pregnancy. Again, the absence of the sign is valuable in demonstrating the nonpregnant uterus, when menstruation ceases at the menopause, giving rise to great mental disturbance in patients who have been exposed to and fear pregnancy.

Time does not permit a description of other pelvic conditions, such as fibroids with and without diseased appendages, small pelvic growths, unruptured ectopic pregnancies, etc., in which the pneumoperitoneal roentgenogram has proved invaluable as an aid to diagnosis. It is realized that this work is just beginning, and that the interpretation of such films will improve as they are numbered by the thousands instead of by the hundreds. Even at the present stage of the study, the pneumoperitoneal roentgenogram has become an invaluable aid in the clinic, and would be dispensed with only with the greatest reluctance, aside from the indispensable aid of pneumoperitoneum itself in deter-



mining the patency or nonpatency of the fallopian tubes in cases of suspected or actual sterility. However, this is another subject and will be left for subsequent discussion.

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## TUBERCULOUS EMPYEMA

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COLORADO SPRINGS

It is generally conceded that the tubercle bacillus can produce a purulent effusion in the pleural cavity—a purely tuberculous empyema—and it may be assumed, for practical purposes, that there is always an underlying lung tuberculosis. These two considerations being granted, the contraindication for open drainage in the treatment of these cases is obvious. In many instances, other organisms are associated with the tubercle bacillus in the pleural fluid: mixed infections; but the underlying pleural and pulmonary tuberculosis still constitute a strong contraindication to thoracotomy.

The resection of one or more ribs to facilitate drainage of the thoracic cavity was brought into general use by König in 1872. The mortality of empyema was at once materially lowered by rib resection, and it is not surprising that this operation was believed to be indicated whenever pus was found in the pleural cavity. In the course of the next twenty years, objections began to appear from many observers to the use of open drainage in empyema occurring in patients with pulmonary tuberculosis. It was found that the pleural cavity failed to close; that a sinus persisted, and that the tuberculosis in the lungs frequently became more active and progressed rapidly to a fatal termination. Even if this did not occur, chronic suppuration almost invariably continued indefinitely, extensive thoracoplastic operations being required in attempts to obliterate the rigid and infected pleural cavity. Fowler<sup>1</sup> recorded the growing dissatisfaction with this situation, stating that "Franzel, Fielding and Senator entirely discounted thoracotomy and rib resection in tuberculous cases, preferring repeated puncture." Since then, the indications for open drainage of tuberculous empyemas have been gradually but markedly restricted.

The bacteriology of thoracic empyema came in for early study both by cultures and by stained smears; but as the tubercle bacillus did not grow with ordinary culture methods and was often hard to demonstrate in the smear, it was frequently overlooked. In Lord's<sup>2</sup> series of purulent effusions, 18 per cent. were noted as sterile; and although it was recognized that many of these cases were probably tuberculous, even the approximate number was not indicated. Calmette states that tubercle bacilli are not numerous in tuberculous empyema, while Letulle notes that they may be present in inconceivable numbers in this condition. The general expression in the literature indicates that while the tubercle bacillus is often difficult to find in the serous effusions, they are more numerous and more easy to demonstrate in the purulent cases. This coincides with our experience. Repeated search should show them in most instances. The literature on the pathology of tuberculous purulent effusions is very limited. Peron<sup>3</sup> describes empyema tuberculosa, and

Calmette,<sup>4</sup> in his recent work, writes of cold abscess of the pleura, associating it with destructive tuberculous lesions elsewhere in the body. Letulle,<sup>5</sup> in a very clear account of tuberculous empyema, describes the character of the pus and of the deep infiltrating caseous lesions found with this exudate, and ascribes to it a bad prognosis. The determining factor in producing a purulent rather than a serous exudate, containing only tubercle bacilli, is probably to be found in the amount of infectious material suddenly poured into the pleura, as would occur with the rupture of a caseous focus. In other words, the question appears to be one of dosage.

Assuming a purulent effusion of the pleura, not definitely metapneumonic or postinfluenzal, the greatest care should be used to exclude tuberculosis before instituting open drainage, since cases of empyema showing no tubercle bacilli almost universally heal promptly, while those having tubercle bacilli rarely do so. Careful and repeated search for tubercle bacilli in the pleural fluid and also in the sputum should be made. The lungs should be carefully examined and the past and present history considered with the possibility of pulmonary tuberculosis. So-called sterile pus will, of course, be considered a strong indication of the tuberculous nature of the effusion; but the presence of pus organisms does not necessarily argue against a tuberculous basis. The demand for immediate open drainage in empyema is rarely so great as to preclude sufficient time for such investigation. Even in the most careful hands, occasional mistakes are made. The sputum is negative for tubercle bacilli; the aspirated pus is negative for tubercle bacilli; the pleura is drained, but fails to close. Tubercle bacilli later are found in the discharge.

Cases which are purely tuberculous may develop in various ways. They may begin insidiously, coming to light in the course of routine examinations. As Babcock<sup>6</sup> stated some years ago, "A consumptive may be none the worse for carrying about a pint or more of innocuous pus in his pleural cavity." An effusion which at first is found to be serous may be found after one or more tapplings to have become seropurulent and later purulent. Such an event may develop in the course of artificial pneumothorax treatment of pulmonary tuberculosis.

The introduction of artificial pneumothorax has added materially to our knowledge and experience with tuberculous empyema. Serous effusions eventually occur during the course of artificial collapse in the majority of instances, and approximately 5 per cent. developed purulent effusions. Many of these are the direct result of lung rupture, and not infrequently are converted into the spontaneous type of pyopneumothorax.

Artificial pneumothorax has taught us that, first, a diseased lung can be collapsed with benefit and should be reexpanded with great caution, and, secondly, the development of a turbid or even purulent effusion in the course of a pneumothorax treatment is not necessarily serious, and this condition can best be met by aspiration and replacement by air. The rupture of a caseous focus of the lung or bronchial glands, rich in bacilli and toxins, results in a stormy onset with high

1. Fowler, G. R.: Thoracic Surgery in Tuberculosis, Ann. Surg., 1896, p. 541.

2. Lord, F. T., in Osler's Modern Medicine, Philadelphia, Lea & Febiger 3: 833, 1907.

3. Quoted by MacCallum, W. G., in Osler's Modern Medicine 3: 222, 1907.

4. Calmette, A.: L'infection bacillaire et la tuberculosa, Paris, Masson & Cie, 1920.

5. Letulle: La tuberculosa pleuro-pulmonaire, Paris, A. Maloine et Fils, 1916.

6. Babcock: Diseases of the Lungs, New York, D. Appleton & Co., 1907, p. 512.



fever and great toxemia and the fairly rapid development of a purulent tuberculous effusion. Whatever the mode of development or course of infection, provided the purulent effusion remains purely tuberculous, there are no indications for open drainage. These cases should be treated by aspiration, to be repeated as frequently as necessary, with simultaneous replacement by air to protect the underlying lung. In pyopneumothorax with open bronchial fistula, the same method should be used, preserving a neutral intrapleural pressure to give the opening into the bronchus an opportunity to close. No good can accrue to the patient by adding a secondary infection, as must inevitably occur if a trochar or tube is used for permanent drainage.

In tuberculous empyema with mixed infections—the indications for treatment are clear, but, unfortunately, they cannot always be met. The secondary infection should be combated if possible without open drainage. We must admit, however, that our efforts in this direction will not always be successful. The presence of a mixed infection in tuberculous empyema when no bronchial fistula exists is no indication for open operation.

Aspiration with replacement by air, repeated as frequently as necessary to keep down the effusion and limit the absorption, will not infrequently control the secondary infection. It should always be given as thorough a trial as the condition of the patient will permit. The importance of the outcome of the tuberculous lesions must never be lost sight of. When a definite bronchial fistula exists and does not close after neutral pressure has been maintained for some time, we are forced either to allow the patient to die within a few days or weeks, or to drain openly and, by so doing, prolong life, but fully expecting the drainage to continue throughout the existence of the patient. If such drainage is instituted, it is preferably done with the smallest amount of trauma (trochar and catheter).

Not much need be said of technic. Replacement of the pus withdrawn by air is essential, unless a permanent bronchial fistula exists, to maintain lung collapse, and prevent pain and shock. The pneumothorax outfit should be used for this purpose. A small needle has the advantage of limiting the danger of infecting the needle track (tuberculoma), but must, of course, be large enough not to block. Particular care should be taken to determine definitely by the manometer during the aspiration whether or not a bronchial fistula exists. This should be tested on every possible occasion, as these fistulas, it is well known, are liable to be closed at one time and open at another. Adolph Meyer reported a case before the National Tuberculosis Association in 1920 of the expulsion of the contents of an empyema through a bronchial fistula by the introduction of air above the fluid level. This has no advantage unless the empyema is so situated that it could not be easily and conveniently reached by external puncture.

The introduction of antiseptic fluid into a closed empyema cavity apparently does little good. If practically all the pus can be aspirated, alcohol in strength from 50 to 95 per cent., or 2 per cent. solution of formaldehyd in glycerin seems to relieve the sepsis at times. Gentian violet has not proved successful. Surgical solution of chlorinated soda (Dakin's solution) is contraindicated and of no avail. The effect of these fluids mentioned is probably enhanced by washing out previously with salt solution.

As tuberculous empyema is a complication of pulmonary tuberculosis and frequently of its advanced stages, it goes without saying that the prognosis is

often grave. The most favorable cases are those without marked lung involvement. Unfortunately, many of the cases encountered are terminal phases of the lung disease or are identified with late and disastrous accidents of the pulmonary tuberculosis, such as the rupture of large cavities into the pleura in patients whose resistance is already exhausted. There still remain, however, a considerable number of cases in which the duration of life and comfort of the patient for the next few years depend entirely on whether the surgeon is able to resist the dictum that pus in the pleura, particularly when accompanied by fever, requires thoracotomy.

A few case histories are presented to emphasize that:

1. Open drainage in tuberculous empyema is an unsatisfactory and often a disastrous procedure when the end-results are considered.

2. The presence of other organisms in the pleural pus besides the tubercle bacillus—mixed infections—can be successfully treated by aspiration and replacement by air, which is contrary to the usual teaching.

3. The tuberculous base of empyema is often overlooked.

During the last few years, I have observed twenty-eight cases of tuberculous empyema with mixed infections. Eight of these were treated by aspiration and twenty by open drainage. I have treated all of the aspiration cases, but did not see many of the open drainage cases until operation had been performed. Only those cases in which there was persistent bronchial fistula were opened. Of the patients treated by open drainage, nine are dead, only one being considered as at all well. This was a patient treated by trochar and catheter, and he is at work and doing well. All of the others must be classed as more or less chronic invalids. Of the eight patients treated by aspiration, one is dead. All the others are working and in good health.

The first case is the only case of open drainage in which I have had an entirely satisfactory result. It is submitted as the misleading exception to the general rule.

#### REPORT OF CASES

CASE 1.—J. D., a man, admitted to the Union Printers Home in 1914 with extensive tuberculosis of the left lung, was treated by artificial pneumothorax for about three months, when he suddenly became acutely ill and a spontaneous pneumothorax was diagnosed. Pus rapidly accumulated in the left pleural cavity, showing tubercle bacilli and many streptococci. He was aspirated for a little more than a month, and was then drained by trochar and catheter. Drainage was continued for about twenty months and then the sinus closed. He was discharged from the Union Printers Home in 1917, has been working continuously since that time, and is apparently in excellent condition.

The next three cases are more typical of the after-history of the drainage cases.

CASE 2.—Mrs. J. L. I. had had what was probably pleurisy with effusion sixteen years before. Some time after this, following delivery, she was ill in bed six weeks with chills, fever and pain in the right side. Five years before I saw her, during an attack of bronchitis, she suddenly expectorated a quantity of pus and, following this, began to have a rise of temperature. Two months later she had an extensive empyema with a mixed infection, which I drained. Improvement was marked, but a large sinus and cavity remained which proved to be tuberculous. Two years later eight ribs were resected. Convalescence was stormy, but she has since improved markedly but still has a sinus and cavity.

Case 3 is also a tuberculous empyema which was overlooked until drainage had been performed.



CASE 3.—Mrs. C. was delivered in April, 1921, and five days later developed a continuous rise of temperature which frequently ranged from 101 to 104. About a month after delivery, she came to Colorado Springs. She was found to have fluid in the left chest, reaching to the sixth rib posteriorly. Aspiration was at first unsuccessful, but three days later pus was found and drained, and tubercle bacilli were then found in the pleural fluid. A few days later, an effusion developed in the other pleural cavity. She became septic and died of acute miliary tuberculosis two months after delivery.

CASE 4.—T. O. T., a man, had influenza in 1918, and was in bed six weeks, during which time fluid accumulated in the left chest and was aspirated. Three months later, aspiration was again performed, and thereafter this was repeated at intervals of three weeks. Six months after his illness had begun a rib resection was done and three drainage tubes inserted, one of which was soon lost in the cavity. Somewhat later four additional ribs were removed, and the lost tube was recovered. A year after the drainage was begun, the sinus was enlarged and the tube dispensed with as the cavity was not draining properly. The cavity was irrigated with saline and iodine solutions. Up to this time no tubercle bacilli had been found in the pus. In July, 1920, eighteen months after the beginning of his illness, he consulted my colleague, Dr. Giese, who diagnosed tuberculous empyema. The sputum was negative, but the pleural pus contained tubercle bacilli. During the last year and a half efforts have been made to reduce the size of the cavity. Intensive irrigation with surgical solution of chlorinated soda was used and the sinus finally closed for a time. During the interval when the sinus was closed, formaldehyd and also alcohol were tried. Last August, it became necessary to again put in drainage tubes. Nov. 9, 1921, I resected 6 inches of the eighth and ninth ribs. This case illustrates not only the difficulties in the after-care of drainage cases, but also the fact that the tuberculous nature of the empyema may escape detection for a long time.

It is a matter of satisfaction to turn to three of the cases in which aspiration was performed.

CASE 5.—Miss E. G. developed pulmonary tuberculosis in 1919, and for a year and a half was under the care of osteopaths and quacks. She was first seen last January when suffering from a recent spontaneous pneumothorax of the valvular type with a positive intrathoracic pressure. This pressure gradually decreased for three months, when she developed a purulent empyema of mixed type. Aspiration was performed and air was injected at intervals of about two weeks during the summer of 1921. She has gained 30 pounds (13.6 kg.), she takes a reasonable amount of exercise, and the roentgen ray reveals very little fluid in the pleura at the present time.

CASE 6.—F. M., a man, in 1914 developed active pulmonary tuberculosis and soon went for his health to Phoenix, Ariz., where he almost immediately began to have hemorrhages with high fever and rapid loss of weight. Artificial pneumothorax was induced on the right side, which controlled the bleeding. He was given three subsequent pneumothorax treatments of from 600 to 700 c.c., when fluid developed. This was at first straw colored, but later became purulent. Aspiration was performed every two weeks for five months, when he came to Colorado, in June, 1916. He then weighed 115 pounds (52 kg.), had a temperature of about 100, and had complete aphonia. Soon after his arrival, his temperature rose to 104, and 32 ounces (946 c.c.) of thick, purulent fluid was aspirated. Aspiration was repeated every other day for a time and the interval increased gradually to once a week, then two weeks, then three weeks and so on until now aspiration is performed every eight or ten weeks. At present he weighs 17 pounds (7.1 kg.) above his usual average, and he has worked for the last two years. There is no cough or expectoration.

This case is cited to show that long continued aspiration often offers an excellent chance of recovery. The aspirated fluid always contained tubercle bacilli. In the earlier aspirations there were always mixed infections. At present no mixed organisms can be found.

CASE 7.—Mrs. J. P. P., aged 32, came to Colorado in August, 1914, just after a diagnosis of tuberculosis, although she had had pleurisy during the preceding year at various times. She did not do well under hygienic and dietetic treatment, and artificial pneumothorax was begun in September, 1915. This was completely successful and was maintained for two years without any particular difficulty. In August, 1917, she developed fluid in the pleural cavity, which rapidly changed to pus and was aspirated every one to three weeks to March, 1918. After a time aspirations were less frequent, the last occasion being in November, 1918. Since that time she has had no aspiration, and the lung has been allowed to expand. This fluid was frankly purulent, and contained many secondary organisms as well as tubercle bacilli.

## CHEMOTHERAPEUTIC CONSIDERATIONS OF PENTAVALENT AND TRIVALENT ARSENIC\*

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The study herewith detailed was undertaken in order to contrast the biologic effects of the pentavalent and trivalent forms of arsenic.

Valence is the energy capacity of an element expressed in numerical terms. Hydrogen has been selected as the basis for the measurement of valence and has been taken as the unit, namely, 1. When an atom of an element requires only one hydrogen to form a chemical compound, the element is considered univalent. Elements with greater energy capacity are bivalent, trivalent, etc.; moreover, they may exist in two or more conditions. For example, iron is both bivalent and trivalent; mercury, univalent and bivalent.

Arsenic belongs to the group of pentavalent elements. In pentavalent condition, all its energy is bound, the capacity for further reaction being greatly diminished. On the other hand, in trivalent condition it is unsaturated, the potential reactivity being much greater.

The chemotherapeutic investigations carried out by Ehrlich and his associates have developed the fact that arsenic in the trivalent condition is a more powerful trypanocide and spirocheticide than arsenic in the pentavalent condition. There would, in this connection, appear to be established a relationship between the energy capacity of the compound and its destructive influence on the parasites in question. This important observation and, moreover, the fact that chemical elements must be linked to the nuclear carbon in order to exert their fullest effect on the pathogenic microorganisms are the two most important advancements in modern chemotherapy.

If we take as an example of the pentavalent group such an inorganic salt as sodium arsenate, we find that it has a relatively high toxicity as compared with organic arsenicals containing pentavalent arsenic. The maximum tolerated dose of sodium arsenate is 50 mg. per kilogram. (Sodium arsenite, an inorganic salt, in which arsenic is trivalent, is much more toxic than sodium arsenate, being tolerated only in 3 mg. per kilogram.)

On the other hand, atoxyl, an organic compound with pentavalent arsenic, is tolerated in 120 mg. per

\* From the Dermatological Research Institute.



kilogram. The first step, therefore, in detoxication would appear to be the incorporation of the arsenic into an organic molecule. Atoxyl, which was introduced by Bechamp, was at one time employed in the treatment of syphilis. Ehrlich used it as the starting point in the chemotherapeutic studies which culminated in the elaboration of arsphenamin. It is the sodium salt of arsanilic acid, produced by the fusion of arsenic acid and anilin. We have endeavored to determine the toxicity and the therapeutic effect of atoxyl and of various other compounds intermediate between it and arsphenamin.

In determining the toxicity of some of the intermediate compounds, discrepancies are encountered owing to the difficulty of preparing these in chemically pure form. Less is known concerning the precedent compounds than of arsphenamin, and yet it is a well known fact that different lots of arsphenamin vary in toxicity.

In order to avoid error as much as possible, we have made a number of tests of some of the intermediates and have averaged the results.

Fifteen different lots of the nitrohydroxyphenyl-arsenic acid were tested by us intravenously in white rats. The highest average tolerated dose was 88 mg. per kilogram.

In the process of making arsphenamin, this nitro compound is converted into the aminohydroxyphenyl-arsenic acid. Eight lots of this substance were tested by us and exhibited an average maximum tolerated dose of 114 mg. per kilogram.

The average of a large number of lots of arsphenamin was above 110 mg. The average of a large number of lots of neo-arsphenamin was 280 mg. It is seen, therefore, that the toxicity of the various arsonic acids is no lower than that of the pentavalent atoxyl. This is shown in Table 1.

TABLE 1.—TOXICITY OF VARIOUS ARSONIC ACIDS

	Highest Average Tolerated Dose Mg. per Kg.	Duration of Test Days
Trivalent inorganic arsenic:		
Sodium arsenite .....	3	10
Pentavalent arsenic:		
Sodium arsenate .....	50	10
Arsanilic acid (atoxyl) .....	120	10
Arsonic acids (pentavalent):		
Nitrohydroxyphenyl-arsenic acid* .....	88	10
Aminohydroxyphenyl-arsenic acid .....	114	10
"Arseno" compounds (trivalent):		
Arsphenamin .....	110	2
Neo-arsphenamin .....	280	7

\* The arsonic acids and arsphenamin were converted into their disodium salts.

As a result of the oxidation of arsphenamin, aminohydroxyphenylarsenoxid (to be referred to for brevity as "arsenoxid") is formed. When arsphenamin is excessively reduced, on the other hand, a substance known as aminohydroxyphenylarsin (to be referred to for brevity as "arsin") is produced.

These compounds are much more toxic than arsphenamin. Our figures for the highest average tolerated dose of these compounds are: arsenoxid, 38 mg. per kilogram, and arsin, 35 mg. per kilogram.

There is another pentavalent organic arsenical known as diethylarsonic acid which has been recently advertised under a trade name for the treatment of syphilis. The toxicity of this preparation is very low. It is tolerated in 200 mg. per kilogram.

It will be seen that the foregoing arsonic acids are slightly higher in toxicity than atoxyl. Moreover, arsphenamin shows no superiority over atoxyl from the

point of view of toxicity. Neo-arsphenamin, however, is far less toxic than atoxyl. The striking superiority in value of arsphenamin over atoxyl is manifest when the therapeutic effect is studied.

We have found from long experience that the trypanosome of horse syphilis reacts chemotherapeutically in a manner similar to spirochetes, and we have, therefore, employed it as a test parasite. White rats infected with this parasite and untreated die in four or five days, at which time the blood swarms with trypanosomes. The dose of the compound requisite to sterilize the animal is taken by us as a guide.

TRYPANOCIDAL TESTS

Table 2 presents the average trypanocidal power of the arsenical compounds referred to above. The figures are based on the sterilization of white rats experimentally infected with *Trypanosoma equiperdum* (the parasite of "la dourine," or horse syphilis).

TABLE 2.—SUMMARY OF TRYPANOCIDAL TESTS

	Number of Milligrams per Kilogram Necessary to Sterilize Animals
Sodium arsenite .....	Trypanosomes could not be influenced in 3 mg. doses (toxic dose)
Sodium arsenate .....	Trypanosomes not influenced by 30 mg.
Diethylarsonic acid .....	Trypanosomes not influenced by 80 to 150 mg.
Nitrohydroxyphenylarsonic acid .....	Trypanosomes not influenced by 30 to 60 mg.
Arsanilic acid (atoxyl) .....	12
Aminohydroxyphenylarsonic acid .....	8.25
Aminohydroxyphenylarsenoxid .....	2.4
Aminohydroxyphenylarsin .....	0.8
Arsphenamin .....	2
Neo-arsphenamin .....	3 to 4

This table indicates that four of the compounds had no influence on trypanosomes in doses approaching the toxic limit.

The importance of evaluating compounds on the joint basis of toxicity and therapeutic effect is here shown. Diethylarsonic acid possesses a very low toxicity, but does not kill trypanosomes even after the administration of enormous doses. (It is of interest to note that Nichols of the U. S. Army Medical School found that it likewise had no effect on *Spirochaeta pallida*.)

On the other hand, there are two modifications of arsphenamin which transcend it in therapeutic effect, namely, arsenoxid and arsin, but they have a much higher toxicity. Arsin was found to be the most trypanocidal compound that we have studied. Arsenoxid was also highly trypanocidal, and in one test gave figures as low as arsin.

THE THERAPEUTIC INDEX

It is obvious that the value of any drug in a parasitic disease depends in large part on the relationship of its affinity for the parasite to its affinity for the body cells: in other words, on the relationship of its parasitotropic to its organotropic effect, or, to use another terminology, the relation of the toxic influence on the parasite and on the body cells. The greater the latitude between the tolerated dose and the parasiticide or curative dose, the more valuable is the remedy.

This relationship is represented by the fraction:

$$\frac{\text{Dosis tolerata}}{\text{Dosis curativa}}$$

If we take, for instance, atoxyl, the tolerated dose is 120 mg., and the trypanocidal dose, in our studies, 12.

$$\frac{\text{Tolerated dose, 120}}{\text{Sterilizing dose, 12}} = 10$$



Therefore, 10 represents the chemotherapeutic index with our strain of *Trypanosoma equiperdum*.

It is interesting to note that while atoxyl possesses a trypanocidal effect, a compound representing a product nearer in the stage of elaboration to arsphenamin, namely, the nitrohydroxyphenylarsonic acid, is devoid of such power. The nitro radical in this molecule appears to be dystherapeutic.

The neo-arsphenamin which we have extensively tested gives the best therapeutic index, with arsphenamin next. (To be sure, with another test parasite or,

TABLE 3.—THERAPEUTIC INDEXES

Sodium arsenite .....	} Cannot be expressed because of no demonstrable influence on the trypanosomes employed	
Sodium arsenate .....		
Nitrohydroxyphenylarsonic acid .....		
Diethylarsonic acid .....		
Arsanilic acid (atoxyl) .....		10
Aminohydroxyphenylarsonic acid .....		13
Aminohydroxyphenylarsenoxid .....		15
Aminohydroxyphenylarsin .....		44
Arsphenamin .....		55
Neo-arsphenamin .....		80

indeed, with different strains of the same parasite, the actual figures would be different, but they would bear much the same relationship to one another.)

CONCLUSIONS

1. Arsenic in inorganic compounds is highly organotropic and devoid of destructive effect on trypanosomes and spirochetes.
2. When linked to carbon in organic compounds, it may acquire a destructive influence on the parasite.
3. Organic arsenicals are generally less toxic than inorganic. Those containing pentavalent arsenic are no more toxic than the trivalent. The least toxic of the trivalent compounds are those which contain the so-called arseno group. Compounds of the arsenoxid and arsin type are considerably more toxic than of the arseno type.
4. The effect on trypanosomes and spirochetes appears to depend in considerable measure on the valence of the arsenic. Trivalent carbon-linked arsenic is a much more powerful trypanocide than pentavalent. The arsin type is more trypanocidal than any other type of organic trivalent arsenical, although arsenoxid also exhibits a high value in this respect.
5. The nitrohydroxyphenylarsonic acid possesses no trypanocidal effect, but when the nitro group is converted into an amino radical a striking change is immediately observed.
6. The arseno compounds, arsphenamin and neo-arsphenamin, give distinctly the best therapeutic indices of the entire series, and in this respect neo-arsphenamin is superior to arsphenamin.

In another paper to be published shortly, we shall consider the significance of the amino group in the chemotherapy of the arsenicals.

**Practitioner and Industrial Physician.**—The industrial board is responsible for the administration laws, but their effectiveness largely hinges on the physician, whose function is to cure but who has not been trained to adjudicate cases. A perfectly functioning working agreement between the private practitioner, the industrial physician and the medical representative of insurance interests is yet to be reached, but a new ethics will evolve out of precedents established and out of a better understanding of the intent of the law on the part of both the profession and the public.—*Nation's Health* 3:609 (Nov.) 1921.

INDIVIDUAL VARIATION AS INFLUENCING REHFUSS FRACTIONAL METHOD OF GASTRIC ANALYSIS

PRELIMINARY COMMUNICATION \*

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The ultimate value of the data acquired by any method obviously depends in great measure on the accuracy of the method. This involves not only the errors inherent in it, but also the magnitude of the personal equation. It is my purpose in this preliminary communication to report some critical studies of the Rehfuß fractional method of gastric analysis. In a review of the literature on this method and its applications, a surprising fact was noted: So far as could be determined, there has been published no series of fractional gastric analyses on the same individual at different times, using the same test meal and having all other physical and mental conditions as nearly identical as possible. The necessity of performing such experiments in order to establish the errors inherent in the method is apparent, yet neither the literature nor private correspondence has revealed such information.<sup>1</sup> The following is an attempt, therefore, to establish the validity of this method in its application to the study of psychoses.

The group of twenty patients selected for these studies belonged to the so-called functional psychoses and comprised twelve diagnosed as dementia praecox, eight manic-depressive, seven manic, and one depression. All showed evidence of bacterial infection in teeth and tonsils. There was some likelihood that the gastro-intestinal tract might likewise be considered a focus of infection. Some patients, as might be expected, proved more cooperative than others, but all were accessible. The manner in which they swallowed the tube was carefully noted, as well as their behavior during the analysis. They were asked to expectorate freely and not to swallow any more saliva than was absolutely necessary. It was manifestly impossible to carry out the analysis under anything resembling aseptic conditions, but an effort was made to reduce gross contamination to a minimum by sterilizing the tubes and syringes. Before the Rehfuß tube was introduced, the patient's mouth was rinsed with a chloramin-T solution followed by sterile distilled water.

The results obtained may best be discussed in connection with a few curves which will emphasize the salient points, as no attempt will be made to go into details.

Since Rehfuß considers no one curve as exclusively normal, the curves named isosecretory, continued and hyposecretory are regarded as being characteristic of

\* Read before the Brooklyn Neurological Society, Oct. 19, 1921.  
1. The following two series of papers by Rehfuß, Hawk, et al. have been consulted. The gaps represent numbers for which no reference in the standard literature has been found; the duplication of the number 10, as well as the missing numbers, remains unexplained by the authors: Gastro-intestinal studies: 1. J. A. M. A. 63:11 (July 4) 1914; 2. Ibid. 63:909 (Sept. 12) 1914; 3. J. Biol. Chem. 19:345, 1914; 4. J. A. M. A. 63:2088 (Dec. 12) 1914; 5. Ibid. 64:1737 (May 22) 1915; 6. Ibid. 64:569 (Feb. 13) 1915; 7. —; 8. J. Biol. Chem. 21:165, 1915; 9. —; 10. J. A. M. A. 65:1021 (Sept. 18) 1915; 10. Am. J. M. Sc. 150:72, 1915; 11. J. Biol. Chem. 23:505, 1915; 12. Am. J. Physiol. 39:459, 1915-1916.  
Gastric response to foods: 1. Am. J. Physiol. 45:1, 1917-1918; 2. Ibid. 48:411 (May) 1919; 3. Ibid. 49:174 (July) 1919; 4. Ibid. 49:204 (July) 1919; 5. Ibid. 49:222 (July) 1919; 6. Ibid. 49:254 (July) 1919; 7. Ibid. 51:332 (March) 1920; 8. —; 9. —; 10. Am. J. Physiol. 52:1 (May) 1920; 11. Ibid. 52:28 (May) 1920; 12. Ibid. 52:248 (June) 1920; 13. Ibid. 53:65 (Aug.) 1920.



different types of normal digestion. It is inferred that all curves for an individual should adhere to one type only, which constitutes the normal curve for that subject.

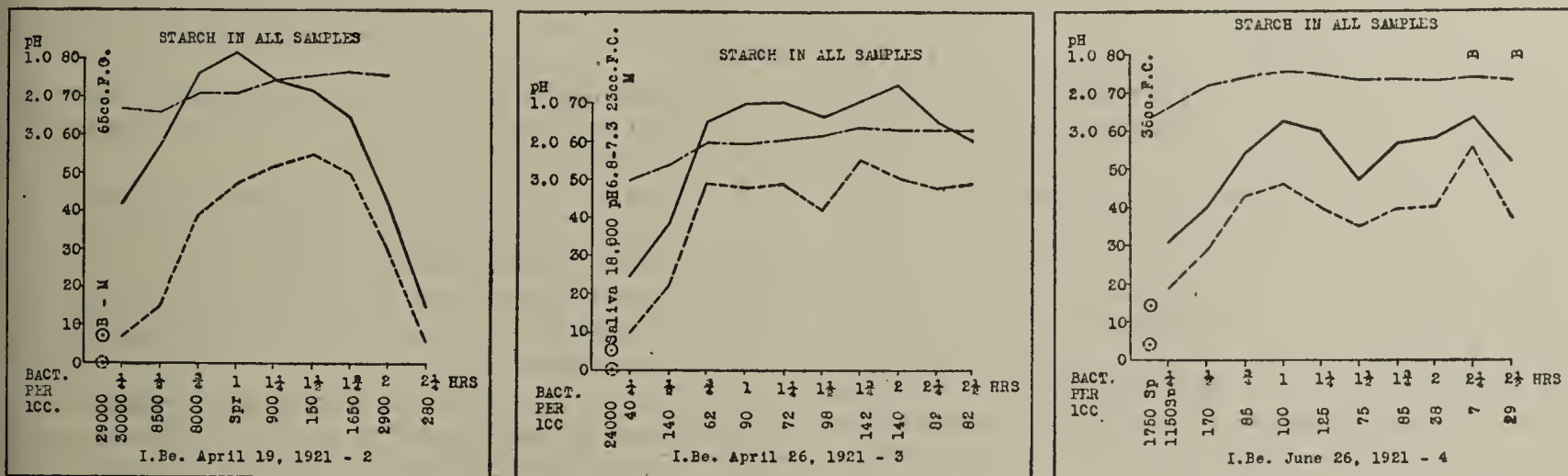
In the accompanying chart, at the left is a curve which corresponds to the type called "isosecretory" by Rehfuß. The middle curve corresponds to that called "continued." Contrary to expectation, these are not single curves taken from two different individuals but two curves from the same individual examined twice in one week. At once the question will be raised as to the difference in mental state. But no difference was discernible, for mentally she appeared to be in the same condition at the two times the analyses were conducted. A third analysis carried out two months later, with no change in physical or mental condition, gave still another curve, resembling the middle curve, but not identical with it.

Considered from the standpoint of clinical interpretation, these curves present obvious divergences. How could one make comparisons between different individuals on the basis of a single curve for each, when the differences between curves for the same individuals are so striking? It might be suggested that, in these

food, or the behavior of this or that stomach, while only one curve is presented for each condition.

No chemist would venture to report a quantitative analysis which had not been run at least in duplicate. The physiologic chemist cannot emancipate himself from this primary scientific necessity, which insures the validity of his results. In fact, with such a method one would naturally expect that the analysis would be repeated until a satisfactory agreement between curves could be obtained. Often, to be sure, two analyses agree so closely as to be a bona fide representation; more often, three analyses are required. Obviously, however, a single determination is inadequate on which to base conclusions of any significance.

Turning our attention to another point of some interest, we find that the variation in the highest point on curves from the same person often exceeds differences between highest points of different persons; for example, in the chart the high points are 82, 80, and 64, or an average of 75. Comparing this average with another subject taken at random, say one who showed high points of 75, 83 and 58, or an average of 72, the difference between the average high points for these persons is only 3 c.c. Yet the variation in repeated curves from



At left, a curve corresponding to the type called "isosecretory" by Rehfuß. In center, a curve corresponding to the type called "continued." This curve was taken from the same patient a week after the first. At right, a curve obtained two months later, with no change in the condition of the patient. Ordinates, from 0 to 80 c.c. of tenth normal sodium hydroxid per hundred cubic centimeters of gastric contents; abscissae, from one-quarter hour to two and one-half hours at fifteen minute intervals; numbers below abscissae, bacteria per cubic centimeter; numbers at left of ordinates, pH 1.0-3.0; F. C., fasting contents; point in circle total acidity of fasting contents; point in broken circle, free acidity of fasting contents; B, bile; M, mucus.

persons, variations have resulted from some idiosyncrasy in technic. While it is true that such a method must be subject to great errors due to the personal equation, nevertheless the method has been followed with fidelity to Rehfuß' description and the experience of others.

The question might be raised as to whether these results are due to some peculiarities in the subject. However, similar results have been obtained with the other individuals of the group studied, but lack of space does not permit the publication of these graphs, which will appear elsewhere.<sup>2</sup> So far as could be observed, no change in physical or mental status was detected which might account for these differences occurring between analyses repeated within a short period of time.

Common sense would justify the belief that digestion in the same individual would vary from day to day. Yet hundreds of curves obtained by this method have been published by Rehfuß and others establishing conclusions concerning the digestibility of this or that

either person is upwards of 18, or more than six times 3 c.c. The high point has some meaning in gastric acidity for those who use the Rehfuß method, and even more for those who use the one-hour complete aspiration. The necessity for repeated analyses is here again demonstrated.

A similar situation exists with regard to the total amount of "fasting contents." For example, the stomach residues indicated in the chart are 65, 23 and 36, or an average of 41. In another patient it was 80, 6 and 25, or an average of 37. The difference then in the total amount of fasting contents between the two persons is only 4 c.c., while the differences in amounts from the first person are 42 c.c., and in the second 74 c.c., both of which exceed the difference between the two persons. Rehfuß has asserted that, in contradistinction to other investigators, his higher findings for the total amount of fasting contents represents normal conditions, and names 50 c.c. as the average residue. How significant can this be so long as we do not know the extent of the individual variations which went to make up the average, for it has just been shown that these variations often exceed differences between individuals? It is, of course, true that those employing

2. Kopeloff, Nicholas: The Fractional Method of Gastric Analysis Applied to the Psychoses, State Hosp. Quarterly, New York, to be published.



other methods of gastric analysis have fallen into a similar error.

If one examines these curves with a view to establishing how closely the usual titration method for free acidity approaches the true acidity as expressed by  $p_H$ , we find that there is agreement in only 80 per cent. of the instances. For example, in the chart there is slight agreement in the first curve and fairly good agreement in the other two curves from the same individual. In other words, the results corroborate those of Shohl of Johns Hopkins, who asserts that the hydrogen ion concentration is the important factor in gastric acidity, and that it cannot be measured by the common titration method. The electrometric or colorimetric methods well known in physical chemistry are employed for that determination.

In view of these results, obtained by applying the fractional method of gastric analysis to psychoses, the question which undoubtedly would arise is, Do normal persons exhibit the same variations on repeated analyses, or can these individual variations be ascribed to the mental condition of these patients? The answer has been graphically represented in curves compiled from analyses of ten nurses who had no digestive disturbances of any kind and who were normal, physically as well as mentally, and remained so throughout the period of investigation.

It was found that the three curves obtained within one week on the same subject differed radically; in the next subject the first curve differed from the other two which followed, while in the last subject the middle curve was sharply in contrast to the other two. These curves of normal persons establish the fact that individual variation is a factor of primary concern in analyses obtained by the Rehfuß method. Furthermore, this factor has been neglected by those employing the method.

No discussion of the Rehfuß method would be adequate without mention of a valuable paper by Gorham.<sup>3</sup> He has shown that errors exist in this method, owing chiefly to the shifting in position of the tube, and that 10 c.c. samples are not sufficiently representative of the total gastric contents to be a valid aliquot. I have corroborated these results, and a report will be published shortly.<sup>4</sup>

I stated at the outset that this method was to be used for the purpose of establishing the probabilities of focal infection in the gastro-intestinal tract. It is natural to expect (and the bacteriologic literature bears this out) that when gastric acidity is high the bacterial content is low, and vice versa. We have not been able to confirm this observation save in half of our instances. In other words, instead of a falling off in bacterial count there is an increase with a rise in gastric acidity, and subsequently a mutual decline. This suggests that another as yet unknown factor is in operation. From close observation, we have concluded that the bacterial content of the stomach depends on the swallowing of saliva. In other words, the more saliva swallowed, the greater will be the bacterial count, and vice versa. It is of interest, in this connection, to note the case of a patient who was in a depression and secreted very little saliva. Her mouth would remain quite dry throughout the analysis. It is significant, therefore, to observe that bacteria were absent (or practically so) from the various fractions taken at

different times. The bacterial counts of the saliva run well in the hundreds of thousands, as a rule, and since the reaction is generally near neutrality, there is nothing to hinder them en route to the stomach. A final experiment (in which the saliva is suctioned off) has thrown further light on this point; for when the saliva has been mechanically removed during the analysis, the bacterial counts on gastric contents are tremendously reduced.

In discussing the gastric acidity of the functional psychoses it may be of interest to make mention of possible differences to be found between dementia praecox and manic-depressive patients. So far little difference between these two groups has been observed. For example, the average high point of the dementia praecox patient is about 61, while the average high point of the manic-depressive group is 61. It is wiser not to generalize until further data have been accumulated.

#### SUMMARY

In a critical study of the Rehfuß fractional method of gastric analysis, the following results were obtained in normal and psychotic individuals:

1. Repeated analyses on the same individual within a short period of time—while the physical and mental condition remain practically unchanged, yield different curves.
2. These curves from the same individual vary as much from one another as the differences between the curves of different individuals.
3. Variation in the highest point on curves from the same individual often exceeds differences between the highest points of different individuals.
4. Variation in the total amount of fasting contents from the same individual is often greater than between different individuals.
5. There is an imperfect correlation between the measurement of gastric acidity by the titration method and hydrogen ion concentration determinations. The latter yields more important information regarding true acidity. This agrees with the work of Shohl.
6. Similar results were obtained when repeated analyses were made on healthy normal individuals showing no gastric symptoms.
7. In only half of the instances was there any correlation between high gastric acidity and low bacterial count. This indicates that another unknown factor is in operation.
8. It is suggested that the bacterial content of the stomach depends on the swallowing of saliva. Bacterial counts, reaction of saliva and observation of amounts swallowed substantiate this, as well as removal of saliva during the analysis.
9. There is little difference in the gastric acidity of patients diagnosed as having dementia praecox and manic-depressive insanity.

#### CONCLUSION

Subject to the limitations of the investigation, it is indicated that single determinations of gastric acidity by the Rehfuß method are not sufficient on which to base conclusions, because they do not take into consideration individual variation.<sup>4</sup>

3. Gorham, F. D.: Variations of Acid Concentration in Different Portions of Gastric Chyme, and Its Relation to Clinical Methods of Gastric Analysis, *Arch. Int. Med.* 27: 434-441 (April) 1921.

4. Kopeloff, Nicholas: Variations in Aliquot Fractions of Gastric Contents, *Proc. Soc. Exper. Biol. & Med.*, to be published.

4. Since this paper was submitted for publication, the author's attention has been called to a series of papers dealing with the Rehfuß method by Bennett, Ryle and their associates, published in *Guy's Hospital Reports* 71, 1921. Many of the points brought out by these authors are substantially the same as those herein arrived at, and the fact that these data were independently obtained lends an added interest.



## EPIDEMIC (LETHARGIC) ENCEPHALITIS

## A PERSONAL EXPERIENCE\*

With the hope that my experience may be of assistance to others in the diagnosis, prognosis and convalescent care of persons suffering from epidemic (lethargic) encephalitis, I will record my symptoms, with special reference to the subjective symptoms, as they occurred, without attempting to make any deductions or any reference to literature, which is not available to me at this time.

## PERSONAL HISTORY

At the time of the illness here recorded I was 34 years of age, married, and had one child, aged 7 years. For the twenty years preceding I had enjoyed excellent health. After returning from France and receiving my discharge from the army in August, 1919, I traveled throughout the eastern half of the United States until January 2, when I arrived in Baltimore, where I remained until the end of February. During this period of moving from place to place I had had no illness of any sort except a severe coryza at Christmas time (1919); and I had knowingly come in contact with but two persons who had been ill: my son, who had a gastric disturbance following a long ride on a train during the second week in February, and a man who had recently been ill with influenza.

## PRODROMAL PERIOD

During the latter part of January and the month of February I was exceedingly nervous, and during February there was present an extraordinary sexual excitement, but there were no other signs of illness, and I attributed these symptoms to the strenuous life I had been living for a few months. When my wife met me about the middle of February, she said that she had never known me to be in such a disturbed mental condition.

## ONSET

In New York on the evening of February 27, after an unappetizing meal, I suddenly became nauseated and vomited. Vomiting continued throughout the night. The next day everything eaten was immediately vomited, and I was feverish and chilly by turns, as if I were experiencing the onset of some acute illness. It was but a week since I had been talking with the man convalescing from influenza, and I thought that I was experiencing the onset of that disease. That night I was unable to sleep; on the contrary, my mental processes were exceedingly active. My mind "raced" with thoughts coming and being carried to their conclusion with such speed that the experience was extremely pleasant. These thoughts have stayed with me almost as clearly as though it were last night. During that night I had a most unusual experience, in view of the symptoms mentioned under the heading of prodromes, the complete loss of sexual power. This was so startling that I thought that my illness was more severe than I had previously supposed.

The next day found the symptoms much abated, and though my head ached and I felt weak, I was well enough to go out for a little walk with my family. This

night the symptoms of the preceding night returned, but with diminished force, and my thoughts were not nearly so clear.

On the third day, March 1, I lounged around my room all day. This night, the fourth from the onset, I slept.

The following day I went to the office as usual and made final arrangements to leave for Panama on the next day. I still felt as though recovering from a mild attack of influenza.

## APPARENT INTERMISSION

During the trip, which lasted seven days, I had a bilateral earache. Never before that I can remember had I had the slightest trouble with my ears. Herpes labialis developed about the middle of the week. A trip on the ocean would ordinarily have been a pleasure to me, but this time it became tiresome, and I was very nervous and irritable. I attributed these symptoms to the fact that for several months I had been working very hard and to the illness in New York. Although sexual power had returned as the early symptoms disappeared, I no longer had the excitement mentioned previously. I landed at Christobal, Canal Zone, March 10, 1920, apparently quite well.

## THE ATTACK

*Period of Excitement, Conscious.*—No other symptoms occurred until March 13, when I was again unable to sleep. Once more I had the pleasant sensation of my mind racing joyously and clearly, and again I experienced that "mysterious" loss of sexual power. From this time on there was a loss of sexual desire as well as of sexual power.

March 14, I was happy, bright and talkative (not my usual habit). Both thoughts and speech were rapid. I discussed the work with my predecessor, and with a lively imagination I told story after story to my son, speaking so rapidly that he said he had difficulty in understanding me. Again I could not sleep.

March 15, I went to the office. I was still unusually talkative, but spoke through set teeth. The night brought no sleep.

March 16, on arising in the morning, I found that I could not keep from humming or repeating odd, meaningless sounds. The "control" had ceased to function. I noticed that, without any exertion, my respiration became panting in character, and men whom I met asked me if I had been running. I felt as if I were under the influence of alcohol, and talked as if I were. I was so intent on becoming thoroughly acquainted with the various phases of my new work, as my predecessor was to leave in a few days, that I did not realize that I was ill and I felt somewhat ashamed because, as I thought, my nerves were getting beyond my control. Throughout the day my mind was active, but I was becoming more and more irritable. There was no sleep that night.

March 17, the humming had disappeared, my mind was not so clear, and my thoughts were much less rapid. The panting respiration was present in an aggravated form. At night, when I tried to sleep, I found myself setting my teeth, and in breathing I made such "awful noises" that I almost drove my wife to distraction. To me it seemed that I would get almost to sleep and then some interference or irregularity of my breathing would again awaken me. Sleep was impossible. I felt somewhat feverish.

\* This diagnosis was made by Drs. R. C. Connor and C. D. Briscoe of Ancon Hospital, Dr. William James of Panama Hospital, and Dr. F. A. Miller of the International Health Board of the Rockefeller Foundation.



March 18, I left the office early to try to tire myself out by exercise so that I might sleep. I was unsuccessful.

March 19 was a repetition of the preceding day.

*The Lethargic Period.*—March 20, I went to the office as usual, but soon returned to my room at the hotel, where I tried to tire myself out, feeling certain that I had merely lost control of my nerves in a new situation and in the tropics. That afternoon I fell asleep for a few hours, and on awakening found that I had a marked diplopia. However, I did not yet feel sufficiently ill to stay in bed, and in the evening I went out on a business errand.

From March 21 until my temperature became normal about twelve days later, my memory of all that occurred is lacking or extremely hazy. My wife states that while still at the hotel I talked incessantly and that my hands and arms were never still. I gave numerous short connected discourses on subjects related to my work or problems in which I was interested. Most of the time I lay with my eyes closed, mumbling or talking, picking at the bedclothes or groping as if hunting for something to eat. When I found I had nothing I would open my eyes, and a queer, disappointed expression would spread over my face. This happened so often as to be characteristic. As long as my attention could be held, which was for only a few moments at a time, I answered clearly and intelligently. March 24, when two physicians were called in consultation, I evidently made a great effort at self-control for some time. One of the physicians remarked that my case resembled typhoid.

On entering the Ancon Hospital, March 24, I had a temperature of 102.3. (I had probably had that much elevation of temperature for several days previous to my admission.) My attention could be held only by speaking to me in a loud voice or by calling my name repeatedly. When I did answer, I replied intelligently, but I would immediately pass off into a stupor with delirious muttering.

For the first week in the hospital the nurses' entry on my chart was "irrational." My wife, who visited me every day, states that for three or four days I was in the same condition as at the hotel. My attention could be held for only a few seconds. My eyes would close and I would begin to grope and to talk about something else or mutter an utterly meaningless jumble of words.

March 28, when my wife called to see me, she noticed that she could command my attention for a longer period of time and that I seemed to pass into a more quiet sleep. Of all the tests that were made on me, I remember but one, the spinal puncture, made that afternoon. Before going to the hospital I knew that almost the first thing that would happen would be the spinal puncture, and in the condition I was in I became very much opposed to the performance of this test. However, my memory of this operation is not of the pain but of the skill of the physician who did it. I can remember a sensation of "if that is all, it is nothing." From various sources I find that I must have put up rather strong opposition to having the puncture made, but when the physician at last came to do it, I offered no resistance, and as he reports, I was asleep before he was through.

#### SUMMARY OF THE HOSPITAL RECORDS (EXCERPTS)

*Physical Findings.*—(Except as herein recorded, the hospital findings were negative.) Weakness of the left internal

rectus. Sense of smell impaired. Eyegrounds negative—no blurring or choking of the disk. Catalepsy present.

*Laboratory Tests.*—Blood culture sterile. Wassermann reaction negative on blood and spinal fluid. Spinal fluid under great pressure—it spurted out. Cell count 30 per cubic millimeter. Cells present, small mononuclears. Globulin tests negative: butyric acid; ammonium sulphate; phenol. Widal positive for *B. typhosus* (I have been vaccinated against typhoid three times, the last time being in August, 1918, while I was in the army, when oil emulsion vaccine was used). Leukocyte count, 9,000. Red blood count and hemoglobin, normal. Nasopharyngeal culture positive for *Streptococcus viridans* and staphylococcus, but negative for meningococcus, *B. influenzae* and *Streptococcus hemolyticus*.

*Notes.*—"During the first week in the hospital, the patient would get out of bed, shave and dress himself completely, not forgetting collar and tie, but all unconsciously." (I have a hazy recollection of my impatience with the hospital authorities when they "arbitrarily changed" my bed. As a matter of fact, I afterward learned that I had wandered into another patient's room and had tried to drive him out with pillows from "my room.")

My temperature was down to 99 F., March 31, and was normal, April 7. At the end of the third week in the hospital, April 14, I went home, not because I had recovered, but because there apparently was nothing that could be done for me at the hospital that could not be done at home.

#### CONVALESCENCE

The long and tedious period of convalescence was characterized by marked weakness, an insatiable desire to lie down and sleep, and various nervous manifestations. The most pronounced symptoms disappeared within six months, but some of the first to appear, impotence and loss of sexual desire, were more tenacious, and at the present time, twenty months after the onset of the disease, I cannot confidently say that normal sexual life has returned.

Before leaving the hospital, I was conscious of an almost constant desire to urinate, but the flow was very slow in starting and then it was little more than a dribble. At this time I was also very constipated. These symptoms lasted for one month after I had left the hospital.

For several months, perspiration was very marked, especially about my mouth.

For months I involuntarily set my teeth when trying to go to sleep or on the slightest excitement.

Often I felt in my throat what I diagnosed as an hysterical bolus.

For about a month my memory was an almost absolute blank, and my past was so hazy that it was impossible for me even to understand why I was living with my family. Why I should not take one of the ships that passed and go to some other place was a question that often arose. It seemed to me as though a dense fog surrounded my whole past; nothing was certain. Any attempt to remember was usually an impossible struggle.

Before these symptoms left (three weeks after leaving the hospital) I resumed the duties of my office. The walk of two short blocks from my home to the car was almost too much for me, and when I arrived at the office, I could scarcely wait until I reached a chair to sit down. In spite of the most strenuous efforts I frequently went to sleep. Sleep overwhelmed me during the short street car rides to and from the office. At home it was impossible for me to sit at the table until the meal was finished. I must lie down.



At night I could not overcome a fear of I know not what. I made endless rounds to see that the windows and doors were locked, and at every noise, imaginary or real, I was out of bed prowling around the house to find the cause of it. The nights were terrors for me, and I was glad when daylight returned.<sup>1</sup>

After the other symptoms had disappeared, a weakness remained for at least six months, so great that after any special effort I came to expect two or three days of headache and of neuralgia-like pains in the chest.

After a horseback ride of four hours I was obliged to remain in bed for a day and a half, unable to do aught but sleep. The neuralgia-like pains would often prevent me from sleeping. They usually began at night soon after retiring, and would disappear a few hours after arising in the morning. An attack of these pains would usually last two or three days.

#### CONCLUSION

After six months all symptoms had so far disappeared that no one would have thought, to look at me, that I had been ill. (In fact, throughout my illness people remarked about my apparently good condition.) I lacked energy and endurance for walking or taking any other form of exercise, and whether owing wholly to the lack of exercise or to the disease, I have gradually increased in weight until I now weight 25 pounds (11.3 kg.) more than I ever did before. At the present time, twenty months after my illness, I feel as well as I ever did in my life, except for a very rare recurrence of the neuralgic pains previously mentioned. Neither my wife nor my child ever showed any symptoms of lethargic encephalitis.

#### SUMMARY OF HISTORY

1. *Prodromal Period* (Length of period?).—Intense nervousness and sexual excitement.

2. *Onset* (Five days).—Sudden, with nausea and vomiting; headache and symptoms of coryza; hyperactivity of mind; impotence.

3. *Remission* (Eleven days).—Earache; irritability; herpes labialis.

4. *Period of Excitement* (Seven days).—Hyperactivity of mind; impotence; insomnia; rapidity of speech; humming; setting of teeth; panting respiration; stertorous breathing; dulling of mind.

5. *Lethargic Period* (Fourteen days).—Diplopia; ceaseless muttering and movements of hands; catalepsy.

6. *Convalescent Period* (Most marked symptoms six months, total period eighteen months).—Slowness of urination with dribbling; constipation; nervousness; weakness; fear; difficult breathing; acute sense of smell; absence of sexual excitement, and impotence; loss of memory; oppression; neuralgia-like pains.

1. I slept half the day for two months.

**Cardiovascular Syphilis.**—Cardiovascular involvement is probably present to some degree in nearly all late syphilis and should be searched for. The presence of obvious signs means a fairly advanced process. The condition of the coronary arteries, difficult to predict from either examination or history, is very important. Necropsy experience has made us realize that patients who are seemingly good symptomatic risks may have such a degree of occlusion that death results under treatment from the Herxheimer reaction, or the effects of too rapid healing. Myocardial protest against arsphenamin, even in early cases, can be recognized by transient edema and a dilatation which responds to digitalis.—J. H. Stokes, *Arch. Dermat. & Syph.* 4:787 (Dec.) 1921.

## HEREDITARY HYPERTENSION AND ARTERIOSCLEROSIS

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It has long been felt that a close relationship exists between arteriosclerosis, chronic nephritis and certain degenerative changes in the heart, the terms "cardiorenal" and "cardiovascular renal" indicating the association. At the present time there is a tendency in medical thought still more completely to unify this group of conditions, and to regard them as the late stage of an essential hypertension which began many years before, the word "essential" being a cloak for our dense ignorance of the causes of elevated blood pressure.

#### REPORT OF CASES

The accompanying case histories of a brother and two sisters illustrate many features. Their father died of apoplexy at 58. Their mother of pneumonia at 74. Two other sisters are living and presumably well, whom I have not had the opportunity of examining. One sister died at 17 of organic heart disease following scarlet fever.

**CASE 1.—History.**—Mr. W. B., aged 50, superintendent of a large manufacturing corporation, who consulted me, March 30, 1918, had had scarlet fever, measles and other diseases of childhood, and pneumonia at 13 and again at 19 years. At 9 he had a sunstroke. For twenty years he had had frequent severe headaches, usually occipital, often accompanied by gastric symptoms.

He was a well-developed man, mentally alert, with tortuous temporal arteries, which stood out very prominently. The radials were diffusely thickened, firm and tortuous. The apex beat of the heart was diffuse and forcible. Moderate enlargement was present. The aortic second sound was markedly accentuated and ringing. The margins of the optic disks were slightly blurred.

July 18, 1920, as he was about to leave the factory, there was severe pain in the head, which felt as if it would burst. He became confused and walked past his own house on the way home. When examined, no new physical signs were evident; the blood pressure was 160 systolic and 80 diastolic. He remained in bed for many weeks and showed occasional brief periods of mental confusion. Sept. 2, 1918, the tonsils, which were submerged and definitely diseased, were removed. The subsequent course of his illness did not appear to be modified. Jan. 5, 1919, while starting out for a fishing trip, he had a general convulsion on the trolley car. During the following year and a half he had several similar convulsions, which were never followed by paralysis or other demonstrable physical disturbances, but always by a short period of mental confusion. On one occasion an unusually severe headache was much relieved by a lumbar puncture and the escape of clear fluid under great pressure, but this headache entirely disappeared following a free epistaxis. The spinal fluid on two occasions gave a negative Wassermann reaction. The cell count was 6, and the globulin was not increased. The blood Wassermann reaction was negative. The blood pressure showed a steadily rising tendency, reaching 210 systolic and 130 diastolic early in 1920. March 11, the nonprotein nitrogen of the blood was 46 mg. and the sugar, 185 mg. The specific gravity of the urine ranged from 1.020 to 1.025. There was usually no albumin and only an occasional hyaline cast. In July, 1920, while visiting a neighboring village, he had a sudden apoplexy with hemiplegia, became profoundly unconscious, and died in two days at the age of 52 years.

**Summary.**—In a case of hypertensive cardiovascular disease, the heart and kidneys functioned well, but there was apparently generalized arteriosclerosis with marked affection of the cerebral vessels terminating in apoplexy.



**CASE 2.—History.**—Miss C. B., aged 57, a milliner, who has been under observation for five years, has been unable to do more than light work because of marked asthenia and has had to take several rest cures in bed of many weeks' duration. At 13 years she had typhoid fever. She has had frequent acute grippal infections of the upper respiratory tract. Several abscessed teeth, as well as small degenerated tonsils, have been removed without noticeable effect on her symptoms. The systolic pressure has varied from 130 to 205, and the diastolic from 70 to 120. The last reading was 175 systolic and 100 diastolic. She is of average size and weight; her color, sallow. The palpable arteries are not thickened. The heart shows evidence of slight hypertrophy with the presence of soft mitral and aortic systolic murmurs and an accentuated aortic second sound. Slight edema over the tibiae is noted. The phenolsulphonephthalein test in 1917 was 60 per cent. for two hours. The nonprotein nitrogen, which was 61 mg. in 1917, slowly fell under restriction of protein in the diet to 33 mg. in February, 1921. At that time the blood sugar was 133 mg. and the Wassermann reaction negative. The two-hour renal test showed a variation in specific gravity from 1.011 to 1.025, and a night urine of 525 c.c. Dr. F. W. Marlow found bright dots in the retina which he considered an indication of arterial or renal disease.

**Summary.**—This patient presents no demonstrable evidence of arteriosclerosis save in the retina and aorta. Kidney function is fairly good, but the heart shows signs of early functional impairment. Hypertension has been observed for five years. If the heart does not give way and the patient lives sufficiently long, she will probably develop renal insufficiency.

**CASE 3.—History.**—Miss G. B., a high school teacher, aged 44, who has been under observation since November, 1915, had an appendectomy performed in 1907 by Dr. Nathan Jacobson for chronic indigestion, which was entirely relieved. She has frequent acute infections of the upper respiratory tract, and has had tonsillitis several times. Diseased tonsils were removed in July, 1916. She has had frequent attacks of urticaria since a child. The systolic pressure had varied from 150 to 195, and the diastolic from 80 to 110. The urine has remained constantly normal. A two-hour renal test, May 3, 1921, showed a variation in specific gravity from 1.014 to 1.022 and a night urine of 410 c.c. The blood sugar was 147 mg., nonprotein nitrogen 29 mg.

Examined, April 27, 1921, the patient was poorly developed but active, and weighed 101 pounds (45.8 kg.). A small goiter was present. The heart apex was diffuse and forcible in the fifth interspace 1 cm. inside the nipple line. There was evidence of slight cardiac hypertrophy. The first mitral sound was booming and impure. There was a faint aortic systolic murmur. The aortic and pulmonic second sounds were both accentuated. The radials were tortuous and thickened. Roentgenograms of the teeth disclosed four apical abscesses. There was slight congestion of the optic disks.

**Summary.**—This was an early case of hypertensive cardiovascular disease with good compensation.

#### COMMENT

The occurrence of these three cases in a family whose father died of apoplexy at 58 suggests a strong hereditary influence. When Oliver Wendell Holmes was asked how one might live to 70 years, he replied that a man should pick his ancestors 100 years before he was born. Numerous writers have emphasized the important part which heredity plays in determining vascular disease. Osler's<sup>1</sup> references to the quality of tubing with which an individual is endowed are well known. Williamson<sup>2</sup> suggests that the difference between good and bad arteries is like that between a well tempered spring and one of inferior material. Warfield<sup>3</sup> says that we may even speak of con-

genital arteriosclerosis in that our parents determine the character of the tissues with which we start in life. Ringer<sup>4</sup> quotes Stockard as saying that every person dies from the disease with which he is born, and that during the period of differentiation in embryonic life the organ which is the weak link in the chain is marked out. Even sound vessels may degenerate early if subjected to unusual abuse, while those who are unfortunate enough to commence life with a poor quality of tubing may, by the exercise of unusual care, have their vessels endure for the usual length of time.

Essential hypertension in its early stages may sometimes be entirely relieved by the removal of infectious or toxic influences or by changes in manner of living. After organic changes are definitely established, much can still be done to relieve symptoms and to prolong life. In treating a condition which may last for more than thirty years, when the patient often outlives his physician, therapeutic extremes must be avoided. No convincing evidence has ever been brought forward to show that red meats contain more extractives or are more harmful than white meats. It is, therefore, unnecessary to confine the patient to a monotonous diet of white meats. Although an excess of meat is undoubtedly harmful, too great a restriction of total proteins cannot be imposed without impairing the patient's strength and nutrition. Except for shorter periods of time, 1 gram of protein per kilogram of body weight is a fair average to maintain.

#### CONCLUSIONS

1. Arteriosclerosis is largely influenced in its occurrence and severity by the quality of vital tubing which the individual possesses.

2. Cardiovascular renal disease is usually a unified complex, the first symptom of which is hypertension.

705 East Genesee Street.

#### DIFFERENTIAL CENTRIFUGALIZATION

##### A METHOD FOR THE STUDY OF FILTRABLE VIRUSES, AS APPLIED TO VACCINIA\*

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AND

ELLA HUTZLER OPPENHEIMER, A.B.

BALTIMORE

It is difficult to recognize with certainty, under the microscope, the specific infective agent in vaccinia; but since it is present and alive in commercial vaccine lymph, it seemed possible to learn one of its fundamental characteristics, namely, its specific gravity.

Dr. Huntoon of the Mulford Laboratories kindly furnished us with a generous quantity of lymph, which is a viscid turbid fluid containing 2.34 per cent. of glycerin. The specific gravity of this original lymph is 1.1638.

The determinations of the specific gravity in all cases were made by weighing 1 c.c. of the fluid in a small and very narrow test tube accurately calibrated to hold just 1 c.c. up to a mark scratched on the glass.

The original lymph was centrifugalized at high speed for an hour in such a test tube, and separated into a solid mass of sediment, a thick turbid layer and a superficial less turbid layer. It was agreed always to inoculate the top layer on the cornea of the right eye,

1. Osler, William: Modern Medicine, Ed. 1, 4: 429, 1908.

2. Williamson, C. S., in Forchheimer's Therapeutics of Internal Diseases 3: 753.

3. Warfield, L. M.: Arteriosclerosis, St. Louis, C. V. Mosby Company, 1915.

4. Ringer, A. I.: Am. J. M. Sc. 161: 798 (June) 1921.

\* From the Department of Pathology, Johns Hopkins University.



and the bottom layer (taken in this instance just above the sediment) into the left eye. The cornea of the rabbit was barely visibly scratched at the upper conjunctival margin with a keen razor.

In each case a typical vaccine lesion with ulceration appeared in the right eye, while the left remained unaffected.

The top layer was then taken off in a pipet and transferred to another calibrated test tube which was filled up to the mark with Locke's solution. The specific gravity of this mixture at 24 C. was 0.99. After centrifugalization and inoculation as before, all the right eyes were unaffected and all the left eyes "took." In other words, the specific living infective agent was now found at the bottom of the tube. Its specific gravity, therefore, lies between 0.99 and 1.638.

A series of flasks was prepared with mixtures of glycerin and Locke's solution varying in specific gravity from 1.0 to 1.6, and with these suspending fluids the specific gravity of the virus itself was approached from both sides.

Each mixture was weighed in the calibrated test tube, and the specific gravity of the final mixture thus ascertained. Then after centrifugalization the top layer was inoculated into the right eyes and the bottom layer into the left. In this way it was quickly found that the virus floats in a suspending fluid of specific gravity 1.14, while it sinks in a suspending fluid of specific gravity 1.11. Its own specific gravity is probably about 1.12 or 1.13.

To purify it, therefore, it seems best to wash it and centrifugalize it in a suspending fluid just heavier than itself, for thereby a maximal removal of contaminating material will be attained.

When this was completed, the examination of a drop of the virulent top layer under the microscope with dark field illumination disclosed myriads of minute granules, very much smaller than streptococci or staphylococci. These shine dully and show a slight, irregular motion which is probably brownian movement. They occur singly or in small groups, or sometimes in tiny beaded chains. These impress one as about one-tenth the size of a chain of streptococci with the same number of elements. All the particles in this layer are very nearly uniform in appearance, and differ in this respect from the heterogeneous particles found in the minute amount of sediment in the ineffective bottom layer. Those vary in size and shape, and many are very bright and refractive.

The granules in the top layer can be seen under the ordinary microscope, and when they are clumped together can even be seen easily enough with the low power. There are enough to give a slight turbidity to the fluid. They stain faintly with Löffler's methylene blue, are gram negative, do not stain with neutral red or trypan blue, stain blue or red with Wright's stain, and take a fairly deep stain with carbolfuchsin.

With the immune serums at present available, we have not succeeded in causing them to agglutinate; but if this can be done in later experiments, it should have some weight in showing their relation to the disease. It is even more important to be able to cause them to multiply in culture in connection with growing epithelium (Lambert and Steinhardt), and to observe clearly their multiplication.

These granules are apparently identical with those seen in tissues and smears from vaccinia and smallpox by Prowazek, Paschen, Hallenberger and others. The method of isolation which we have described affords so good an opportunity for their further study that we

cannot properly make a statement as to their etiologic relation until that study has been completed.

It is especially the method of differential centrifugalization with the use of suspending fluids of different specific gravities which we wish to emphasize. This method makes it possible to isolate and concentrate in suspension the infective agent of vaccinia, which can be contaminated only with other materials of the same specific gravity. It may afford a procedure for the purification of vaccine lymph from bacterial and other contamination, and lastly, but most important, it seems to be a method applicable to the study of a long series of diseases in which the infective agent is as yet unknown or very difficult of isolation. Smallpox, chickenpox, measles, scarlet fever, influenza, dengue, typhus fever, rinderpest, rabies, common colds, epidemic (lethargic) encephalitis and a host of other less common conditions occur to one at once as promising a possibility of approach from this angle. Even poliomyelitis, well as it has been studied, might yield new information through the application of a method which may permit the isolation and concentration of the virus. Because it is easily transferred experimentally to animals, we hope to work in the same way with rabies.

## FAMILIAL BLADDER ATONY

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Atony of the urinary bladder is a common clinical acquaintance. The acute form is often seen following surgical procedures, especially those involving the pelvic region. Chronic cases are conveniently divided into those which follow mechanical obstruction to the urinary outflow and those which accompany spinal cord disease. There is a third, but very much less usual condition of bladder atony with retention, dribbling and varying amounts of residual urine in which no obstruction exists and no spinal cord disease can be found. Walker,<sup>1</sup> in 1910, reported a series of twelve such cases and offered as explanation a lesion in the hypogastric or hemorrhoidal plexus, producing either detrusor weakness or sphincter hypertonicity.

Other authors, among them Shattock,<sup>2</sup> Williams,<sup>3</sup> Rayner,<sup>4</sup> Casper,<sup>5</sup> Vassalo<sup>6</sup> and Duer,<sup>7</sup> have described individual instances of these conditions. Vassalo's patient, a native of Uganda, when first seen had a residual of 2½ pints (1,183 c.c.) but recovered bladder function under treatment. Casper's patient had a small diverticulum, Shattock described ureteral dilatation and double hydronephrosis. Rayner's case was one of dystocia due to an enormous urinary bladder in the fetus; necropsy showed no obstruction. He suggests that the difficulty may have been due to disturbances of sphincter detrusor balance or hyposensibility of the bladder mucosa.

The occurrence of several individuals with bladder atony of this type in one family seems not to have been reported. A family group in which bladder trouble is considered, by the male members at least, a part of the common heritage is herewith described with such completeness as is possible. The members are widely scat-

1. Walker: *Ann. Surg.*, November, 1910, p. 577.

2. Shattock: *Proc. Roy. Soc. Med.* 2: 88, 1908-1909.

3. Williams: *Tr. Path. Soc.* 39: 152, 1888.

4. Rayner: *Brit. M. J.* 2: 1384, 1892.

5. Casper: *Berl. klin. Wchnschr.*, March 7, 1910, p. 425.

6. Vassalo: *Lancet* 2: 599 (Sept. 18) 1920.

7. Duer: *Indian M. Gaz.* 37: 394, 1902.



tered over two continents, and more exact details seem unattainable.

CASE 1.—A man, aged 38, had nocturnal frequency, hesitancy, and straining, though ardor urinae was present. The history was negative for syphilis; there had been two or three attacks of gonorrhea, one with epididymitis. Physical examination detected nothing remarkable in the heart, lungs or abdomen. There was no evidence of any nervous disease. The reflexes were all present; stasis was good; no motor or sensory defects were made out; the external genitalia were normal. The patient voided 300 c.c., after which a large, soft rubber catheter was passed with ease and 300 c.c. more of turbid, strongly ammoniacal urine, containing numerous pus cells, but no casts, was withdrawn. Nine days later the patient voided 400 c.c., and the catheter withdrew 450 c.c.; the urethra was not elongated, nor was the prostate enlarged. Cystoscopy revealed contracture of the vesical neck; just above and behind the right ureteral orifice was the mouth of a diverticulum; there were no sulci or thickening between the shaft of the instrument in the urethra and the finger in the rectum. The diagnosis was: contracture of the vesical neck; vesical diverticulum. The endoscopic report confirmed the contracture of the internal sphincter; the verumontanum was granular and red. At the first cystoscopy it was thought that there might be a very slight median bar present; this was not confirmed. The scrotal and lower spinal reflexes were possibly sluggish. The blood Wassermann examination was negative. The spinal fluid cell count was 3; the Wassermann examination negative. This patient was advised to catheterize himself twice a day and follow with protargol instillations.

During the discussion of the nature of this difficulty the patient volunteered the information that his two younger brothers were both using catheters under the advice of a urologist, and also that his father had had a similar difficulty. He further gathered such family data as he could get, and the result seemed interesting and suggestive, though there are many evident gaps in our knowledge. There are in three generations five who almost surely, and four more who probably belong in this group described by Walker:

CASE 1.—Reported above

CASE 2.—Brother of Patient 1. The difficulty began at about 30; patient under care of urologist, who has advised regular use of catheter.

CASE 3.—Brother of Patients 1 and 2. The trouble began at about 35; he catheterizes himself under the advice of a urologist. This patient has had syphilis, but the spinal fluid is negative.

CASE 4.—A woman, first cousin to Patients 1, 2 and 3, had acute atony requiring catheterization for some months after childbirth, and recovered under treatment. This case resembles those described by Relihan and Simon,<sup>8</sup> and Duer.<sup>7</sup>

CASE 5.—A man, first cousin to Patients 1, 2, 3 and 4, died at about 40, but was catheterized on competent advice some years before.

CASE 6.—The father of Patients 1, 2 and 3 catheterized himself for many years. Patient 1 is sure that his father, though a relatively young man, had never been advised to have an operation.

CASE 7.—Brother of Patient 6, father of Patient 4, had bladder trouble, difficulty with emptying, the exact cause of which was not known, and was catheterized.

CASE 8.—Brother of Patients 6 and 7, father of Patient 5, had difficulty with bladder emptying, and was catheterized.

CASE 9.—Father of Patients 6, 7 and 8, grandfather of Patients 1, 2, 3, 4 and 5, had bladder trouble of unknown nature.

The accompanying chart sets forth in more compact form the family relationship.

Capital National Bank Building.

## SURGICAL TREATMENT OF EXTENSIVE BASAL CELL CARCINOMA\*

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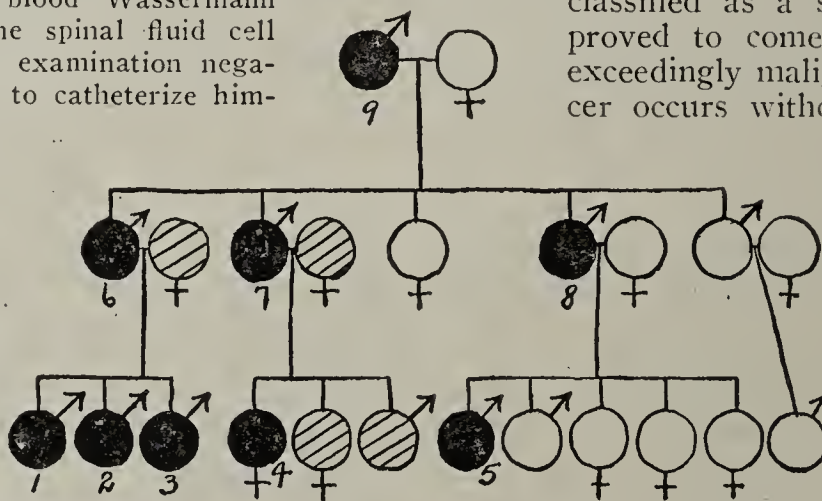
The pathologic laboratory has been of great assistance in the surgical treatment of tumors and particularly of cancers of the skin. The two general divisions of cancer of the skin are the spinous cell type (Fig. 1) and the basal cell type (Figs. 2 and 3). Each of these is susceptible of many subdivisions.

There is an occasional form of cancer of the skin known as the melanocarcinoma, which was formerly classified as a sarcoma but which has been proved to come from the epidermis. It is exceedingly malignant. Occasionally this cancer occurs without pigment, or with only a trace of pigment, but it follows the same general course as when abundant pigment is present. This cancer springs, apparently, from the deep layers of the epidermis, and in some instances resembles more closely in histologic structure basal cell cancer than spinous cell, though its clinical course is quite different.

Besides these, there are the rarer forms of cancer of the skin, originating from the sebaceous glands or the sweat glands. They are adenomatous in structure.

The division of spinous cell cancer of the skin into four grades by A. C. Broders of the Mayo Clinic has been very helpful to the surgeon. These grades are according to the degrees of differentiation of the cells. The type in which the "pearls" largely predominate, showing a marked tendency of the squamous cells to go through their full life cycle, including the stage of cornification, is the least malignant, and requires the simplest operation. When it occurs on the face, a limited excision, without a dissection of the neck, is usually sufficient for a cure. This kind of cancer is classed as "Grade one." The second grade has fewer "pearls"; the third has very few, and the fourth grade, which is the most malignant, has none at all. The fourth grade of this cancer is rarely cured, even by the most extensive operation. Operation for the second and third grades must be much more extensive than for the first grade, as the growth is more rapid, and the tendency toward metastases is much greater.

Basal cell cancer, or "rodent ulcer" as it is sometimes called, does not form "pearls." Its cells may vary greatly in size and shape from a slender spindle cell to a round cell, and occasionally may assume what appears



Family relationship: full dots, bladder trouble; shaded dots, no bladder trouble; open dots, bladder history unknown.

8. Relihan, H. J., and Simon, J.: Report of a Case of Paralysis of the Bladder. J. A. M. A. 56: 743 (March 11) 1911.

\* Read before the Southern Surgical Association, Pinehurst, N. C., Dec. 13, 1921.



to be an adenomatous structure (Figs. 2 and 3). This occasional tendency to an adenomatous structure in basal cell carcinoma may be due to the fact that embryologically the cells of the basal layer of the epidermis are more closely related to the sweat glands and the sebaceous glands than are cells of the more superficial layers.

A basal cell cancer is usually less malignant than the spinous cell cancer, particularly if the first grade is excluded. After it has become extensive, however, it is exceedingly difficult to cure. A very interesting fact about basal cell cancer is that it does not metastasize, but extends only by continuity or contiguity of tissue. This is impressive when we recall that a basal cell cancer may occupy the same region of the face as the spinous cell often occupies, and consequently has access to the same lymphatics. The cells are usually smaller than the spinous cells, and should gain access to the lymphatics just as easily as the spinous cells do. It seems most probable that the basal cells are taken up by the lymphatics, but do not find favorable soil, and consequently perish; while the cells of the more malignant grades of spinous cell cancer can grow in the lymph glands and channels.

It may be assumed, then, that there is something in tissues at a distance from the basal cell cancer that causes an insuperable resistance to the cells of this neoplasm. This is not true of the spinous cell cancer, particularly of the more malignant grades, which may flourish wherever they are deposited by the lymph channels.

A crude illustration may show this biologic difference: If there was a field containing dry broom-sedge, and a fire was started in the middle of it, not only would the fire burn from this point, but if there was carried a burning brand to any other part of the field, it would also burn there. This may be likened to the spinous cell type of cancer, in which there is no resistance to destruction by fire, even at a point distant from the original fire. If, however, the field of broom-sedge was damp, and a fire was started in the middle with a sufficient amount of inflammable material to dry the broom-sedge in its immediate vicinity, the fire would extend as far as the heat had dried the broom-sedge. If a burning brand should be carried into other portions of the wet field, it would not start a fire, because the dampness would render the broom-sedge uninflammable, unless the fire was sufficiently large to dry the broom-sedge first. This might be compared to the basal cell type of cancer.

It appears to be perfectly useless to treat an extensive basal cell cancer by operation with a knife. The tissue in the immediate neighborhood of the cancer has had its natural resistance broken down, doubtless by some product of metabolism formed during the growth of the cancer. The cancerous cells are simply implanted on the new raw surface, whose resistance

against these cells has been destroyed, and they grow rapidly. In practically all cases that have become extensive, the roentgen ray or radium has been tried and has failed, so but little can be expected from this source.

The principles that appear to underlie the surgical treatment of extensive basal cell cancers demand, first of all, that the surface of the cancer be destroyed and sealed by cautery so that transplantation of cancer cells will be avoided; secondly, that the excision be done as far as possible with the electric cautery and the raw surface be further cauterized after the excision has been completed, and, thirdly, that the raw surface be covered as soon as possible by tissue from a distance, where the normal resistance to cells from a basal cell cancer has not been destroyed.

#### REPORT OF CASES

The application of these principles can best be elaborated by a description of two cases of very extensive basal cell cancer of the face in which I have operated:

CASE 1.—G. K. P., a man, aged 49, white, a lawyer, was admitted to St. Elizabeth's Hospital, Richmond, May 1, 1920. The Wassermann reaction was negative. The patient had had considerable albumin in the urine for many years. He had also suffered occasionally from "stomach trouble." There were a few casts, but the patient's nitrogen blood urea on admission to the hospital showed renal function about normal. About fifteen years ago a small mole on the patient's left upper lip was injured by a barber while combing his mustache. A small ulcer formed, which for two years alternately healed and broke down. He was operated on by a local

surgeon, and the ulcer healed, but in a few days broke down again. The patient then went to an advertising cancer-paste doctor, who applied a paste, but the disease recurred. He had been operated on by a number of surgeons, and had tried many different remedies, ranging from the advertising cancer cures to the application of radium in large quantities by skilled hands. The growth would sometimes be retarded for a while, and would remain apparently cured for several months, but eventually broke down again.

After a thorough examination, and particularly after a careful test of the kidney function by blood chemistry and by phenolsulphonephthalein, it was thought that he could take ether satisfactorily (Fig. 4). May 6, after the administration of ether in the usual manner, a transverse incision was made in the upper part of the trachea, and a tube inserted through which the ether was then administered. The mouth was opened, and the pharynx thoroughly packed with moist gauze. The cancer, which had extended so that it had destroyed the upper lip, part of the nose, and most of the anterior part of the alveolar process, was well cauterized with the Percy cautery. The mass of tissue was then excised with a sharp electric cautery down to the bone, and the bone was divided with chisel, rongeur forceps and electric rotary saw. The raw surface was immediately cauterized with the Percy cautery, and packed with iodoform gauze. The wound in the trachea, which was transverse, was closed, and a flap was outlined on the left side, with its base near



Fig. 1.—Reproduction, slightly reduced, of a photomicrograph,  $\times 125$ , of a spinous cell type of squamous cancer, showing definite "pearls," which do not occur in basal cell cancer.



the lower jaw and the body of the flap over the left pectoral region. The pedicle of the flap was dissected up, and its edges were brought together with a continuous suture of catgut, according to the method of Gillies, making a cord of the pedicle. The margins of the skin beneath the pedicle were undermined and united.

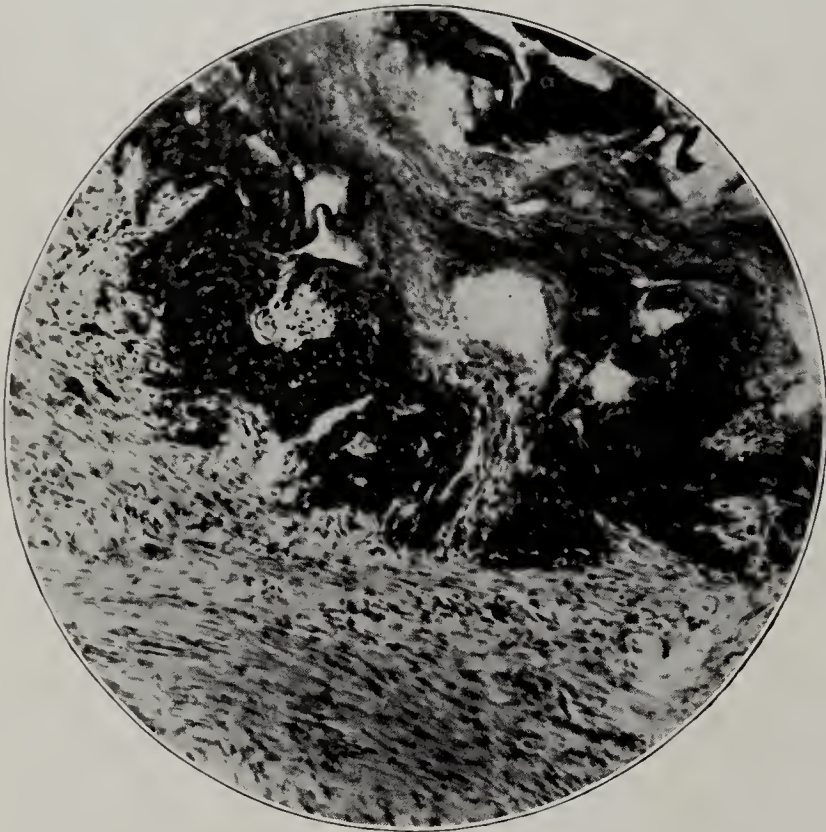


Fig. 2 (Case 1).—Basal cell cancer. The upper border shows the results of the cauterization, which was done before the excision. In spite of a thorough cauterization, there were areas in which the typical cells of a basal cell cancer were found. Slightly reduced from a photomicrograph,  $\times 155$ .

Seven days later, under local anesthesia, the upper part of the flap was dissected free, and two Thiersch skin grafts from the left thigh were applied. Eight days later, still more of the graft was freed, and Thiersch grafts were applied, and the same procedure was repeated eleven days later (Figs. 5 and 2).

June 9, thirty-five days after the original operation, the flap was completely severed, and the remaining raw surface on the flap was covered with Thiersch grafts. July 2, the upper border of the flap was denuded, dissecting back the epithelial surface on both sides, and after further denuding the right side of the defect in the face, the flap was applied to the face. July 7, the anterior surface of the hard palate was denuded, and corresponding denudation was done on the inner surface of the flap, on which Thiersch grafts had been applied. The margins of the wound on the face were freely denuded and dissected up, and the flap was applied carefully to all of the old area where the cancer had been excised (Fig. 6).

After a week the pedicle of the flap was compressed by soft-bladed forceps for about a half hour each day, and on August 4 the pedicle was completely severed and the base of the flap sutured into position. The pedicle was unfolded, and used to cover as much of the raw surface on the neck and chest as possible. The graft took satisfactorily.

Jan. 8 and Feb. 23, 1921, some plastic work was done on the flap in order to improve the cosmetic appearance and to cover an area from which the flap had retracted. The patient was advised to have a dentist fit him with a plate which would supply him with teeth for the upper jaw. There was a good molar tooth on each side of the upper jaw, and it was quite possible to use these as points of fixation. However, while the dentist was fitting the plate it slipped, and lodged for a short time in the patient's pharynx. This experience was so disagreeable that he has never been induced to have any further dental work done; without which, of course, the cosmetic results cannot be greatly improved.

The patient suffered a sudden severe abdominal pain, April 4, 1921, for which he was admitted to St. Elizabeth's Hospital.

A careful examination by Dr. Warren T. Vaughan, and roentgenoscopy, revealed no lesion in the abdomen, but a marked dilatation of the thoracic aorta. The pain seemed to be anginal. After a few days it gradually disappeared, and the patient's general condition improved. When seen, recently, three weeks ago, he was in good general condition, and there was no sign of any recurrence of the cancer, more than eighteen months since the operation.

CASE 2.—Mrs. D. W., aged 55, who had mitral stenosis, was admitted to St. Elizabeth's Hospital, Sept. 27, 1920. About twenty years ago there was a small pimple on the left side of the nose, which bled profusely after she had scratched it. Various salves were applied without success. It was treated with the roentgen ray, which relieved the patient for several years. A small ulcer then formed between the eyes on the forehead. This healed, and later the tip of the nose was affected in a similar way. The patient had radium applied in Baltimore on four different occasions, the last one being Aug. 26, 1920. The cancer involved the right cheek and right upper lip and nose.

September 28, the trachea was opened transversely and the anesthetic was continued through the tracheal tube, the procedure being similar to that described in the previous case. The pharynx was then packed with moist gauze, and the cancerous area was thoroughly cooked with the Percy cautery. The margins of the cancer were removed with a sharp electric cautery, and the bone with rongeur forceps. A flap was outlined on the right side of the neck and chest, with its base near the right jaw. The pedicle of this flap was treated as in the previous case. A flap was also outlined on the forehead, with the base of the pedicle over the right temporal region, and the lower margin of the flap over the right eye. The packing was removed from the pharynx and the trachea closed.

At intervals of several days the flaps were gradually dissected up under local anesthesia, and were finally transplanted into the region of the defect. November 19, a small spot of recurrence on the mucosa of the left upper lip was removed with the electric cautery. December 17, the pedicle of the flap from the neck was divided under local anesthesia. Jan.

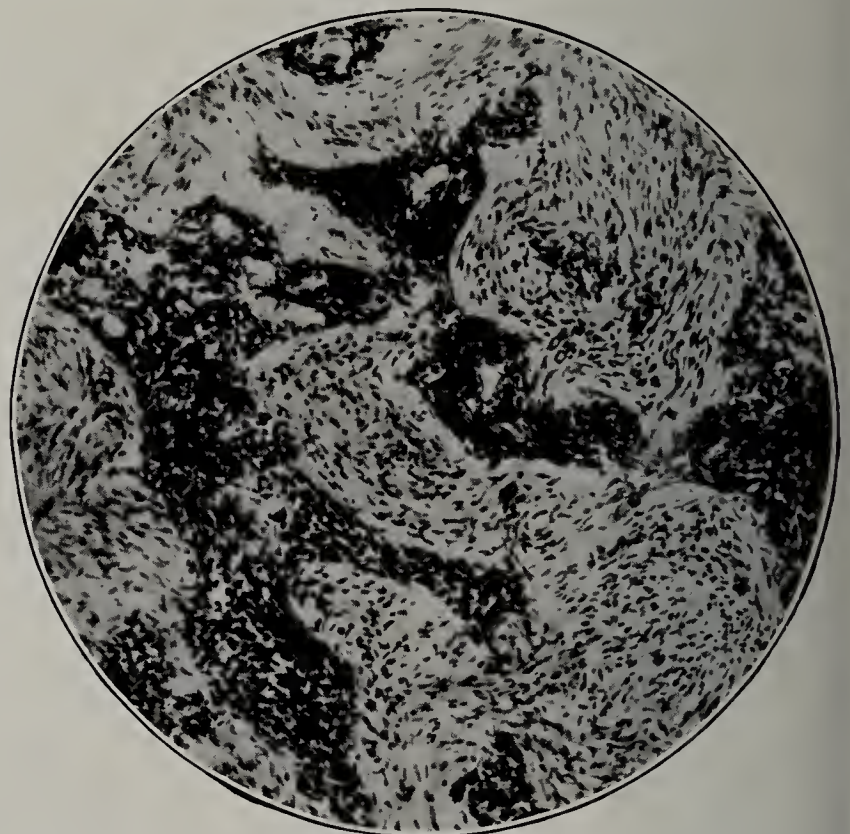


Fig. 3 (Case 2).—Basal cell cancer. This area is from the mucous membrane. The cells penetrated rather deeply along the margin of the mucosa, but apparently never more than about one-quarter inch (6 mm.) from the edge of the ulcerated area. The most recent recurrence beneath the lower eyelid shows the basal cells rather round in shape. There is some tendency toward an adenomatous-like arrangement in certain areas of this photomicrograph. Slightly reduced from a photomicrograph,  $\times 155$ .

3, 1921, the pedicle of the flap from the forehead was divided. On account of the location of the disease, it was impossible to get the raw surface of the flap fitted to all the raw surface



left by excision of the cancer. This was due to the fact that the right antrum of Highmore was widely opened, and was filled by a flap with the epithelial surface within. An effort was made to denude the flap and apply it where the cancer was excised. On the left side of the face it was impossible to make permanent contact at all points because of tension, and at the floor of the antrum the raw surface could not be covered by the raw surface of the flap.

Feb. 4 and March 3, 1921, plastic operations were done to cover the defect over the bridge of the nose from which the flap had pulled loose. April 20, there was a recurrence of basal cell cancer in the inner portion of the wound in the hard palate. At this point the skin surface of the flap from the neck rested, and no raw surface from the flap. This area of recurrence was about one-half inch (1.3 cm.) in length, and was excised under local anesthesia with the electric cautery, some of the bone being also removed. A subflap was cut from the main flap that had been turned in from the neck, and was sutured to this defect in the palate, after a small flap had been dissected from the rest of the hard palate in order to make the union more secure.

July 23, there was a recurrence on the lower border of the anterior portion of the vomer and along the left edge of the

#### COMMENT

In every instance in which there was a recurrence, it was at a point where the raw surface of the transplanted flap had not grown. Where the raw surface of a transplanted flap had become attached, even for a period as long as a week, and had subsequently pulled away, there was no recurrence. If the flap pulled away within two or three days, recurrence was occasionally noted in this area. In no single instance, however, has there been recurrence where the raw surface of the transplanted flap had grown to the raw surface left by the excision of the ulcer. On account of the extensive and unusual location of the cancer, it was impossible to apply the raw surface of a flap

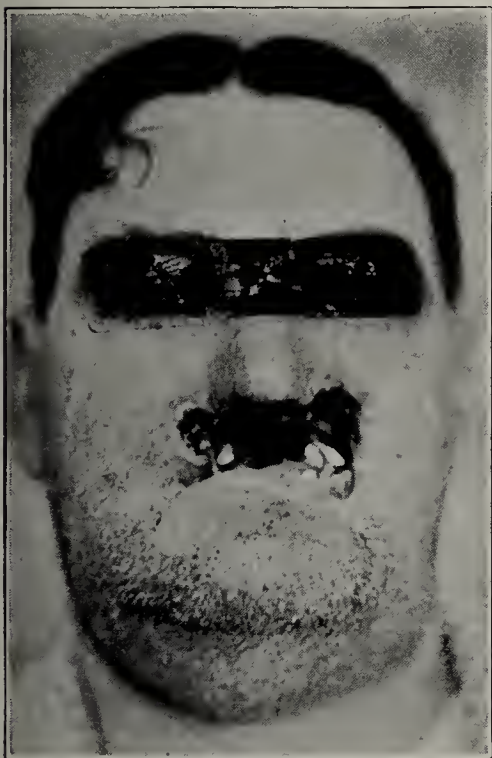


Fig. 4 (Case 1).—Basal cell cancer before operation.

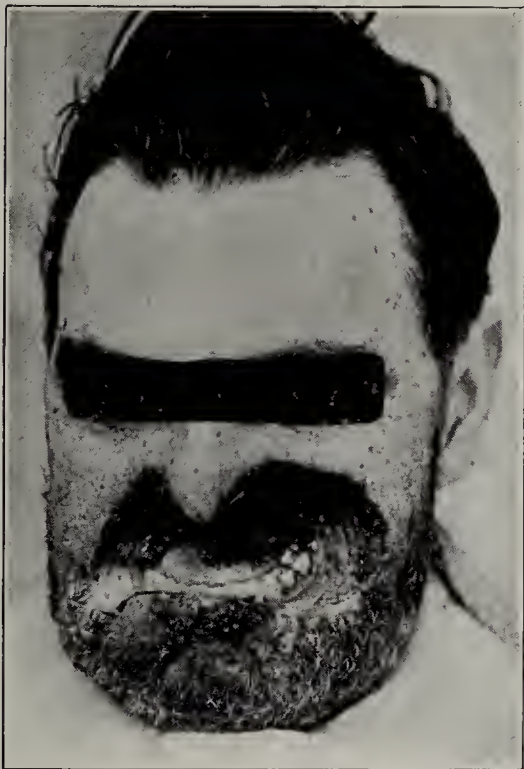


Fig. 5 (Case 1).—Condition of the mouth sixteen days after operation. The slough had not yet fully separated. The flap in the neck had been outlined, but does not show here.

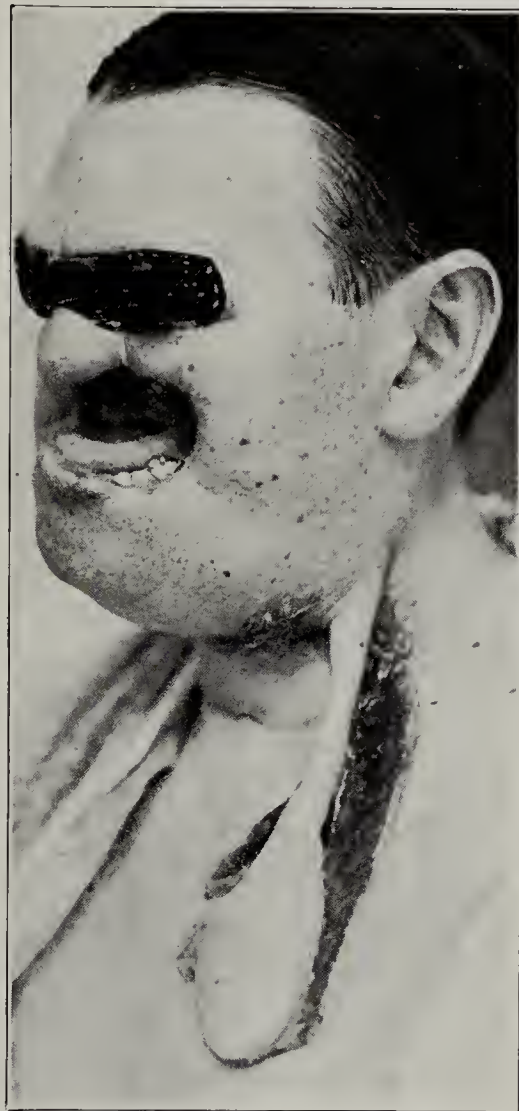


Fig. 6 (Case 1).—About a month later. The slough had separated, and the wound had partially healed. The flap in the neck had been gradually dissected free, and its under surface is covered with Thiersch grafts. It is ready to be transplanted to the region of the upper lip, according to the method described in the text.

upper jaw. The areas were thoroughly cauterized, the bone and part of the septum with the vomer were removed with rongeur forceps, and the raw surface was again cauterized. A flap was made from the frontal flap that had been turned into the defect, and was sutured over this raw surface. The sutures cut loose, however, and the flap soon retracted.

September 24, there was a small point of recurrence along the anterior part of the stump of the alveolar process on the right side, and a small suspicious spot on the upper left side. These points were cauterized with the electric cautery, removed, and again cauterized. It seemed impossible to cover the point at the stump of the right alveolar process with tissue from the flap, so the nearest portion of the flap was cauterized, with the hope of making a raw surface that would become adherent.

Instead, however, of becoming adherent, it retracted further, and in November, 1921, there was a recurrence again at this place and also in a small mass beneath the lower right eyelid. Both of these recurrences were removed with cautery in the usual manner, November 28. A plastic flap was arranged from the original flap by dividing the original flap vertically into two pieces and cutting it so the raw surface would cover the region where these recurrences were. The patient is still under observation.

in a satisfactory manner to all of the raw surface left by excision of the cancer at one operation without making the incisions of such a character as would have jeopardized the nutrition of the flap. These facts concerning the points of recurrence in this case seem to emphasize most strongly the apparent inhibitive power of tissue taken at a distance from a basal cell cancer over the growth of cells from this neoplasm. Though there have been numerous recurrences, the observed facts here tend even more strongly to confirm this principle than in the preceding case, in which there was no recurrence.

It seems logical to conclude, therefore, that in extensive basal cell cancers, in addition to cauterization and excision with a cautery, an important principle is to apply as soon as possible, to the raw surface from which the cancer was excised, the raw surface of a pedunculated flap transplanted from a distance. It was formerly thought that plastic operations for defects



caused by the extirpation of cancer should not be done until it had been determined, after the lapse of months or of years, that there would probably be no recurrence. The idea seems to have prevailed that it would be useless to transplant a flap when cancer might recur beneath it. With basal cell cancer, however, this practice appears to be erroneous, and a flap from a distance should be applied as soon as possible after the excision of the cancer, for the flap seems to add an additional obstacle to the growth of the cancer by interposing its own natural resistance to the cancer cells.

## A SACRAL TERATOMA CONTAINING AN EMBRYONIC SCAPULA

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The sacrococcygeal region is frequently the site of congenital tumors. In the embryologic development of that part of the body, remnants of such structures as the neurenteric canal, the postanal gut, the procudeal membrane, and the coccygeal remains of the neural canal may persist. These fetal formations, which normally undergo involutions, may be the basis of certain tumors. Also, the lower portion of the spine is frequently the site of developmental defects of the vertebrae giving rise to spina bifida and spina bifida occulta. These defects may be accompanied by meningoceles from protrusions of the spinal cord or its membranes, or, in rare cases, by herniations of such abdominal organs as the bowel or bladder.

Congenital tumors in the sacral region may grow anterior to the spine, pushing forward the rectum and bladder and appearing in the pelvis or about the perineum. Pressure against the genital organs or neighboring muscles of the thigh may interfere with the growth and function of these structures. The size of the tumor may vary from that of an orange to a mass large enough completely to fill the pelvic cavity. Many of these presacral tumors are cystic. Wernher<sup>1</sup>



Fig. 1.—Sacrococcygeal teratoma forming pseudotail (lateral view).

regards them as congenital cystic hygromas. G. G. Davis<sup>2</sup> has described these cysts very thoroughly in an article in which he reports one of ependymal origin containing nerve elements. The cysts vary greatly in shape and may have a broad or pedunculated base.

Another group of tumors is located on the back, posterior to the spine. They are covered with skin, which may be normal but which is often very thin from stretching, or, in some cases, apparently thickened for protection. On account of the exposed position of

these tumors, the skin overlying them is frequently subjected to trauma and infection, either during labor or after birth, with resulting suppuration. The base of the tumor may be sessile; but very often it is pedunculated so that the mass hangs downward, somewhat resembling a tail. This similarity is even more pro-



Fig. 2.—Sacrococcygeal teratoma viewed from above.

nounced when one finds occasionally a tuft of hair growing from one of these caudal appendages. Many of these pseudotails are masses of fatty tissue, often containing some muscle or nerve fibers. Sometimes they are associated with a spina bifida occulta, and the tumor is attached to the bony fissure by a fibrous fatty pedicle. In the case reported in this article, the tumor was a pedunculated fatty mass; but it contained no muscle or nerve elements. Possibly it may have come from the extradural fat tissue.

### CLASSIFICATION OF CONGENITAL SACROCOCCYGEAL TUMORS

Pathologically, aside from the ordinary lipomas and lymphangiomas, congenital sacrococcygeal tumors have been classified by Ewing<sup>3</sup> as follows:

1. *Dermoids, Simple or Complex.*—There are cystic tumors derived from some of the embryonic structures mentioned above. As pilonidal cysts, they occur very frequently in the midline posteriorly. Sometimes they undergo suppurative changes and have often been mistaken for tuberculosis of the sacrum. The more complex dermoids contain teeth and nails, as well as hair and sebaceous material. Dermoids may be found along the raphé of the perineum or scrotum or in front of the sacrum.

2. *Teratoid Tumors.*—The neoplasms in this group are composed of cells derived from all three layers of the embryo. Wilms designates them as "embryoid tumors." The cells form all sorts of irregular mixtures; but there is a definite absence of any highly developed rudimentary structures. They are solid or polycystic growths and usually form anterior to the

1. Wernher, A.: *Angeborenen Kysten Hygroma*. Giessen, 1842.

2. Davis, G. G.: *Congenital Sacro-Coccygeal Cyst of Ependymal Origin*, J. A. M. A. 54: 1228 (April 16) 1910.

3. Ewing, James: *Neoplastic Diseases*, Philadelphia, W. B. Saunders Company, 1919.



sacrum. As a rule, the spinal dura is not involved and only in rare cases is the tumor attached to the bone. Tumors of this class are frequently found in the testicle or ovary.

3. *Teratomas*.—This group comprises those tumors which contain highly developed fetal structures. It embraces a series of tumors which grade up from the indefinite mixtures of the teratoid type to the double malformations included in the class of fetal implantations. The teratomas contain organs, or well developed rudiments of organs which are not related to the neighboring structures. They are usually situated posterior to the sacrum; but they may occur at the anterior position. They may be cystic or solid and very frequently exhibit both forms of structures in the same tumor. Often they are covered by periosteum or attached to the spine by a pedicle. All sorts of fragments of the body, in various stages of development, have been found in these tumors; bones, joints, organs, such as the kidney, intestine, thyroid and lungs, legs, arms and heads have been reported in the literature. In the case described herewith a well developed right scapula was found in a mass of fatty tissue. Sacral teratomas are often accompanied by a spina bifida, with associated meningocele or myelocele. In other cases, the spinal fissures may be closed so that we have the condition of spina bifida occulta with a persistence of the dural herniation. Malignant changes may take place in teratomas resulting in angiosarcomas or myxosarcomas.

4. *Fetal Implantations*.—In this class is placed the fetus in fetu. These vary from the poorly developed monsters up to such highly developed types as the Siamese twins.

The origin of sacral teratomas is not always definite. Bland Sutton<sup>4</sup> says that many of them are of monogerminal origin and occur on account of a strong ten-

especially true if the tumor is associated with a spina bifida. In the growths of bigerminal origin, the tissue in the tumor has no similarity to the neighboring organs and the neoplasm represents a suppressed fetus or twin.

For the diagnosis of these teratomas, a good roentgen-ray examination is of considerable assistance. The



Fig. 4.—Reproduction of full sized drawing of right scapula found in the sacrococcygeal teratoma.

bone in the tumor mass in our case cast a dense, heavy shadow. It was also easily palpable. Lipomas and lymphangiomas must be considered. Because of the operative dangers, a neurologic examination should be made to differentiate a teratoma from a meningocele, especially when the latter accompanies and forms a part of the teratomatous growth. The sacral location should always suggest a teratoma; but often the diagnosis will remain uncertain without a careful exploratory operation.

#### REPORT OF CASE

*History*.—A. S., a white boy, aged 5 months, was brought to the Children's Memorial Hospital, March 9, 1921. The mother stated that the child was born at full term after a normal pregnancy and labor. At the time of birth, a peculiar mass was noticed attached to the child's back. Since then, the mother had noticed no change in the size or consistency of the mass. The child seemed to be unaffected in any way by the tumor and had always been well.

*Examination*.—The baby was apparently normal except for a pedunculated tumor attached like a tail in the median line at the lumbosacral portion of the back. The tumor, about the size and shape of a pear, was covered with normal skin. It hung downward and slightly to the left. The greater part of the mass felt soft and cystic; but in the center, a hard substance about 6 cm. long was palpable. This bonelike portion was slightly movable in the soft bulk of the tumor. Irritation of the tumor did not provoke any responsive movement. The child had apparently no pain or discomfort on account of the deformity. Neurologic tests revealed no evidence of any impairment of motion or sensation in the legs or buttocks (Figs. 1 and 2).

Roentgenograms showed an irregularly shaped, dense, bone-like shadow, not attached to the spine, lying longitudinally in the center of the lighter shadow of the tumor (Fig. 3). There was no defect demonstrable in the bony outline of the vertebrae.

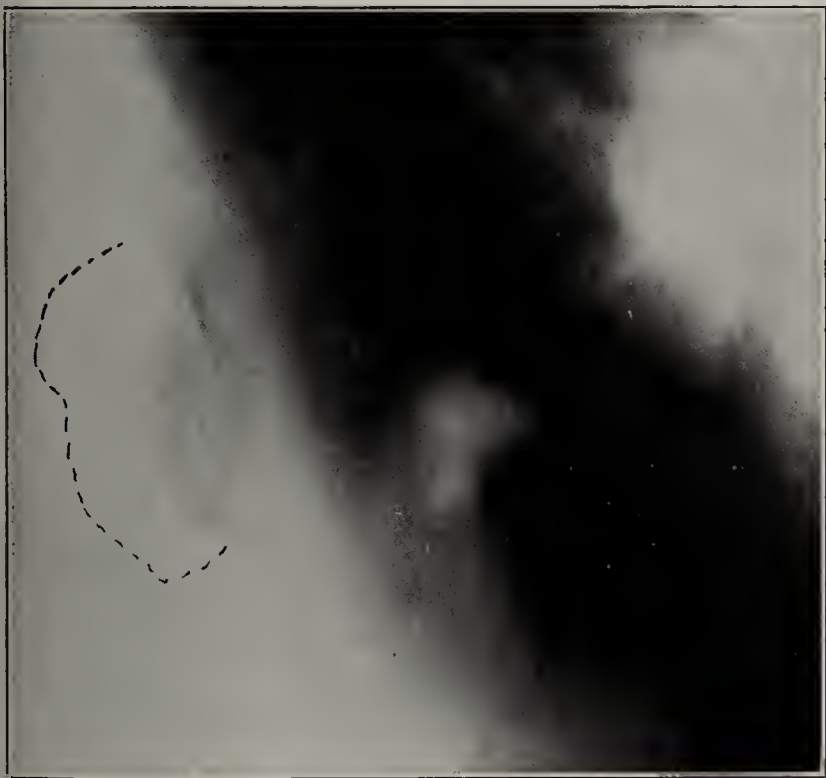


Fig. 3.—Roentgenogram showing shadow of scapula within the tumor outlined.

dency to budding in this part of the body in all animals. When the tissue or organ in the tumor is similar to that found in the region of the body in which the tumor is located, it is probably of monogerminal origin. This is

4. Bland Sutton, J.: Tumors, Innocent and Malignant, New York, Paul B. Hoeber, 1918.



*Operation.*—March 11, 1921, under ether anesthesia, an incision was made longitudinally over the tumor, and the skin covering was dissected off down to the pedicle. This was found to be a fatty fibrous stalk which emerged through an opening in the fascia, about 1 cm. in diameter, just below the spinous process of the last lumbar vertebra. The pedicle was cautiously severed; but there were no signs of nerve tissue and no escape of spinal fluid. The opening in the fascia was closed by imbrication and the skin sutured. The child made an uneventful recovery.

*Pathologic Report* (Dr. W. G. Hibbs, pathologist to the Children's Memorial Hospital).—The specimen submitted to the laboratory weighs 145 gm., and measures 9 by 6.5 by 4.3 cm. It is cylindric in general outline and consists of coarsely lobulated fat tissue. The tip of the tumor is symmetrically covered with skin, 3 mm. thick, the edge of which is sharply defined from recent surgical removal. The remaining portion of the skin was apparently dissected away to repair the wound made by removal of the pedicle. On incision longitudinally into the mass of fat tissue, a hard substance is found intimately adherent to this tissue. When this is dissected away, a well formed right scapula is disclosed, with all of the normal landmarks, except that the infraspinous and subscapular areas are generally smooth instead of being normally grooved by muscle attachments. The scapula measures 6 cm. from the tip of the acromion to the vertebrae border and 7 cm. from the tip of the median angle to that of the inferior angle. The tissue adherent to the scapula is only fat, which is confirmed by microscopic sections made from several different places.

#### COMMENT

The teratoma in this case was possibly of monogerminal origin as it occurred in a location somewhat near the scapula and was attached by a fatty pedicle to a probable closed fissure in the spine. However, it was not close enough to the scapular region definitely to rule out the possibility of a bigerminal growth. The child had two normal scapulae demonstrable in the roentgenograms and by palpation. The full sized drawing (Fig. 4) of the scapula found in the tumor was made in the pathologic laboratory of the hospital. Unfortunately, the bone itself was removed from the laboratory before a photograph of it could be made.

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### THE TREATMENT OF STRUCTURAL SCOLIOSIS AT THE MASSACHUSETTS GENERAL HOSPITAL\*

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Severe structural scoliosis is being treated at the Massachusetts General Hospital on the assumption that, with our present knowledge of the subject, scoliosis cannot be cured. We therefore direct all our attention toward improving the symmetry of the patient so that, with proper training, the muscles may become adequate to compensate for the deformity.

We rotate the pelvis and thorax on each other, so as to rearrange the parts of the thorax and to bring them nearer to the center of gravity. Thus the force of the muscular resistances is transmitted through the thorax to cause a gradual change in shape, with the help all the time of the respiratory forces. In other words, we employ the peripheral stresses resulting from the rotation treatment plus the respiratory forces, cul-

tivated beforehand by intensive training, to correct the deformity.

There is no attempt at overcorrection; for the moment we must apparently be satisfied with an "apparent cure." Even if, at the end of the course of treatment, roentgen-ray examination of the thorax reveals a spine not completely straight, we are con-



Fig. 1.—N. C., aged 14, standing and in the forward bend position. The first corrective jacket was applied one month later.

tented if we have achieved an apparently straight spine, as indicated by marking out the spinous processes on the skin, and have trained the patient to use his muscles to maintain a correct position. Invariably, the roentgen-ray examination does prove that the intercostal spaces, which are sometimes obliterated previous to treatment, are always opened wide, thereby furnishing the organs in the thorax with a more capacious housing. Of course the advantage of all this is obvious. Also, if perpendiculars drawn from the axillae to the ground both clear the hips, and the shoulders are level, so that the patient can then at least look normal, he is no longer singled out as a cripple.

Once we have the patient in this symmetrical position, it plainly becomes much less of a task for the muscles and ligaments to maintain the body in balance. The erector muscles of the spine, and in fact the accessory muscles also are then strengthened by continuous exercise, not infrequently to the point of hypertrophy of these muscles. At any rate, they are brought to the state in which, with the aid of some auxiliary support, such as a brace, they can adequately compensate for any remaining deformity, so as to allow the individual to assume the various postures required during the day's activity. No one stands absolutely erect continually. The normal person never stands at attention or with a straight spine all of the time. He shifts from one posture to another, symmetrical or asymmetrical as the case may be. But the average of these postures is one of good balance, one of symmetry. This is the state we aim at for our scoliotics, namely, the ability to average, throughout the different positions they are forced to assume during their daily activity, a mean state of symmetry. Once they have attained this power to balance themselves symmetrically, they can go about unafraid of detection of any deformity, and with a free and easy mind toward doing their duty, broadly speaking, as useful citizens.

Our treatment for scoliosis is not designed to be a hindrance to the fulfilment of their duties, for our patients are not "hospitalized." They are not kept, as

\* Severe cases due to anterior poliomyelitis are not included in this discussion. Once their symmetry has been improved, a spinal fusion operation is the logical procedure, as in those cases there is no complete set of muscular supports to rely on for compensation of the deformity.



is so often the case, for a long period of time out of school, away from their families and friends, in a hospital, in an attempt at correcting their deformity, only to be thrown back on the world at a later date, unfitted by that time for their surroundings, and, worst of all, often unrelieved of their deformity. We do not take the patient out of his peculiar routine of life. We treat him in the outpatient department with others of his own age and standing, and at most he is only about three hours a week in the hospital. The rest of the time he is in school with others of his class and he lives at home. There he can get the training and stimulation that he cannot in a hospital; and it seems incontrovertible that it is the inherent right of every child, whether or not he has a scoliosis, to have this training and stimulation. Then again, after a preparatory period of intensive training in exercises, the corrective treatment in plaster is not maintained, as was formerly the case, for so prolonged a period that the patient suffers a marked atrophy of the parts encased in the plaster jacket. We do, to be sure, very often keep the patient under treatment for a long time—in fact, it is our custom now not to accept patients into the clinic unless they agree to a strict attendance of from two to three years, with the understanding that they are to be treated as the surgeon in charge sees fit. During that period the corrective casts are not maintained in a continuous unbroken series. On the contrary, there are alternating periods of exercises and corrective plaster casts. In this way there is no marked atrophy resulting, and the physical condition of the patients throughout the course of treatment is really better than what was normal for them before the treatment was instituted. Incidentally, we have also found that we obtain more correction by alternating the corrective cast periods and exercise periods over a certain space of time than by maintaining an unbroken series of corrective casts over that period.

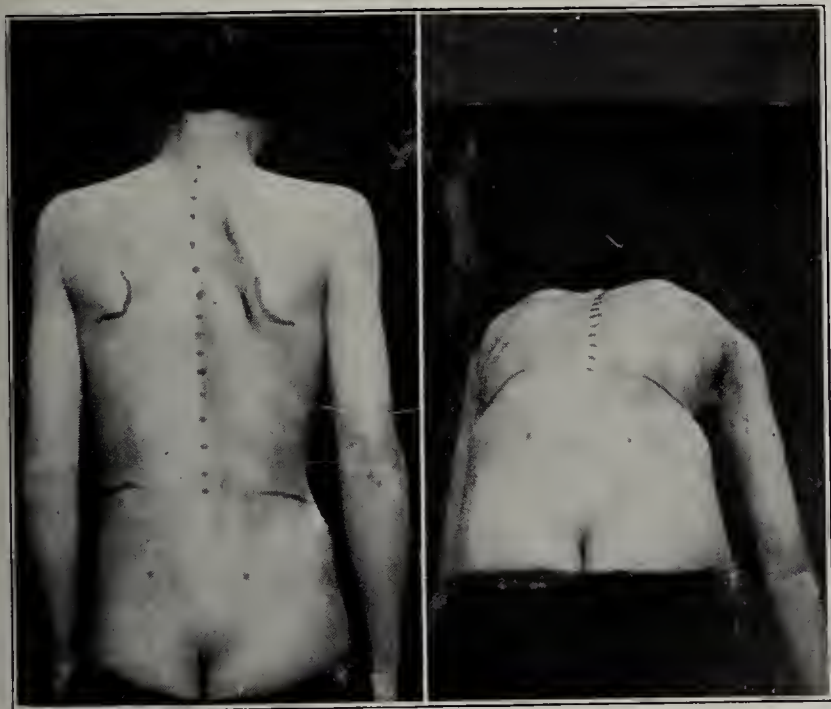


Fig. 2.—N. C., fifteen months later.

While maintaining a better physical condition of the patient under treatment, the morale of the patient is not neglected. Practically all our patients go to school, or to work, as they would if they had no scoliosis. They are allowed to do as they please, and to play whatever games they can, hampered as they often are with about 5 to 7 pounds (2.25 to 3 kg.) of plaster jacket. It is a source of satisfaction to see the happy, shouting chil-

dren undergoing treatment in the clinic. It is often really necessary to send them home after their task for the day is done. Only once in the course of the treatment is there ever any complaint of discomfort from the treatment, and that sometimes happens at the application of the first corrective jacket. For the initial twenty-four to forty-eight hours, after the first plaster

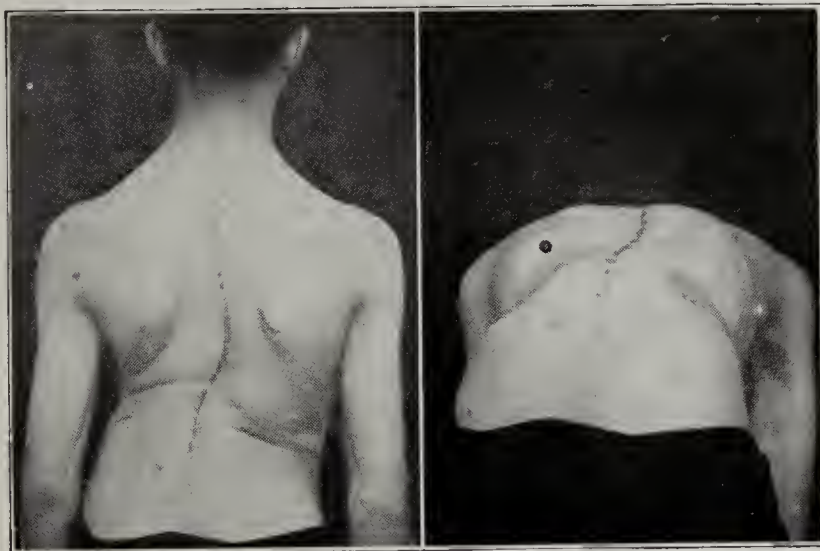


Fig. 3.—B. R., aged 15, standing and in the forward bend position. The first corrective jacket was applied five months later.

has been applied, they are occasionally uncomfortable in their rigid shells, but after that the patients become accustomed to their restrictions and are generally quite happy and contented. This freedom from nagging discomfort seems to us of great importance, as while we are striving to correct a bad deformity of the body we may induce a worse deformity of the disposition.

#### TREATMENT

Definite rest periods are prescribed for all our patients. It is, of course, questionable whether or not scoliotic deformities can be attributed primarily to fatigue. At any rate, it seems definitely certain that fatigue will increase any existing pathologic curve in the spine. Therefore to obviate as much of this as is possible, patients are ordered to take twenty minute rest periods three times a day, many of them in plaster shells, the rest on hard, flat surfaces, such as a table or the floor.

To start things off as well as possible, all our patients are examined as a matter of routine in the medical outpatient department. Thus we are assured in advance that the general physical condition of the patients warrants their being exercised strenuously. The nutrition clinic is also consulted about all cases overweight or underweight. Then as soon as their roentgenograms, tracings of their spines, and photographs are taken, the exercises are begun. These records are thus taken: Roentgenograms of the complete spine in the anteroposterior diameter and with the patient in a recumbent position are taken. Photographs in the erect and forward bend position are taken now, with a stereoscopic camera and in the Osgood-Bucholz<sup>1</sup> frame. The tracings are made as follows: The spinous processes are marked with a skin pencil while the patient stands erect. A piece of ordinary tracing paper is applied to the back to fit its contours accurately, and is held in place by bits of adhesive plaster. The markings of the spinous processes are then easily transferred to the tracing paper, and with a spirit level a perpendicular is

1. Bucholz, C. H., and Osgood, R. B.: A Frame for Standardizing Photographic Records of Scoliosis, *Am. J. Orthop. Surg.* 12:77. 1914.



drawn up through the fold of the buttocks. This gives a graphic record of the deviation and displacement which is comparable with previous or later records of this set. The two records to be compared are placed together in such a way that the perpendiculars are superimposed, and then it is obvious whether or not



Fig. 4.—B. R., after three months of corrective plaster jacket treatment.

there has been a change in the alinement of the spinous processes, and if so in what direction.

Then, as said before, the exercises are begun. All of these are simple, so much so that youngsters of 7 or 8 grasp them readily. No exercise apparatus is used, and all of the exercises done at the clinic are repeated twice or three times a day at home. In the beginning the exercises are of the mobilizing type. As their name implies, they mobilize the unused and tightened muscles and ligaments of the trunk and, of course, at the same time strengthen them. Their very important function is to educate the patient to an ability to localize his control over his respiratory muscles, thereby cultivating a force powerful in its single expression but manifestly of paramount value because of its involuntary continuous repetition twenty odd thousand times a day. It is on this force carefully nurtured beforehand that we rely for correction of the patient's symmetry, once the plaster jackets have rearranged the parts of the thorax more evenly about his center of gravity. Red cheeks and bright eyes appear on patients and they become enthusiastic and active, while before they had been pale, dull and listless. After we are satisfied that the patient has learned to bring his potential respiratory force under his localized control and in fact does it habitually almost subconsciously to correct the rib deformity, then and only then, usually after from one to six months' attendance at the clinic, do we apply a corrective jacket.

This plaster jacket is applied to the patient while he is supine on a hammock in the Abbott<sup>2</sup> frame in the following position: The shoulder girdle is rotated toward the side of the convexity of the spinal curve while the pelvic girdle is rotated simultaneously in the opposite direction. In other words, if the patient has a right dorsal left lumbar curve, his shoulders are rotated to the right and his pelvis to the left. This, it seems to

me, is the natural thing to do in order to straighten a twisted rod; i. e., untwist both ends in opposite directions. Especially does this rotation treatment seem warranted as the forces necessarily applied thereby are not as severe as might be the case by some other method. Then again, as Lovett<sup>3</sup> has proved, in the dorsal region, the seat of the deformity we are combating, rotation is the freest of all movements.

Now then, by the rotation of the two girdles in opposite directions we are employing two very powerful levers of derotation. First, as Feiss<sup>4</sup> and Forbes<sup>5</sup> have shown, by rotating the shoulders the peripheral stress of the parietes enveloping the concave side of the thorax acts as a force on the ribs of that side—as shown at *a* in Figure 7—to effect, through the spring tension of the ribs, a turning of the thorax. The tension is increased on the concave side, therefore, causing a recession there as indicated at *b*; and by pushing on the transverse processes, there should result a correction of the vertebral rotation. This should be followed on the convex side, where the spring tension is lessened by a progression forward. With this change in shape should come a change, as it were, in the center of gravity, a shift in the thorax to result in a better balance.

Simultaneously with and in addition to this correction we see further, on the concave side, a separation of the individual ribs and a downward inclination to them; while, on the other side, the ribs become more crowded together. These, then, are the effects of the first leverage considered, i. e., the indirect leverage—a derotation by the ribs.



Fig. 5.—Patient with a right dorsal-left lumbar scoliosis in position ready for the application of a plaster jacket.

Secondly, by rotating the pelvis there should be effected a direct derotation of the dorsal vertebrae by the lumbar vertebrae. Lovett,<sup>3</sup> in 1905, concluded that there was little rotation possible in the lumbar spine normally, and that it was "extremely limited." In 1914,

3. Lovett: The Mechanism of the Normal Spine and Its Relation to Scoliosis, Boston M. & S. J. **153**: 349 (Sept. 28) 1905.

4. Feiss: The Mechanics of Lateral Curvature, Am. J. Orthop. Surg. **4**: 37 (July) 1906.

5. Forbes: Rotation Treatment of Scoliosis, New York M. J. **96**: 1 (July 6) 1912.

2. Abbott, E. G.: Am. J. Orthop. Surg. **15**: 370, 396 (May) 1917.



Calve<sup>6</sup> remarked on the absence of rotation in the lumbar spine, and concluded that the lumbar column forms with the pelvis an actual rigid block to rotation. Nearly all the rotation of the pelvis, therefore, should be transmitted through the lumbar spine to the dorsal vertebrae, and there should be little danger of aggravating a lumbar deformation. At any rate, it seems safe to risk the possibility of any such deformation, slight as it necessarily must be, in order thereby to correct the great total deformity. Therefore, our second, powerful, direct derotator: the pelvic leverage.



Fig. 6.—Photographic record of a patient in the Osgood-Bucholz frame; it is intended that the next report of cases shall be based on records of this sort.

Casts are applied then with the patient in position with the two levers of derotation, just described, in effect. Windows are cut over the posterior concave half of the thorax, and in front over the ribs on the convex half. The respiratory movements previously cultivated tend to increase the corrective strain applied to the deformity, and a bulging of the thorax through these windows soon attests this fact. The effectiveness of this fenestration, aside from its value for aeration purposes, is enhanced by the application of direct pressure on the rib wall of the convex side posterior to the angles of the ribs. This force—the third one employed, for direct derotation by means of the ribs—tends to rotate the thorax still more rapidly in the direction that rotation of the shoulders effected, and more specifically lessens the impressive evidence of the rotation, namely, the posterior convexity of the ribs—the hump. With the application of this moderate amount of pressure, by means of felt pads inserted once a week between the angle of the ribs on the convex side and the plaster cast, the thorax at the windows bulges more and more with each respiration. This respiratory force, as noted before, is involuntarily in action about twenty odd thousand times a day; but besides this the patient is instructed to carry on with his intensive breathing exercises, now in the cast, three times a day for twenty minute periods. Naturally this force is thus increased in power, and serves as the fourth force for derotation.

The casts are maintained until they are no longer efficacious, and are then changed, usually on an average of about once a month. The repetition of casts goes on while there is any improvement shown. Once this ceases, the patient is transferred to a fenestrated jacket similar to the one he has been wearing, but removable. That is to say, the jacket is made snugly fitting in the rotated position, and then is split along the back and front. Leather hinges are applied to the posterior halves, and leather straps and buckles in front. This furnishes the patient with a very cheap piece of retentive apparatus. Then the patient returns to his exer-

cises for a few months, but after that the permanent jackets are again resumed for still further correction. Once the maximum amount of correction from the rotation jackets has been obtained—and we have seen an increase in height of about 6½ inches (15 centimeters) within five months of such jacket treatment—the patient is transferred to a jacket applied in the same frame but with the patient lying supine on the hammock, the trunk flexed at the hips, and the spine somewhat in flexion—in other words, almost a straight jacket. The fenestration is similar to that in the rotation jacket, and the insertion of the pads corresponds likewise. Thus the remaining posterior convexity of the ribs—the hump—is attacked still further. These casts also are worn for about a month each and padded weekly, till finally, when the maximum amount of correction has been attained, the patient is measured for a brace holding the pelvis with butterfly grips and supporting the thorax by means of uprights with attached swathes. While this is being made, he is given a bivalved hinged plaster jacket, as described before, except that there is no rotatory tendency to the cast. Then he resumes his exercises daily out of his cast, this time though to strengthen the supportive stays to the spine. With a continuous repetition of his muscle strengthening exercises these muscles become competent, with the help of his brace, to maintain the patient in his new, and better balanced, symmetrical position. The brace is worn, coincident with the exercises, over a period of years while Wolff's law of bone transformation may take effect. Then by the time the patient is from 21 to 25 years of age he should have a stable spine supported by strong muscles. Henceforth,

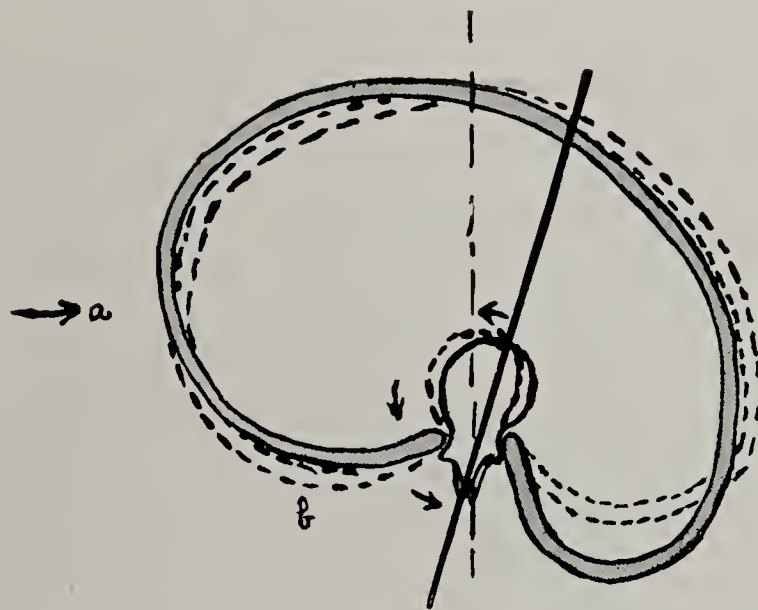


Fig. 7.—Diagram indicating the effect of rotating the shoulder girdle to the patient's right. The enveloping parietes exert a force on the ribs—at *a*—to effect a turning of the thorax, etc.

without any help, he should remain through the rest of his life a symmetrical, well balanced, and, to the casual observer, a normal looking person.

483 Beacon Street.

**High Maternal Death Rates in Childbirth.**—By intensive analysis of the data available in municipal and state health departments, it would be possible to determine with considerable accuracy to what degree some of the causes of high stillbirth rates and most of the causes of high maternal death rates in childbearing are due to poor obstetrical service on the part of physicians and midwives, the extent to which particular individuals are responsible for these fatalities, and the measures necessary to reduce them.—W. T. Howard, Jr., *Am. J. Hygiene* 1:233 (March) 1921.

6. Calve: *Am. J. Orthop. Surg.* 12:23, 1914.



## TREATMENT OF FRACTURES OF THE METACARPALS AND PHALANGES OF THE FINGERS

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Fractures of the metacarpals and phalanges of the fingers have not received attention in proportion to their importance. The hand is not only a most impor-



Fig. 1.—Appearance of the hand at the time it came under treatment; method of attaching gauze loops, and the application of extension.

tant member from the industrial point of view, but it is likewise exposed to danger far more than other parts of the body. All writers are agreed that the diagnosis of these injuries is easy. In too many instances, however, surgeons submit to the influence of the almost continual cry from the claim or loss departments to

agree that extension is indicated in fractures with overriding. This, of course, does not apply to the distal phalanges because displacement of fragments here is not due to muscular action, and hence extension is not necessary. Fractures of the middle phalanges of the fingers are not often overriding; but when this condition does exist, extension is indicated.

The method presented will be found most applicable to fractures of the proximal phalanges and metacarpals, but can be successfully used in fractures of the middle phalanges. The secret of extension of the fingers lies in something that can be attached to the skin which will not slip and at the same time not restrict circulation to



Fig. 2.—Cast with wire loop, and further illustration of the method.

any material extent. This can be accomplished with a strip of gauze bandage and a glue made of celluloid and acetone. To make this glue, enough celluloid (I use scraps obtained from automobile top manufacturers) is dissolved in acetone to make a solution of the consistency of mucilage. It is well to test the solution by gluing a piece of gauze to an assistant's hand before



Fig. 3.—Position of the fragments at the time the patient came under observation.



Fig. 4.—Position of the fragments after being in extension for twenty-four hours.



Fig. 5.—Position in which the fragments were allowed to unite.

“keep down expenses,” and omit the taking of roentgenograms in the so-called minor injuries. Too much emphasis cannot be placed on the importance of knowing the exact condition at the earliest possible moment in order to handle cases of this kind properly.

It is not my purpose to discuss individual fractures, but simply to offer a suggestion as to treatment, particularly where extension is indicated. All writers

applying it to the patient. The most satisfactory method is to glue a loop of gauze to each finger on which extension is desired, and while the glue is drying put a plaster-of-Paris cast on the forearm, extending from the fold of the wrist to within about 2 inches (5 cm.) of the fold of the elbow. In this cast a wire loop, which is so adjusted as to project 2 or 3 inches (from 5 to 7.5 cm.) beyond the finger or fingers to be



extended, is incorporated. In this method counter-extension is made against the bulge of the muscles of the forearm; hence, in putting on the cast, but little padding should be used, otherwise when extension is applied it will crowd up. After the plaster hardens, the wire loop is adjusted to the line in which extension is desired and then a piece of rubber tubing is passed through the gauze loop attached to the finger and over

dorsum to palm. The functional result was practically complete recovery, there being only slight loss of flexion in the distal joint of the third finger. At the end of one year, he resumed playing the violin, using the injured hand to finger the strings.

108 North State Street.

## Clinical Notes, Suggestions, and New Instruments

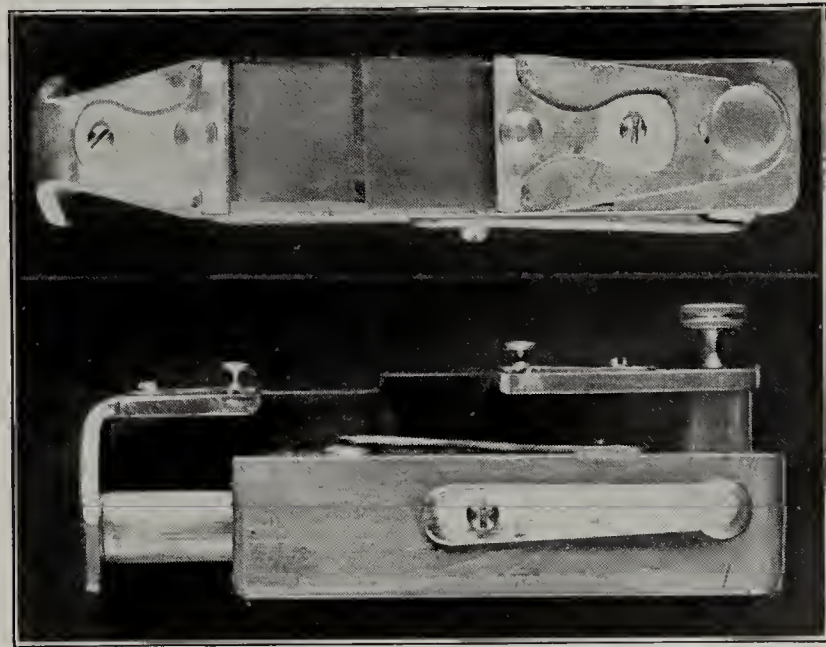
### COVER SLIP BLOOD FILM APPARATUS \*

H. REXFORD HOOBLER, M.D., SAN FRANCISCO

Every one working with blood has realized the difficulty of making satisfactory smears. Slide smears, when made by thin paper or another slide, do not give an even distribution of the leukocytes. Cover slip preparations have always been considered the best, and these are satisfactory only when made by the hands of one with much experience.

During the last year I have been working on dried blood smears where uniformity of distribution, thinness of film and rapidity in making were essential. I tried both slide and cover slip methods but with poor results. I realized the necessity of having a device for this purpose which only mechanical precision can accomplish, and, with suggestions from Dr. V. E. Emel, evolved the apparatus here described.

The cover slip blood film apparatus consists of a rectangular brass block into which two pistons fit at right angles in the same plane. Each piston has a stage attached on which a cover slip is held in place by a flat spring. The cover slips are put in place. A drop of blood is put on the cover slip on the horizontal piston by touching the finger with the cover slip in place. The apparatus is held in the left hand between the thumb and thenar eminence and the last three fingers. With the index finger, the horizontal piston is pushed in against a coiled spring until it is under the cover slip on the vertical piston and is held there. With the right hand, the vertical piston is screwed down against a coiled spring until by capillary attraction the drop spreads uniformly over the two cover slips. As soon as spread, the



Top and side views of cover slip blood film apparatus.

horizontal piston is released and the two cover slips slide apart.

This gives a uniform distribution of the blood. The white cells remain in place and are not dragged to the edge. The film can be made as thin or as thick as desired. A loop of standard size can be used to transfer the blood to the cover slip; but if the finger is pierced and the size of the drop selected, this is not necessary. It can be loaded and carried in the pocket when leaving the office or laboratory. The apparatus is made heavy so as to give it firmness.

\* From the Department of Pediatrics, University of California Medical School.



Fig. 6.—Appearance of the bones one year after the injury.

the wire loop, and made fast with as much strain as is desired. Experience has taught that care must be observed not to put too much strain on, because blistering of the skin will follow and the gauze loop will loosen. In the few instances in which this has occurred, another loop has been applied, using the palmar and dorsal surfaces when the first loop was attached to the sides and vice versa, and extension continued without interruption. The blistered surface will heal very kindly.

The method is particularly adapted to compound fractures because it allows free access to wounds. It is likewise convenient if it becomes necessary to operate and open down to the seat of fracture and adjust the fragments. As the celluloid acetone solution is impervious to water, the parts can be prepared for open operative work without removing the extension apparatus; as soon as the operation is complete the finger can be fixed in extension without any manipulation and held there, and hence it is seldom necessary to do more than adjust fragments. A string can be substituted for the rubber tube during the operation, and an assistant can make traction when required. The rubber tube should immediately be restored at the close of the operative procedure.

#### REPORT OF CASE

A man, aged 40, was riding in a coupé which skidded into the curb, and turned on its side. As the car went over, he put his left hand out of the window on to the concrete sidewalk, and the top of the window frame came down on it, severely lacerating and contusing the soft tissues and fracturing the metacarpals of all of the fingers. I saw the patient twelve days after the injury, at which time the fractures were overriding, the wounds were infected, and the hand was so intensely swollen that it measured 3 inches (7.5 cm.) from



## CHRONIC SPLENOMEGALY WITH ATTACKS OF GASTRORRHAGIA DUE TO RECURRENT THROMBOSIS OF THE SPLENIC VEIN

ANDERS FRICK, M.D., CHICAGO

Chief of Department of Internal Medicine, Augustana Hospital

I. H., a man, aged 61, had been well up to his forty-third year, when, probably after a cold, a severe pain in the epigastrium and the left hypochondrium developed. He remained in bed three weeks, and the pain gradually subsided. No definite diagnosis was made. He was thereafter quite well until his fiftieth year, when he suddenly began vomiting large amounts of blood. At that time the spleen was found to be enlarged and a tentative diagnosis of Laënnec's cirrhosis was made. When 59 years old, he had what seems to have been a small gastric hemorrhage. He was suddenly seized with a slight pain in the epigastrium and became very pale and weak, but recovered rapidly. When 60 years old, he had a similar but somewhat more severe attack, at which I happened to be present. He suddenly complained of epigastric pain and extreme weakness. He turned very pale. The skin was clammy and the pulse very small and rapid. He did not vomit. The next day the feces, which were dark but not tar-colored, gave a very strong reaction for occult blood. Only after two weeks had elapsed was the Weber test negative.

Having recovered sufficiently, he was thoroughly examined. The stomach contents were normal; the Wassermann reaction was negative; a roentgenogram of the stomach was negative except that it showed the organ displaced by the enlarged spleen; analysis of the blood revealed 5,536,000 red cells, 7,600 white cells, and 85 per cent. hemoglobin; the spleen reached about a hand's breadth below the costal arch.

A year and a half later, early in December, 1920, he again complained rather suddenly of epigastric pain and great weakness. The feces contained occult blood. The patient was kept in bed, starved a few days, and was gradually allowed to take very light food. After two weeks, he was allowed to be out of bed, and was feeling well, until December 31, at noon, when he suddenly became extremely weak, and shortly afterward began to vomit blood profusely. Within a few hours, he was taken to the Augustana Hospital. When admitted, he had already vomited two or three basinfuls of blood and was extremely weak. The complexion was ashy gray, and the pulse barely palpable. A transfusion of 1,000 c.c. (33.8 fluidounces) of whole blood was made and he rallied immediately, the color returned to his cheeks, and he declared that he felt perfectly well. About two hours later, however, he again began to vomit blood and he died, exsanguinated, at 2 o'clock the following morning.

At necropsy, which was performed by Dr. John Nuzum, we found: (1) an enlarged and not adherent spleen weighing about 500 gm. (1 pound and 1½ ounces); (2) one old and calcified thrombus in the splenic vein and, immediately to the left of it, another thrombus of recent date; (3) the distal part of the splenic vein as well as the venae breves and the gastric veins considerably dilated; (4) a few enlarged lymph nodes along the splenic vein, and (5) petechial spots in the gastric mucosa.

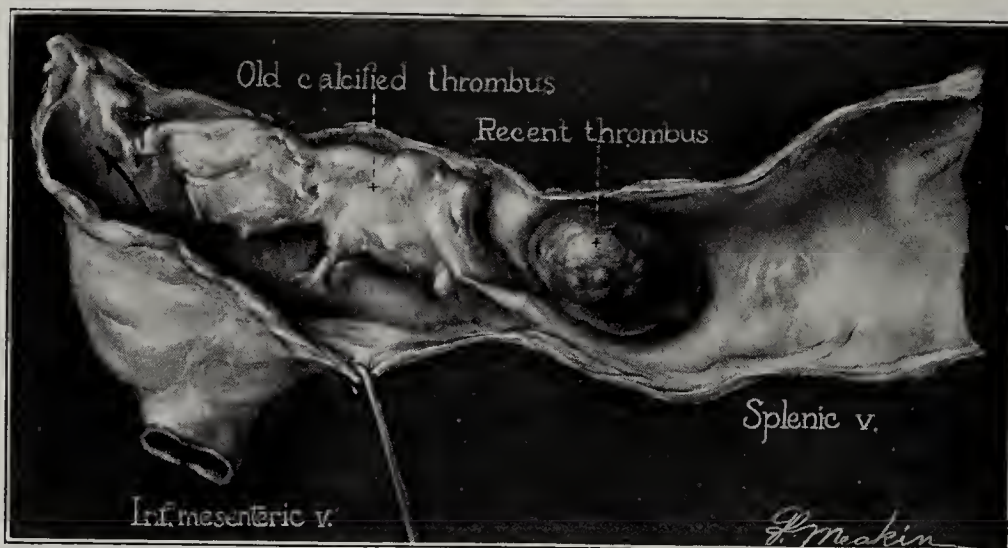
The spleen was of slightly increased consistency, evidently owing to passive congestion and fibrosis. The calcified thrombus was situated in the splenic vein immediately to the left of its junction with the inferior mesenteric vein and formed

a ridge about three-quarters inch (19 mm.) long, which almost entirely occluded the lumen of the vessel, but did not interfere with the outflow from the inferior mesenteric vein. The more recent thrombus, situated close to and distally from the old one, was the size of the kernel of a small hazelnut, filled the lumen completely, and was attached with a broad base to the vessel wall. It was slightly reddish. There were no other pathologic changes in the splenic vein. The portal vein was normal and patent, the liver was normal, and there was no trace of a gastric or duodenal ulcer. Prof. Ludvig Hektoen kindly interpreted the pathologic specimen.

## COMMENT

We had made an antemortem diagnosis of portal thrombosis of eighteen years' standing, believing that the epigastric pain experienced when the patient was 43 years old was due to a thrombus formation in the portal vein, as the pain came on rather suddenly and lasted, as is usual in cases of thrombophlebitis, about three weeks, or until the thrombus became organized. The splenomegaly, which was detected seven years later, was considered due to passive congestion subsequent to a thrombotic obstruction of the portal vein; and the attacks of gastrorrhagia were ascribed to rupture of gastric veins, which were supposed to be congested and dilated because of the same obstruction in the portal vein.

In view of the post-mortem findings, it is evident that our diagnosis was not quite correct in regard to the exact location of the thrombus. The splenomegaly and, particularly, the gastrorrhagia were due to an obstruction, not in the portal but in the splenic vein. It was because of the splenic thrombosis that a collateral circulation was established in the stomach; the normal current in the venae breves was reversed; and an increased amount of venous blood



Specimen of splenic vein with thrombi.

was thrown from the spleen through these vessels into the gastric veins, which became engorged and dilated, and finally ruptured. Consequently, the source of the extravasated and vomited blood was the spleen, and if a splenectomy had been made at an opportune time, the fatal gastrorrhagia could have been prevented. There would even have been a fair chance that a splenectomy could have saved the patient after the gastrorrhagia had set in, if it had been performed immediately after the transfusion. At that time the patient was in excellent condition, and it was only two hours later that he again began to vomit blood. Even if, in the meantime, there was some bleeding going on in the stomach, it would have ceased as soon as the splenic vessels had been clamped. One feels much more certain that a splenectomy would have been beneficial when one considers that the outflow from the gastric veins into the portal vein was free; and, therefore, all causes for increased pressure within these vessels would have been removed by the shutting off of the blood flowing from the spleen to the stomach.

The question then presents itself: Could a correct diagnosis have been made? Yes, it undoubtedly would have been possible if more attention had been paid to the absence of circulatory disturbances in those abdominal organs which are drained of their venous blood by branches of the portal vein other than the splenic vein. A study of a diagram of the portal tree shows that if a thrombus is located, as in the case reported, in the splenic vein to the left of its junction with the inferior mesenteric vein, it will not interfere with the circulation in any of the portal branches but the splenic



vein. If the thrombus had extended farther toward the right, the inferior mesenteric vein would have been occluded, and a formation of hemorrhoids would have resulted. Had the thrombus extended still farther toward the right and into the portal vein, it would have interfered with the circulation in the inferior mesenteric, the duodenopancreatic, and the para-umbilical veins. The subsequent passive congestion in the territory of these veins would have caused chronic diarrhea, ascites, an enlargement of the superficial abdominal or lower thoracic veins, and possibly hemorrhages from the bowels.

#### CONCLUSION

In the presence of a case of chronic splenomegaly with attacks of recurrent gastrorrhagia, and in the absence of other symptomatology, particularly hemorrhoids, chronic diarrhea, ascites, caput medusae, and intestinal hemorrhage, one would be justified in making a diagnosis of thrombosis of the distal portion of the splenic vein, and splenectomy would be clearly indicated. It should be performed preferably at an opportune time, but it is indicated also as an emergency measure at the time of an attack of gastrorrhagia, if it can be done immediately after a blood transfusion.

3219 North Clark Street.

#### A NEEDLE FOR INDUCING PNEUMOTHORAX

H. R. MILLER, M.D., NEW YORK

Adjunct Attending Physician, Montefiore Hospital

Those who have employed the Floyd-Robinson needle for the induction of artificial pneumothorax realize that the instrument is heavy, somewhat clumsy, and requires manipulation of two pet-cocks, as well as prompt stoppage by the finger at the point of exit of the trocar after its complete withdrawal.

The needle proposed is light, has no pet-cocks, and is built very much like the Quincke lumbar puncture needle. With



Fig. 1.—Instrument assembled before puncture.

proper connections for manometric reading and for air or nitrogen pressure, the instrument is forced through the chest wall with the trocar in place (Fig. 1); the cap is now turned slightly to free the trocar, which is then pulled up as far as it will come (it cannot be removed entirely), and secured firmly by turning the cap back to its original position. This produces an air-tight closure around the trocar and auto-

matically permits an open channel for the inflow of air or gas.

The functioning principle of this instrument lies in the use of the conical wedge, slit longitudinally almost to its very base (Fig. 2), and capable of pressing snugly about the trocar



Fig. 2.—Instrument opened to show important parts.

when the overlying cap is screwed down so as to compress the two lower opposing portions of the wedge. If the cap is unscrewed and thus unloosened, the trocar will slide up and down readily.

The instrument may be used for aspiration as well as for the introduction of air or gas.

266 West End Avenue.

#### TENDON SUBSTITUTION TO RESTORE FUNCTION OF THE EXTENSOR MUSCLES OF THE FINGERS AND THUMB

WILLIAM JACKSON MERRILL, M.D., PHILADELPHIA

Corporal Z. was wounded in the left forearm, on the dorsal surface, at about the junction of the distal and middle thirds, Sept. 26, 1918. A débridement was done soon after the injury. Suppuration followed of not a very serious nature. There was a scar about 4 inches (10 cm.) long and one-half inch (12.7 mm.) wide running upward from the bend of the wrist, firmly adherent to the deeper structures. The power to extend the fingers and thumb was entirely lost. Figure 1 A shows the position of the hand and fingers before operation—the fingers flexed and the tip of the thumb in the palm of the hand. The metacarpal bone of the thumb could be slightly abducted, but the phalanges could not be extended. The wrist could be feebly dorsally flexed, but veered to the radial side. The flexor muscles were normal, but were practically useless on account of the loss of power of their antagonists. There was no evidence of any latent inflammatory process. The tissues of the dorsum of the hand and wrist, with the exception of the cicatrices, were quite normal in texture. The



patient before his induction into the service was employed in a factory where he operated a machine in the manufacture of small parts of machinery, which labor required deft use of the hands. This condition entirely unfitted him for his vocation.

The problem at hand was to restore muscle balance to a degree that the fingers and thumb could be extended sufficiently to open the hand and make possible the grasp by the flexor groups. It was evident that no muscle tissue was left on the dorsum of the forearm, except the extensor carpi radialis longior, extensor carpi radialis brevior and ossis metacarpi pollicis, and the condition of these could not be accurately determined prior to the operation. No definite plan could be predetermined, but my purpose was to combine the tendons in groups according as the muscle tissue found would permit, or to attach the distal stumps of the tendons to a single combined tendon if no better scheme was possible.

Operation was performed six months after the wound was healed. An incision 10 inches (25 cm.) long was made on the dorsum of the forearm and hand, extending along the edge of the scar, and the scar and the underlying cicatricial tissue were resected, exposing the interosseous membrane, which was thickened, dense and dark (Fig. 2 A). The stumps of the extensor tendons (extensores, minimi digiti, indices, communis and longus and brevis pollicis) were irregularly severed as shown in Figure 2 A. The tendons of the extensores carpi radialis longior and brevior and their sheaths were intact, as was also their muscles. The best plan seemed to be to attach these tendons to the extensor tendon stumps of the fingers in the following manner: The extensor minimi digiti and the fourth division of the communis were attached to the third division of the communis, and the latter was attached to the second division of the communis. The stump of the second division of the communis was attached to two thirds of the extensor carpi radialis brevior, one third of the extensor carpi radialis brevior was left attached to the carpal bones to flex the wrist dorsally (Fig. 2 B, d, e, f). When the last mentioned junction was made, the extensor carpi radialis brevior was pulled well down to give considerable tension on the extensor tendons of the fingers. The tendon of the extensor carpi radialis longior was detached entirely and joined to the stumps of the extensor indicis and the first division of the communis tendons (Fig. 2 B, g).

The stumps of the extensores longus and brevis pollicis tendons were attached to the tendon extensor ossis metacarpi pollicis (Fig. 2 B, h, i). Before this attachment was made,

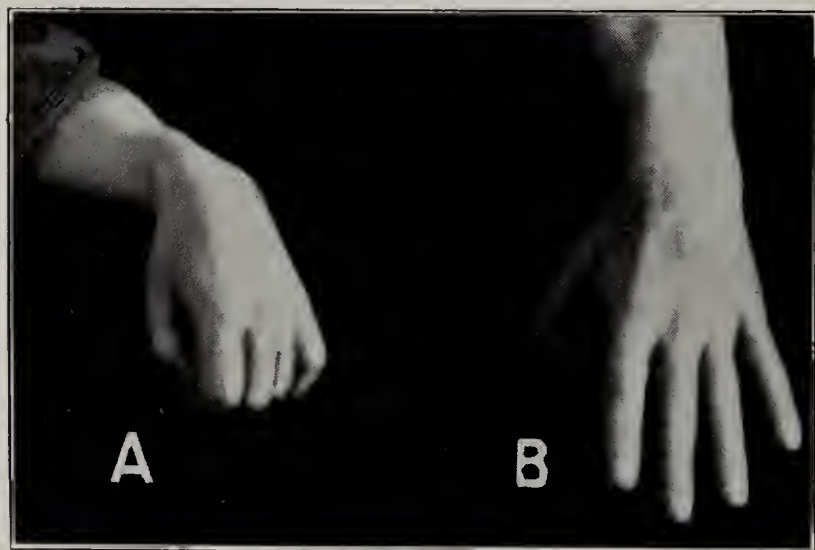


Fig. 1.—A, position of hand before operation; B, power of extension of fingers and thumb after operation.

the tendon extensor ossis metacarpi pollicis was pulled down forcibly to give considerable tension on the two tendon stumps. Their attachment and the tension on the stumps being unequal, the pull of the extensor ossis metacarpi pollicis would first be exerted on the distal and then on the middle phalanges before the metacarpal bone was to any great extent abducted.

The exposed tendons were generously covered with thin pads of fat taken from the thigh. The skin was closed by a running chain suture. Two small wick drains were used,

which were removed after twenty-four hours. The hand was dressed on a palmar splint, which fully flexed dorsally the wrist, and completely extended the fingers and extended and abducted the thumb. The splint was attached to an internal angular splint which held the hand in midposition and flexed the elbow at a right angle. The entire dressing was stabilized by a thin layer of plaster, and the arm was fixed to the chest.

The wound healed by first intention. The hand and arm were held in this position for about four weeks, when the dressing was removed and a simpler splint used to hold the hand in its cock-up position for three weeks. At the end of about seven weeks the dressings were removed and movements commenced. The fingers could readily be extended and the thumb extended and abducted as shown in Figure 1 B, in a short time after the dressings were removed. After a few months of training the patient could extend the fingers and thumb (as shown in Figure 1 B) quite as readily as the fingers and thumb of his normal right hand. The index finger can be extended independently of the three outer fingers, and they in turn can be extended independently of the index finger. The patient stated that the hand gave him practically no disability. He returned to his vocation, which he followed with no inconvenience. Much of the success of this operation is due to the use of the thin pads of fat which prevented adhesions.

2017 Spruce Street.

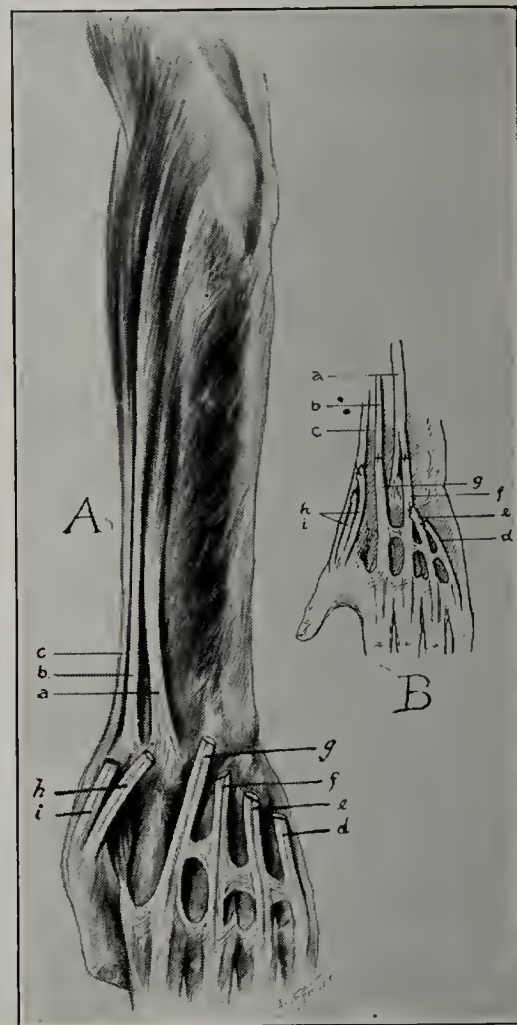


Fig. 2.—A, condition of muscles before operation; B, scheme by which the tendons were united.

#### A CASE OF AN ABNORMAL GROWTH OF THE UPPER EXTREMITY

W. H. SLAUGHTER, B.S., M.D., ELLIS ISLAND, N. Y.  
Surgeon, United States Public Health Service

I. K. (1745, U. S. Public Health Service Hospital No. 43, Ellis Island, N. Y.), a boy, white, aged 11, an alien, was admitted to the hospital, Aug. 12, 1921, with an abnormally developed upper extremity, including the shoulder girdle, that it might be determined whether or not the condition was one of filariasis, classified under the immigration laws of the United States as a dangerous, contagious disease, and an excludable condition.

The history of the case was obtained from the father through an interpreter. The patient, a Roumanian Hebrew, was born in Hungary, now Czechoslovakia. The birth was normal, the mother being delivered by a midwife. The left upper extremity at the time of birth was larger than the right, and the first and second fingers of the hand were webbed. At the age of 6 months, the child was taken to a hospital at Budapest, and operated on for his webbed fingers. Following operation, there was severe hemorrhage, to control which tourniquets were applied to the arm. It was reported that a tourniquet applied "high up on the arm" was left on for several days. Immediately after, the arm began



to increase in size. The operation for webbed fingers was not successful.

When the patient was 1½ years of age, the index and middle fingers were amputated. Two weeks later another operation was performed in an effort to correct the abnormal growth, a long incision being made from the shoulder to the elbow. Because of hemorrhage, the operation had to be abandoned.

The arm continued to develop in size until the patient was 9 years of age, at which time it reached its present development. It has not increased in size since. From the history

#### MEASUREMENTS OF UPPER EXTREMITIES

	Right Upper Extremity		Left Upper Extremity	
	Cm.	Inches	Cm.	Inches
Circumference at wrist.....	13	5 $\frac{3}{16}$	17	6 $\frac{3}{4}$
Circumference at forearm midway between wrist and elbow.....	17	6 $\frac{3}{4}$	23	9 $\frac{1}{16}$
Circumference at elbow, arm ex- tended .....	17	6 $\frac{3}{4}$	26	10 $\frac{1}{4}$
Circumference at insert of deltoid..	16	6 $\frac{3}{8}$	35	13 $\frac{3}{4}$
Circumference at shoulder (tape being carried from axillary folds over the acromion process of each shoulder) .....	24	9 $\frac{1}{2}$	43	16 $\frac{7}{8}$
Length from anterior axillary fold to tip of styloid process of radius.	34	13 $\frac{3}{8}$	37	14 $\frac{1}{2}$
Length from anterior axillary fold to terminal phalanx of thumb....	44	17 $\frac{3}{8}$	47	18 $\frac{1}{2}$
Length from the inferior angle of scapula over shoulder to terminal Phalanx of thumb, arm extended..	62	24 $\frac{3}{8}$	66	26

obtained, it appears that the patient had always been healthy. The usual diseases of childhood were denied. The family history was negative.

The patient had no complaint. (It is the custom for all aliens to deny ill health when they are admitted to the hospital at Ellis Island for observation, because they fear that any history which may be incriminating may be used in some

left upper extremity. A scar extended from the spine of the left scapula over the lateral aspect of the humerus to within about 5 cm. (2 inches) of the elbow of the affected limb. The length of the scar was 34 cm. (13 $\frac{3}{8}$  inches). The index and middle fingers of the left hand were missing, having been amputated at the metacarpophalangeal joints. Motion of all joints of the involved limb was normal. The patient apparently had as much strength in his left arm as in his right. There were no areas of abnormal sensation. On palpation, the affected member felt soft and rather flabby. On admission, the temperature was 37.2 C. (98.96 F.), pulse 90, respiration 20. The measurements of the upper extremities are given in the accompanying table.

The lymph glands were slightly palpable in the groins and axillae; otherwise the physical examination was negative.

Roentgen-ray examination and urinalysis were negative.

The blood was examined on three different occasions, at night, for microfilariae. All examinations were negative.

#### COMMENT

The case is clearly not one of filariasis. It is looked on as an abnormality, which, if any credence can be attached to the history, existed from birth. It is reported, not so much to speculate as to the cause, but rather to report an abnormal and unusual occurrence.



Fig. 2.—Side view of patient.



Fig. 1.—Front view of patient with abnormal growth of left arm.

way to bar them from the country.) He denied that he had pain or numbness in the affected limb. He further asserted that he did not feel any extra weight of the enlarged limb. However, as stated, he was sent to the hospital for "observation," in order to determine whether or not he had filariasis.

The patient was well nourished and well developed for a child of his age. He appeared unusually bright mentally. He showed no abnormalities other than an enlargement of the

#### A BONE PLATE FOR USE IN FRACTURES CLOSE TO JOINTS OR TO EPIPHYSES

WILLIAM H. BYFORD, M.D., BLUE ISLAND, ILL.  
Assistant Surgeon, St. Luke's Hospital, Chicago

Certain fractures, particularly those in which the extremities of the bones are involved, are at times impossible to retain in alinement. In such cases, when an open operation is resorted to, the usual methods of fixation have certain objections. To fix the fragments, whether by wire, catgut or tendon, requires a large exposure and much handling of tissue. A Lane plate requires at least two screws in each fragment to obtain security, and one of these may closely approach the joint or in children the epiphysis.

To overcome these objections, the plate illustrated in Figure 1 was made. It is of noncorrosive material, 1 inch (2.5 cm.) long, one-quarter inch (6.4 mm.) wide and one thirty-second inch (0.8 mm.) thick. In each end are three fixed pins, three-eighths inch (9.5 mm.) long and one thirty-second inch (0.8 mm.) thick, with cutting points. To apply, a small incision is made, the fracture reduced and the plate hammered on. Very little force need be used. No holes need be drilled, and there is no necessity of the hands touching the

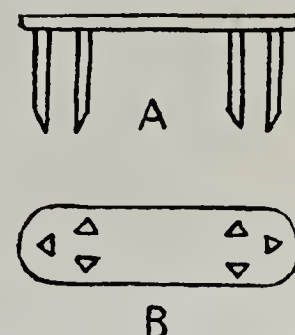


Fig. 1.—Bone plate for use in fractures close to joints or epiphyses: A, side view; B, bottom view.



wound. The plate holds firmly, and no more care in after-fixation is needed than when a Lane plate is used. To remove it, Kocher forceps are applied and the plate is withdrawn intact.



Fig. 2.—Double compound fracture of the forearm.

Figure 2 shows a double compound fracture of the forearm which could not be held in position. The wound became badly infected, and it was not deemed wise to operate until a month had passed. Figure 3 shows the same fracture a year later



Fig. 3.—Fracture a year later with plate in place.

with the plate still in place. A small focus of infection is seen beneath it. Although the fracture of the radius was close to the epiphyseal line, the plate did not touch it. Twelve months after the first operation the wound was reopened, the plate removed and the osteomyelitis cleaned out. At present the wound is healed with a good functional result.

This plate has the following advantages over the ordinary methods used:

1. It may be applied through a small incision.
2. It is easy to apply and few instruments are necessary.
3. The surrounding tissues are but slightly traumatized.
4. It may be used on small bones.
5. It is easily removed.
6. Neighboring tissues are not endangered by slipping of the drill or perforation through the bone.

480 Maple Avenue.

#### AN APPARATUS FOR WITHDRAWING SPINAL FLUID WITHOUT POSTPUNCTURE REACTION\*

RANDAL HOYT, M.D., NEW YORK

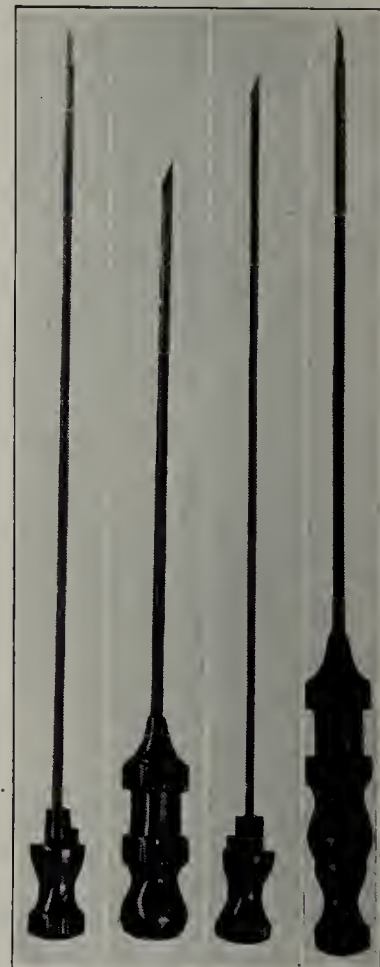
Assistant Attending Physician, New York Skin and Cancer Hospital

Owing to the density of the tissues through which one must pass in making spinal puncture, a needle of sufficient size and rigidity to eliminate the danger of breakage must be employed. But the perforation of the dura which a needle of such size makes is virtually a tear, which, on account of the inelasticity of this membrane, remains open until the process of healing has taken place. MacRobert<sup>1</sup> asserts that sometimes the arachnoid is pulled through this opening as the needle is withdrawn, and that this causes a constant leakage of spinal fluid, which, by temporarily destroying the "hydraulic support" of the brain, is responsible for the headaches which so frequently follow lumbar puncture.

Could a small opening be made in the dura, it is highly probable that these unfortunate sequelae would not occur; but, as already stated, on account of the liability to breakage, the use of a needle small enough to make an opening is precluded.

In the hope of combining the advantages of a small and a large needle, we have made use of an apparatus<sup>2</sup> which is nothing more nor less than a needle within a needle. The outer needle is the ordinary type of lumbar puncture needle, within which the inner needle accurately fits, and beyond which it extends as a fine point, for about a quarter of an inch (6 mm.). The proximal end of the outer needle is arranged as a fitting for a Luer syringe, whereas the proximal end of the inner needle is arranged for a record syringe.

To use this apparatus, lumbar puncture is made in the usual way, up to the point of piercing the dura. At this point, the obturator of the needle is removed, the inner needle—with a 10 c.c. record syringe attached—is introduced into its place, and thrust forward to its full extent, so as to pierce the dura, which it is enabled to do on account of its extra length. The spinal fluid is then withdrawn into the syringe, and if spinal treatment is



A, inner needle with the fine pointed extension which pierces the dura; B, barrel of ordinary type of lumbar puncture needle, which serves in the capacity of the outer needle; C, its obturator. Note the comparative lengths of the obturator and the inner needle. D, inner needle in place within the outer needle. The fine pointed extremity of the inner needle, which pierces the dura, extends beyond the distal extremity of the outer needle. The length of this extension may be judged by comparison with C, the obturator.

\* Presented before the Clinical Society of the New York Skin and Cancer Hospital.

1. MacRobert, R. G.: The Cause of Lumbar Puncture Headache, J. A. M. A. 70: 1350 (May 11) 1918.

2. Through the courtesy of Messrs. Bechton, Dickinson & Co., Rutherford, N. J.



to be given this is injected by means of a second syringe. To remove the apparatus, the inner needle is first withdrawn, and then the outer needle.

Three questions arise in connection with the use of this apparatus:

1. Can one determine when lumbar puncture has been carried up to the point of piercing the dura? In our experience, thus far, this has not been so difficult to determine as we had imagined it would be. There is a considerable variation in the resistance of tissues encountered during lumbar puncture, which ordinarily is not taken into consideration, as the sole object in view is to enter the subarachnoid space. By noting the degrees of resistance, however, one can, with a little practice, determine when the dural sac has been reached.

2. Are there any untoward contingencies liable to arise in the use of this apparatus? The pointed end of the inner needle would probably be broken if it were pressed with any degree of force against a bony structure. There is, however, no excuse for such an occurrence; the dura offers scarcely any resistance; therefore, if firm resistance to the inner needle is encountered, it may be inferred that the first step in the technic of puncture has been erroneously executed.

When the pointed end of the inner needle strikes a nerve root, it produces exquisite pain, and for this reason it should be inserted with the utmost gentleness.

The common error to arise is that of carrying the first step too far and piercing the dura with the outer needle. This amounts to nothing more than performing an ordinary lumbar puncture. It is to be borne in mind, however, that if treatment is to be given, the solution to be administered is in a record syringe, whereas the outer needle has a Luer fitting. For this reason we always have available an apparatus for giving treatment by gravity which has a Luer attachment.

3. Does the use of this apparatus prevent postpuncture reactions? Thus far, we do not feel that we have used the apparatus sufficiently to form any definite conclusions. There have as yet been no reactions in the cases in which we have performed puncture in this manner. It has been the first puncture of many of these patients and the serologic results have been negative—a type of case which is especially prone to reaction. In other cases, which habitually showed marked reactions, such have not occurred when puncture has been made by this method. This question will be the subject of a later report when more material is available.

1 West Sixty-Eighth Street.

#### NEUROLOGIC PERCUSSION HAMMER

JOSHUA H. LEINER, M.D., NEW YORK

This combined neurologic percussion hammer has primarily the great advantage of being so compact that it can be carried in a vest pocket, being about half the length of the ordinary type. When it is pulled out it is the size of the ordinary percussion hammer.

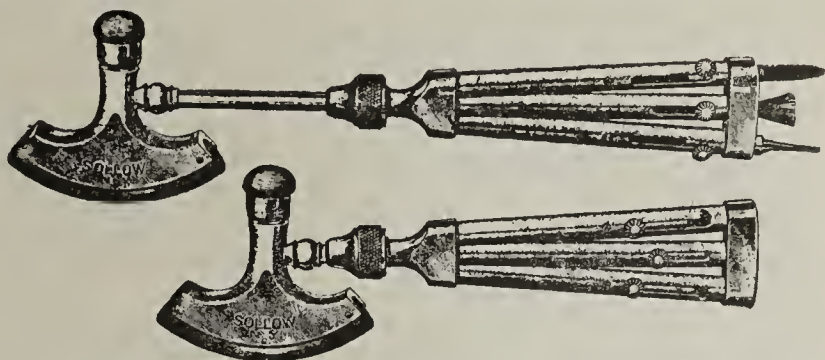
The design conforms to that of a Roman battle ax. The convex side is used for the ordinary elicitation of tendon reflexes incidental to a neurologic examination. Metal is used here as weight for the proper balance, and the crescent shaped insert of dark red rubber, as a soft cushion. The top white rubber tip can be used for eliciting tendon response (especially in children), muscle chest percussion, etc. The rubber is a little harder here and is kept in place by a set-screw.

The opposite end of the instrument, or the handle, is made of three narrow tubes, within each of which lies an instrument commonly used by a neurologist incidental to a neurologic examination: for touch, a camel's hair brush; for pain, a steel needle; and for eliciting plantar response, and the like, a blunt orange wood stick. This orange stick is colored red and can be used for the examination of color sense. These instruments can be pushed out through openings at the end of the handle.

The steel needle and stick are set upon excellent steel springs, which arrangement allows them to snap back when not in use. When pushed out and in use they are held by small

grooves on the sides. The center one, or camel's hair brush, is simply pushed out.

The shank connecting the head and handle of the instrument cannot be pulled out, nor can it be moved from side to



Above, neurologic percussion hammer with parts pulled out and different instruments protruding from the tubes of the handle; below, instrument closed and compact.

side, as there is a grooved channel on the shank and pin that fits into it which permits no lateral displacement.

355 East One Hundred and Forty-Ninth Street.

#### A MODIFICATION OF THE ODÉN BANDAGE FOR THE THORAX

EDWARD M. LIVINGSTON, M.D., NEW YORK

The Odén<sup>1</sup> bandage for the thorax (Fig. 1) is a bandage of marked superiority over the usual combination of bandages used to cover the shoulders and thorax. The originator employed it merely as a bandage of the thorax, the vertical turns acting as slings or supports to insure additional security.<sup>2</sup> The shoulder portion, however, is quite as useful as the thoracic; and as well as possessing the virtues originally claimed for it, the bandage proves ideal for retaining dressings to both shoulder and chest, in extensive burns, after removal of tumors, etc. In extending the application of the bandage to these cases, three main objections might be made: 1. The vertical turns do not fit well on the shoulders. 2. There is a tendency for the vertical turns to slip over the shoulder tip. 3. Dressings in the infraclavicular fossae and suprascapular regions tend to slip from beneath the loose vertical turns of the bandage.

To obviate these faults, the following modifications are suggested: (a) That the shoulder portion be made with oblique rather than vertical turns, as a dressmaker would fit a collar, that the normal obliquity of the shoulders may be met. (b) After completing the turns of the original bandage, one should continue with the first roller, the horizontal roller, to form a figure of eight over the affected shoulder and through the opposite axilla, this second modification preventing the bandage from slipping over the shoulder tip and likewise making pressure in the infraclavicular and suprascapular regions.



Fig. 1.—Odén bandage: at left, method of applying; at right, bandage covering desired area.

The accompanying sketches illustrate these modifications of the bandage which might, therefore, be thus applied:

1. The first roller is begun with its initial extremity over the junction of the manubrium with the body of the sternum.

1. Odén, C. L. A.: A Practical Bandage for the Thorax, J. A. M. A. 76: 174 (Jan. 15) 1921.

2. Personal communication from the originator.



A horizontal turn or two around the thorax at this level fixes the bandage.

2. The second roller is started at the same point, but is directed upward to the base of the neck on the affected side; over the shoulder; and down the back obliquely to a point opposite the starting point. The bandage is here caught by the next horizontal turn of the first roller (like a recurrent bandage of the head).

3. The procedure is continued in this fashion, descending horizontal turns being made with the first roller, catching turns of the second roller, both anteriorly and posteriorly, as the shoulder is being covered. One should progress toward the tip of the shoulder with the roller number two, overlapping previous turns by one half.

4. When the desired portions of both the thorax and the shoulder are covered, the first roller is continued obliquely across the back; up over the affected shoulder; into the affected axilla; back up over the affected shoulder; across the chest into the unaffected axilla, and obliquely downward across the back, where the bandage is terminated by pinning; i. e., a figure of eight is superimposed upon the original bandage, the first roller being utilized for this purpose.



Fig. 2.—Modification of Odén bandage: at left, method of applying; at right, bandage covering desired area.

5. If it is desired also to cover the second shoulder, similar recurrent turns may be made with a third roller, or the second roller may be utilized, a V being formed both anteriorly and posteriorly.

172 Lexington Avenue.

#### AN AID IN THE DEMONSTRATION OF TUBERCLE BACILLI IN CEREBROSPINAL FLUIDS \*

J. V. COOKE, M.D., ST. LOUIS

The difficulty in demonstrating tubercle bacilli in all cases of tuberculous meningitis is best appreciated by those who examine the spinal fluids. Those instances in which the organisms are not found are possibly due in part to the small number present, but many times the lack of a satisfactory preparation seems to be the essential fault. It is generally agreed that the thin fibrinous clot which forms in such fluids encloses the bacteria, and that stained preparations of this "film" offer the best chance of finding the organisms. The manipulation of these delicate elastic skeins of fibrin, and their removal from the fluid onto a glass slide for staining, are especially vexatious. The fibrin adheres to the needle and has a marked tendency to contract into a small, tough ball which cannot be teased apart. Only thin preparations are of value for staining, since thick ones cannot be sufficiently decolorized for satisfactory examination.

The technic here described has greatly facilitated the transfer of the fibrin clot to the slide with a minimum of handling and distortion, and has consequently rendered easier the demonstration of tubercle bacilli. The hope that others who have had difficulty with the fibrin films may likewise find the method useful is sufficient excuse for calling attention to what seems at first sight to be a rather trivial or insignificant manipulation.

The test tube containing the spinal fluid with the "film" is shaken gently to detach the fibrin from the sides or bottom of the tube, and the entire contents of the tube are poured on the surface of a clean glass plate. A convenient size for these is 3 by 6 to 8 inches (7.5 by 15 to 18 cm.), and such

plates may be easily cut from window glass or from discarded roentgen-ray plates from which the emulsion has been removed. From 10 to 15 c.c. of liquid will not overrun the edges of such a plate if moderate care is used in pouring it out. The fibrin film is not distorted and floats in the liquid on the flat surface. The excess of spinal fluid may be drained off by a pipet or blotting paper, and while still moist the fibrin may, if necessary, be rearranged somewhat by a teasing needle. After drying in the air, the film is stained in the usual way. Since the glass plate is too large for use on the microscope stage, that portion bearing the stained film is cut down to 1 by 3 inches (2.5 by 7.5 cm.).

#### REPORT OF A CASE OF WOOD ALCOHOL POISONING WITH UNUSUAL COMPLICATIONS

SAMUEL BARBASH, M.D., ATLANTIC CITY, N. J.

Nov. 4, 1920, J. H. was admitted to the Atlantic City Hospital in a state of active delirium. He had been given a drink of whisky containing wood alcohol. He could not answer questions, and kept up a rambling chatter. He did not know where he was nor how he got there.

He was of good height, about 50 years of age, and well nourished but flabby. He could see and distinguish fingers, and count them. The next day he could see not at all, or if so, for just a second or two.

His family and personal history was negative. He said that he had been a heavy drinker for some years.

He consulted a physician before entering the hospital for an attack of nausea, due in all likelihood to his drinking. He was constipated.

After a day or two in the hospital, he had considerable meningeal irritation with positive Kernig's and Babinski's signs, and a lumbar puncture was performed, 41 c.c. of slightly turbid fluid being withdrawn. It came out in a good stream, indicating considerable pressure. After the lumbar puncture, he quieted down and did not attempt to get out of bed for a while, whereas previously it had been necessary to use restraint, as he was always trying to get out. The blood pressure was 160 systolic and 100 diastolic. The spinal fluid was sterile for organisms. Spinal fluid Wassermann and blood Wassermann tests were both negative. Blood examination revealed 3,220,000 red blood cells; 7,200 white blood cells; 50 per cent. hemoglobin; 73 polymorphonuclears, 26 lymphocytes and 2 large mononuclear cells. The color index was 7+. The red blood cells were slightly irregular in size and shape. The urine was normal, except for a faint trace of albumin.

For the first eight days after admission, the patient seemed to be slowly progressing toward recovery. He was less noisy, but had to be restrained. He was able to answer a question or two, and then would lapse into his mental confusion. He took his nourishment well.

On the ninth day it was noticed that his pulse could not be obtained at the right wrist, and the fingers became slightly bluish. On following up the radial artery we found that no pulsation could be obtained, and it was not until we palpated and auscultated the axillary artery that we obtained any pulsation whatever. After the first day of discovery, the point at which pulsation could be felt receded toward the axillary about 1 inch (2.5 cm.) before it stopped. The fingers were bluish and cold, and there was absence of sensation to the hand, and diminution but not absence of sensation to the elbow. The circulation to the upper arm and forearm was partly sustained by collateral circulation. The hand received very little blood, but still enough to feed the fingers for some days before gangrene became complete.

A coagulation time test showed one minute and forty seconds.

November 19, six days after this condition was noted, Dr. H. I. Silvers opened the artery and endeavored to remove the thrombus, but unfortunately the entire arterial tree of the forearm and hand was filled with clot and the operation was unsuccessful: circulation could not be reestablished.

Following the attempt to remove the thrombus, the patient's hand gradually became more and more cyanotic and the collateral circulation to the hand became more and more impaired, until the hand had become gangrenous with the

\* From the Department of Pediatrics, Washington University School of Medicine and the St. Louis Children's Hospital.



exception of the little finger, which had some blood supply. Within two weeks the hand was completely gangrenous, and a line of demarcation had established itself at the wrist.

A few days afterward, Dr. Silvers amputated the hand, wrist and the distal end of the forearm. In order to obtain tissues with a good blood supply, the amputation was done at the middle of the forearm. The stump was slow in healing, and drained for a number of months. Finally, a sequestrum of bone was removed from the remaining portion of the ulna, before healing was complete. It was also necessary to keep the stump warm in order to maintain a good blood supply to the parts.

The medical treatment in this case was entirely symptomatic. At first the patient received sedatives, such as morphin and atropin, bromids and paraldehyd. Strychnin sulphate was given for the tonic effect, and potassium iodid for the alterative effect. Sodium citrate was given for a number of days, and we were able to bring the coagulation time test up to six minutes and thirty seconds by Jan. 14, 1921. The blood pressure dropped to 132 systolic and 80 diastolic. The lumbar puncture seemed to relieve the meningeal irritation and did not have to be repeated.

Sodium bicarbonate was given in the beginning in 1 dram (4 gm.) doses, frequently administered.

The patient today is able to walk about, having regained his sight to some considerable extent. His mind, while very much clearer than before, is still not normal. He shows signs of mental confusion.

I have been unable to find any record of thrombosis following wood alcohol poisoning.

1902 Pacific Avenue.

## New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**BUTYN.** — Paraminobenzoyl-gammadinormalbutylamino-propanol sulphate.— $[\text{NH}_2\cdot\text{C}_6\text{H}_4\cdot\text{COO}(\text{CH}_2)_3\cdot\text{N}(\text{C}_4\text{H}_9)_2]_2\cdot\text{H}_2\text{SO}_4$ . The normal sulphate of a base resembling the base of procaine (paraaminobenzoyl-diethylaminoethanol); but it differs in that butyn possesses a butyl group in place of the ethyl group of procaine base, and a propanol group in place of the ethanol group.

**Actions and Uses.**—Butyn is a local anesthetic proposed as a substitute for cocaine, particularly in surface anesthesia, as for the eye, nose and throat. It has the special advantage of acting through intact mucosae almost as effectively as cocaine. On the normal human eye, a 0.5 per cent. solution of butyn is less effective than a 1 per cent. solution of phenacaine (holocaine), but more efficient than a 1 per cent. solution of cocaine or a 1 per cent. solution of eucaine. Butyn solutions are nonirritant.

When injected hypodermically into albino rats, the toxicity of butyn is two and one-half times that of cocaine; but the lethal dose (injected intravenously into cats) is about equal to that of cocaine. Pharmacologic study indicates that butyn may take the place of cocaine, in whole or in part, for surface anesthesia of mucous membranes and that it may be superior for this purpose, especially for use in the eye, to other anesthetics, for the reason that it can be used in materially lower concentrations (presumably because of more prompt absorption). On the other hand, it does not appear promising for injection anesthesia or for spinal anesthesia, since its toxicity is materially greater than that of procaine.

A committee of the Section on Ophthalmology of the American Medical Association (*J. A. M. A.* 78:343 [Feb. 4] 1922) reports the successful use of butyn in practically all operations on the eye and in some operations on the nose and throat. The committee concluded that butyn is more powerful

than cocaine, a smaller quantity being required; that it acts more rapidly than cocaine, and that the action is more prolonged. So far as the experiences of the committee go, butyn in the quantity required is less toxic than cocaine. The committee found butyn superior to cocaine in that it produces no drying of the tissues and no change in the size of the pupil and that it has no ischemic effect.

**Dosage.**—For ophthalmologic work, butyn is generally used in 2 per cent. solutions. A single application produces, within one minute, an anesthesia sufficient to permit the removal of superficially placed foreign bodies, the application of irritant astringents and the use of the tonometer. Four instillations, three minutes apart, permit operative work within five minutes after the last instillation, producing an anesthesia sufficient to perform all of the commoner operations on the eye. In nose and throat work, solutions of from 2 to 5 per cent. are usually employed. Butyn solutions may be sterilized by boiling.

Manufactured by The Abbott Laboratories, Chicago. U. S. patent 1,358,751 (Nov. 16, 1920; expires 1937). U. S. trademark 147,893.

*Butyn Solution, 2 per cent.*

*Butyn Tablets, 0.2 Gm. (3 grains).*

*Butyn and Epinephrin Hypodermic Tablets:* Butyn 0.01 Gm. ( $\frac{1}{100}$  grain), epinephrin-Abbott, 0.05 Mg. ( $\frac{1}{1250}$  grain).

Butyn is a colorless, odorless solid which rapidly produces a sense of numbness when placed upon the tongue.

It melts at from 98 to 100 C.

Butyn is soluble in less than its own weight of water at 20 C. It dissolves slowly in cold water, but rapidly in hot water. It is very soluble in warm alcohol and in acetone, from which it does not readily separate on cooling. It is slightly soluble in chloroform, and insoluble in ether.

From aqueous solutions of butyn, alkali hydroxides, carbonates, and bicarbonates precipitate the free base as a colorless oil. When the separated base is exactly neutralized with hydrochloric acid, the white hydrochloride crystallizes out; after drying at 100 C., these crystals melt at 151 C.

Dissolve one gram of butyn in 10 Cc. of water. Separate portions of the solution yield a white precipitate with potassium mercuric iodide solution; a brown precipitate with iodine solution; a brown precipitate with gold chloride solution; and a yellow precipitate with picric acid solution. A portion to which barium chloride solution is added gives a white precipitate (*distinction from procaine*).

Dissolve about 0.1 Gm. of butyn in 5 Cc. of water, add 2 drops of diluted hydrochloric acid and 2 drops of sodium nitrite solution (10 per cent.) and mix with a solution of 0.2 Gm. of betanaphthol in 10 Cc. of sodium hydroxide solution (10 per cent.). A scarlet red precipitate is formed (*distinction from phenacaine which gives a white precipitate*).

To a solution of about 0.1 Gm. of butyn in 5 Cc. of water, add 3 drops of diluted sulphuric acid and mix with 5 drops of potassium permanganate solution. The violet color of the latter disappears immediately (*distinction from cocaine*).

Dissolve about 0.1 Gm. of butyn in 1 Cc. of sulphuric acid. The solution is colorless (*organic impurities*).

Dissolve 0.1 Gm. of the salt in 10 Cc. of water and saturate with hydrogen sulphide. No coloration or precipitation occurs (*salts of heavy metals*).

Incinerate about 0.5 Gm. of butyn, accurately weighed. There is not more than 0.2 per cent. residue.

**PITUITRIN "O."**—Pituitrin obstetrical. An extract of the posterior lobe of the pituitary body of cattle, free from chemical preservatives, approximately two and one-half times the strength of Solution of Hypophysis, U. S. P. It is standardized according to the method of Hamilton and Rowe (*J. Lab. & Clin. Med.* 2:120 [Nov.] 1916).

**Actions and Uses.**—See general article, Pituitary Gland (New and Nonofficial Remedies, 1921, p. 219).

**Dosage.**—From 0.2 to 1 Cc. (3 to 15 minims), hypodermically or intramuscularly.

Manufactured by Parke, Davis and Co., Detroit. No U. S. patent. Trademark 76,722.

*Ampoules Pituitrin "O," 0.5 Cc.*

*Ampoules Pituitrin "O," 1 Cc.*

**SOLUTION OF POST-PITUITARY-G. W. CARNRICK CO.**—An extract of the posterior lobe of the pituitary body of cattle, free from chemical preservatives. It is standardized by the method of G. B. Roth (Bull. 100, U. S. Hygienic Laboratory) so that 1 Cc. diluted twenty thousand times has the same activity on the isolated uterus of the virgin guinea-pig as a 1:20,000,000 solution of betaaminazolyethylamine hydrochloride.

**Actions and Uses.**—See general article, Pituitary Gland (New and Nonofficial Remedies, 1921, p. 219).

**Dosage.**—See Solution of Hypophysis (New and Nonofficial Remedies, 1921, p. 221).

Manufactured by G. W. Carnrick Co., New York. No U. S. patent or trademark.

*Ampules Solution of Post-Pituitary-G. W. Carnrick, 1 Cc.*



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SATURDAY, FEBRUARY 11, 1922

## CAN HUMAN CANCER BE TRANSPLANTED INTO LOWER ANIMALS?

At least as far back as the time of Peyrilhe, 1773, attempts were made to inoculate human tumors into animals, but none have as yet met unequivocal success. Since most unsuccessful experiments do not appear in print, the total number of these attempts must have been enormous, in view of the many that have been reported. The recent study of transplantable tumors in animals has produced little to encourage the notion that human tumors can be readily transplanted to the body of a laboratory animal, since the striking characteristic of transplantable tumors is the extreme degree of specificity they exhibit in respect to the necessary identity of donor and recipient. Mouse cancers will not grow when transplanted into rats, and usually they can be implanted successfully only into the very same race of mice, often only into other mice of the same particular breeding stock or of the same immediate ancestry. A sarcoma transplanted readily from white rat to white rat usually will not grow in a wild gray rat, and perhaps not even in hybrids between white and gray rats. As far as human tumors go, the literature has records of actual attempts to transplant cancer even from man to man without success, and hence the chance with an animal recipient would be small indeed, unless extended experiments with anthropoids were possible; a few such have been tried, with only negative results.

Keysser<sup>1</sup> points out as the minimum requirement for establishing successful cancer transplantation that (1) the resulting new growth must appear at the point of inoculation; (2) it must correspond in microscopic structure with the inoculated tumor, and (3) it must exhibit progressive growth and be susceptible of further repeated inoculation into other animals of the same species. To the criteria of Keysser's list we might also add insistence on exclusion of the possibility that the tumor is a spontaneous growth of the recipient animal. Applying the standard described, Keysser finds himself unable to accept as proved any of the

cases reported as transplantation of human tumors into lower animals. The commonest error undoubtedly is the mistaking for sarcoma of granulation tissue masses replacing inoculated tumor material. Among the most suggestive reports is that of Dagonet, who inoculated a lymph gland metastasis of a human penis carcinoma into the peritoneal cavity of a rat, observing a year later nodules in the mesentery and liver which resembled the human growth in consisting of hornified epithelium. In view of the capacity of hornified epithelium to retain vitality under unfavorable conditions, the possibility exists that these nodules were not actual growths but merely surviving cells, especially as no transplantations were attempted. Lewin did succeed in transplanting a round cell sarcoma found in a dog after inoculation of a human ovarian carcinoma, but here the discrepancy in structure between the implanted tumor and the one found in the dog raises doubt as to their relationship.

Keysser can find no better cases than these in the literature, but reports his own results with a metastatic nodule from a human scrotal sarcoma injected into the livers of ten mice. In the liver and spleen of one of these mice, nine months later, nodules of sarcoma structure were observed which were successfully inoculated into many subsequent generations of mice. This is the only success obtained by Keysser in many experiments extending over several years, and is ascribed to selecting a tumor of maximum resistance, as shown by its having continued to grow rapidly in spite of radium treatment and attempted immunization, or sensitization to the radium, by injection of tumor autolysates. Even this case is not completely conclusive, for the period of nine months between inoculation and the finding of the growth is a long period in the lifetime of a mouse. Furthermore, sarcomas are not as free from possibilities of misinterpretation as carcinomas, and spontaneous sarcomas and sarcoma-like growths have been observed not infrequently within the abdominal cavities of laboratory mice. The possibility of securing transfer of a true neoplasm between species so remote as man and mouse is so small in view of the failure to secure transfers between much more closely related species, such as the rat and the mouse, that only the most completely convincing results can be accepted. We should at least demand more than one such successful experiment before accepting as proved so heterodox a phenomenon.

Nevertheless, we must admit that we have no *a priori* reason for denying that transplantation between widely separated species is possible, and there is some evidence in favor of the opposite conclusion. For instance, of late several Japanese experimenters have been describing the inoculation of incubating eggs with tumor tissue. This is readily done with fowl tumors, and sometimes cells from mammalian tumors, even from human cancers, have taken hold and grown

1. Keysser, F.: Uebertragung menschlicher maligner Geschwülste auf Mäuse, Arch. f. klin. Chir. 114: 730, 1920.



in the developing fowl ovum.<sup>2</sup> These growths are necessarily of too short duration to correspond to an actual inoculation of a living animal with a cancer; for, commonly enough in transplantation experiments, inoculated cells live for a short time in a foreign host, and even grow a little, only to disappear sooner or later. It also is to be mentioned that several Japanese workers recently report in abstract successful transplantations of carcinomas and sarcomas between rats and mice and even more divergent species; but as yet sufficient details have not come to us to permit of their evaluation. We cannot fail to point out, however, the large amount of experimental cancer investigation that is now going on in Japan, largely inspired by Professor Yamagiwa of the University of Tokyo and his success in producing cancer in animals by painting tar on the skin, a method which, as Murray says in the latest report of the Imperial Cancer Research Fund of London, "is bound to take a prominent place in the experimental study of the origin of cancer." These, and other contributions along the same line, indicating at least partial success in transplanting tumors into alien species, make further progress in this direction seem possible. Presumably, if human tumors could be set growing in laboratory animals, something new might be learned about them; but in all probability we shall learn more about cancer from studying its behavior in more receptive and less unnatural environments.

#### CLINICAL SPIROMETRY AND THE VITAL CAPACITY OF THE LUNGS

The expression "vital capacity" of the lungs has long been employed to designate the quantity of air that can be breathed out by the deepest possible expiration after the deepest possible inspiration. It is regarded as a rough measure of lung capacity, and has long been determined in the physical examination of persons engaged in gymnastic exercises. The vital capacity shows a considerable range in absolute values determined for admittedly healthy, normal persons, the variations being accounted for largely by the differences in the size of the individuals examined; an average figure for an adult man is 3,700 c.c. The data in regard to this factor are usually secured by spirometry.

It seems almost obvious that any considerable decrease in the vital capacity of a person must represent a decided physiologic disadvantage. For example, interference with pulmonary ventilation may occur when a pleural effusion arises; and the difficulty presents itself in any form of pulmonary atelectasis. More than half a century ago it was proposed to use the study of the vital capacity of the lungs as an aid in the diagnosis of pulmonary diseases, notably tuberculosis. Not until recently, however, when vital

capacity measurements often were a decisive factor in the selection of candidates for the aviation services of the armies at war, was attention directed again to the subject. The new interest in the problems has been stimulated particularly by Dreyer in Great Britain and by Peabody and his associates in this country. The measurement of vital capacity appears to be a simple and harmless method of determining the actual physical fitness or limitations of a patient. In pulmonary tuberculosis, Wittich, Myers and Jennings<sup>1</sup> have come to the conclusion that it will aid materially in the accurate classification of the cases, and in determining the progress of the disease and the influence of treatment. Likewise the Boston investigators<sup>2</sup> assert on the basis of clinical observations that the vital capacity of the lungs is of especial interest in heart disease, as well as in pulmonary tuberculosis, serving in both these conditions as an index of the clinical condition of the patient. As the disease becomes more severe, the vital capacity falls; and when the patient improves, the vital capacity increases and approaches the normal.

It is not difficult to understand how a pleural effusion can interfere with the movement of the lungs and thereby reduce the vital capacity. Peabody and Sturgis,<sup>3</sup> however, have pointed out that in heart disease the circumstances are often less simple. The tendency to dyspnea on exertion increases progressively as the vital capacity falls, and there is abundant evidence to indicate that the interference with pulmonary ventilation is an important factor in producing dyspnea; but, particularly in the early stages of heart disease, an increased tendency to dyspnea associated with a decrease in vital capacity may be present without any physical signs of involvement of the lungs or pleural cavities. The question is thus raised as to whether the low vital capacity in heart disease depends on the fact that cardiac patients are feeble and easily fatigued. An answer has been secured by observations recently concluded in the Medical Clinic of the Peter Bent Brigham Hospital. The vital capacity was tested in patients with great physical weakness but without disease of the heart or lungs. Most of them were suffering from pernicious anemia, a disease which exhibits general weakness and tendency to dyspnea on exertion as outstanding symptoms. The results showed surprisingly little variation from normal pulmonary ventilation, being in no instance less than 74 per cent. of the expected "normal" based on body surface. As patients with severe heart disease may have a vital capacity that is 75 per cent. below the normal, whereas

1. Wittich, F. W.; Myers, J. A., and Jennings, F. L.: A Study of the Effects of Pulmonary Tuberculosis on Vital Capacity, *J. A. M. A.* **75**: 1249 (Nov. 6) 1920.

2. Peabody, F. W., and Wentworth, J. A.: Clinical Studies on Respiration, *Arch. Int. Med.* **20**: 443 (Sept.) 1917. McClure, C. W., and Peabody, F. W.: Relation of Vital Capacity of Lungs to Clinical Condition of Patients with Heart Disease, *J. A. M. A.* **69**: 1954 (Dec. 8) 1917.

3. Peabody, F. W., and Sturgis, C. C.: Clinical Studies of the Respiration, VII, The Effect of General Weakness and Fatigue on the Vital Capacity of the Lungs, *Arch. Int. Med.* **28**: 501 (Nov.) 1921.

2. Kiyono, Sueyasu and Tsuiji: Inoculation of Fowl Embryos with Human Cancer Tissue, *Gann (Japanese Journal of Cancer Research)*, **13**: 1 (March) 1919.



the weakest persons without cardiac involvement tested by Peabody and Sturgis exhibited a decrease of not more than 26 per cent., it seems unlikely that weakness per se will account for a decrease in the vital capacity of the lung amounting to more than 20 or 30 per cent. below normal standards.

Nor did specially devised attempts to fatigue the respiratory apparatus furnish any further evidence that fatigue and general weakness are important elements in reducing the vital capacity of the lungs in heart disease. Repeated tests of the vital capacity were made every fifteen seconds for ten minutes in patients with severe cardiac disorder. The exertion involved was considerable, but no evidence of fatigue of the muscles of respiration was observed. The volume of the maximum expiration was as great at the end of the series of tests as at the beginning. Athletics and physical exercise may improve the vital capacity of healthy persons to the extent of 30 per cent. above the average normal. The general range of increase of vital capacity above the normal standards associated with the best physical training is thus approximately the same in amount as the decrease below the standards due to extreme physical weakness.

#### THE RELATION OF GALLSTONES TO PEPTIC ULCER

Gallbladder disease, appendicitis and peptic ulcer are so frequently found in the same patient that we are justified in assuming this association to be more than accidental. It has long been held that appendicitis could cause cholelithiasis through the carrying of bacteria from the appendix to the liver in the portal vein to be excreted in the bile. If the organisms are delayed in the gallbladder by a stagnation of bile, they may cause stones. Any other infection in the portal system may act in the same way. Kelling<sup>1</sup> briefly recalls the various theories of the causation of duodenal ulcer, such as toxemia and stasis from chronic appendicitis and reflex spasm of the duodenal vessels resulting in necrosis, and proposes the theory that the cocci excreted in the bile are rubbed into the follicles of the duodenum by the active peristalsis. Small abscesses result, and ulcers follow. Malpositions of the duodenum and a diet poor in alkaline salts are considered as secondary factors in the process.

The differential diagnosis between gallstones and peptic ulcer is a more common problem to the practitioner than is the question of etiology. Kelling agrees with Barker<sup>2</sup> and Cheney<sup>3</sup> that all the symptoms of duodenal ulcer may be duplicated by gallstones. He explains that the patient cannot differentiate between gallbladder contractions and the pyloric con-

tractions. He favors Carlson's view that the pain of ulcer is due to the peristaltic action in the ulcerated area. A gallbladder that empties with difficulty gives a pain two or three hours after eating which cannot be distinguished from the pain of ulcer. During early digestion the gallbladder fills. It attempts to empty at the height of digestion or as soon as the acid chyme reaches the duodenum. Stones may be driven into the cystic duct along with the bile. Painful contractions result. The acid from the stomach stimulates contractions of both the gallbladder and the duodenum. Food and alkali relieve the pain of gallbladder disturbance as well as that arising from ulcer. The painful contractions do not reappear if the stimulus, free acid, is eliminated. According to Kelling, gallstones may even duplicate the night distress of ulcer. Physiologists have shown that, during sleep, the whole gastrointestinal tract has slow rhythmic contractions for thirty minutes at two-hour intervals. This night peristalsis is shown by the gallbladder as well as by the stomach and duodenum. The bladder fills with bile in the intervals. Any stones forced out with the bile cause obstruction and pain. The proximity of the gallbladder, duodenum and pylorus with their associated nerve supply goes far to explain the similarity of symptoms. Kelling mentions a few of the major differential points. Typical colics with icterus speak, of course, for gallbladder disease. Stones in the cystic duct often settle the diagnosis by making the gallbladder palpable. The gastric acidity is lowered or absent in more than one third of gallbladder cases. It is very uncommon for the free acidity to be decreased in ulcer cases. Gross blood in the stools or vomitus indicates ulcer, but occult blood may result from ulcerated gallbladders. The roentgen ray may be useful in some cases.

It is probably more than a coincidence that the same person should so commonly show pathologic changes in both the gallbladder and the duodenum. Kelling has added a pathogenic relation to the well established anatomic and physiologic connections of the two structures. His conclusion, and the fact that such a pathologic combination is frequently seen, emphasize the need of more case reports and close observation of operative and necropsy material.

**Hookworm Disease in Nicaragua.**—The government of Nicaragua has issued illustrated reports of the work accomplished by the uncinariasis department from Oct. 1, 1919, to Sept. 30, 1921. The director of the department is Dr. D. M. Molloy of the Rockefeller Foundation, and the assistant director, Dr. J. D. Tijerino. Up to Sept. 30, 1921, 159,844 persons had been examined, and 104,267, i. e., 65.24 per cent., were found infected. During the year Oct. 1, 1920 to Sept. 30, 1921, 41,423 treatments were given and 10,467, i. e., 41.23 per cent., were cured. Hookworm work was carried out during the year in the cities of Managua, León, Granada and Rivas; in the towns of San Jorge, Buenos Aires, Potosí, Belén, Tola, and the rural districts of Rivas, San Jorge, Buenos Aires, Potosí, Belén and Tola. Quite a number of popular lectures were given during the year, and much literature was distributed. The government report is very well illustrated and constitutes an interesting record of the work so far accomplished.

1. Kelling: Die Beziehungen zwischen Cholelithiasis und Ulcus Duodeni, Arch. f. Verdauungskr., June, 1921.

2. Barker, L. F.: Hints for Diagnosis of Disease of Gallbladder and of Biliary Passages, J. A. M. A. 75: 1104 (Oct. 23) 1920.

3. Cheney, W. F.: Diagnosis of Gallbladder Disease, Am. J. M. Sc. 160: 469 (Oct.) 1920.



## Current Comment

### THE SHEPPARD-TOWNER BILL—PUBLIC HEALTH OR POLITICS?

At a recent meeting of a medical society, a member asked, "Why didn't the A. M. A. prevent the passage of the Sheppard-Towner bill?" The same question has been asked many times by others. The Sheppard-Towner bill was passed, not for public health reasons but on account of political exigencies. Women had just been given the vote. No one knew how they would use it. Nearly every congressman had a distinct sense of faintness at the thought of having all the women in his district against him. Male opposition he was used to. But the women's vote! Awful thought! Suppose all the women voted against him! Shrewdly and persistently, the idea was impressed on the minds of the women of the country that the Sheppard-Towner bill was a wonderful measure; that in some miraculous fashion it would save thousands of lives of mothers and babies now being lost; that it was the one bill all women must support. At the same time, all members of Congress were told again and again that the women of the country demanded the measure and that each congressman's future depended on his vote on this bill. Members of Congress of years' experience say that the lobby in favor of the bill was the most powerful and persistent that had ever invaded Washington. As the presidential campaign approached, the apprehension increased. Each party wanted the women's vote. The Democratic party specifically endorsed the bill in their platform. The Republican platform did likewise but somewhat vaguely. Republican politicians perhaps feared the contrast. Presumably to offset this Democratic bid for women's votes, Mr. Harding in his campaign speeches practically pledged his party to the passage of the bill. In his first message to Congress, he specifically endorsed it and called on the Republican majority in Congress to pass it.<sup>1</sup> His personal medical representative, and several other influential medical men, appeared before the House committee and urged its passage. But as passed by the Senate, it was an impossible measure. The House Committee on Inter-State and Foreign Commerce, unable to accept the original Senate bill, but under strong pressure and orders from above to report out some bill, struck out the old one completely, substituted an entirely new bill, which is practically only an appropriation measure, and reported "that the bill should pass." The party leaders all fell in line. Finally, just before the vote was taken, the floor leader of the Republican majority, Mr. Mondell, in a ten-minute speech, said nothing about the merits of the bill but did say that he believed in keeping pledges and that he asked all the Republicans in the House to vote for it. The result, as might have been expected,

was that the bill passed by a vote of 279 to 39. The passage of the bill could not have been prevented. Its adoption, under the circumstances, was a political necessity and a redemption of party pledges. We repeat: It was not passed as a health measure; its inception, the agitation for its passage and its support up to the final adoption were political. There were just two factors: the women's vote and the politicians' fear. So much for the political situation. While *THE JOURNAL* realized that it was fighting almost a lost cause, it did, nevertheless, oppose the measure most vigorously, both by utilizing its columns and by furnishing congressmen with arguments and data against the bill. In fact, several congressmen in opposing the bill quoted directly from *THE JOURNAL*'s editorials to indicate the attitude of the medical profession. *THE JOURNAL* believes that its opposition had much to do with the modification of the original Senate bill to the bill which finally passed—a bill which resembled in name only the original Sheppard-Towner bill and which is less objectionable. The bill as finally passed, it should be remembered, is merely an appropriation act and makes it optional with the individual states to accept federal funds made available by it.

### TYPHOID VACCINATION AND HEART DISEASE

For nearly two years past, the opponents of vaccination and disease prevention have been parading as their champion a Dr. Walter R. Hadwen of England. This gentleman's standing as a scientific authority has been pretty thoroughly aired. In two addresses, one in Philadelphia and one in Boston, he made the statement that the British government was paying £4,000,000 (\$20,000,000) per year pensions to soldiers invalided and discharged from the British army for heart disease. He also asserted that nine tenths of these cases were due to typhoid vaccination. This astonishing charge was brought to the attention of Sir Thomas Goodwin, Director-General of the British Army Medical Service, by Major General Merritte W. Ireland, Surgeon-General of the United States Army. The correspondence appeared in *THE JOURNAL*, Jan. 21, 1922, p. 233. In his reply, General Goodwin states officially that the deductions made by Dr. Hadwen are entirely contrary to the facts and that the true causes of the cardiac troubles for which pensions were being paid had been established by careful investigation by highly qualified experts. This investigation showed that between 50 and 60 per cent. of all heart cases were the result of infections, especially rheumatic fever, chorea, pneumonia, pleurisy, bronchitis, influenza, diphtheria, scarlet fever, trench fever and dysentery. Investigation of a special group showed that heart lesions had been present in 43 per cent. on admission to the service, that 12 per cent. developed heart symptoms during training, and that 45 per cent. developed them in active service as the result of shock, wounds, burns, accident, gas poisoning, strain and alcohol, and that not a single case of heart disease had occurred which could be attributed to typhoid vaccination. This question, says General Goodwin, was made the subject

1. President Harding in his Annual Message to Congress, April 12, 1921, says: "In the realms of education, public health, sanitation, conditions of workers in industry, child welfare, proper improvement and recreation, elimination of social vice, and many other subjects, the Government has already taken a considerable range of activities. I assume that the maternity bill, already strongly approved, will be enacted promptly, thus adding to our manifestations of human interest."



of special inquiry in the B. E. F. during the war, and no evidence of any harmful effects was found. On the contrary, the records of the British War Office show that in the Boer War from 1899 to 1902, with a mean annual strength of only 208,226, there were 57,684 cases of typhoid and 8,022 deaths, an annual death rate of 14.6 per cent. In the World War, with a mean annual strength of 2,000,000, or almost exactly ten times as many men as in the Boer War, there were only 20,139 cases of typhoid and 1,191 deaths, an annual death rate of 0.139 per cent., or less than one-one hundredth of the death rate of the Boer War. Commenting on General Goodwin's letter, General Ireland states that our own War Department records show that, out of a total of 4,128,478 men in our army from April 1, 1917, to Dec. 31, 1919, there were 1,529 cases of typhoid and 227 deaths, or 0.0054 per cent. Dr. Hadwen's "facts" and "deductions" seem to be of the sort peculiar to his kind. They sound impressive, but they will not bear examination.

#### THE BLIND POPULATION

Improvement in medical knowledge and in education of the public are the contributing causes for a decrease in the blind population of the United States from 57,272 in the census of 1910 to 52,617 in 1920, according to an announcement made by the Bureau of the Census. The figures show that there are 49.8, or nearly fifty, blind persons to every hundred thousand population, or an average of one blind person to every 2,000 population. Males predominate over females with about three to two. Blindness was most common among Indians, with about 200 blind for every hundred thousand in the population. Negroes also had a comparatively large amount of blindness, with 60 blind per hundred thousand population. There are 48.3 blind per hundred thousand white persons, and only 23.2 per hundred thousand Chinese and Japanese. Of the geographic divisions, New England has the greatest amount of blindness, with 63.5 per hundred thousand population, while the least was the West South Central states, which had but 41.6 per hundred thousand. Of the states, New Mexico has 153.2 per hundred thousand, while, at the opposite extreme, Wyoming had only 15.4.

#### AGAIN, NO SHORTAGE OF PHYSICIANS

On another page we publish a report<sup>1</sup> on the scarcity of physicians in the rural districts of Pennsylvania. It shows that there is an overlarge supply of physicians in the cities of that state which more than offsets the lack of physicians in rural districts. This further corroborates the statements repeatedly made by THE JOURNAL, that, although physicians are scarce in rural communities, there is no scarcity of physicians in the country as a whole; the conditions referred to are found not only in Pennsylvania but in all the other states as well. The latest figures<sup>2</sup> show that Pennsyl-

vania is well supplied with physicians as compared with the rest of the country. It has one physician to every 768 people, while in the country as a whole there is one to every 726 people. This report makes no reference to the real reason why physicians are not in rural communities. In a conference in Kentucky held recently between the House of Delegates of the Kentucky State Medical Association and members of the legislature, this problem was the subject of a practical discussion. There it was clearly demonstrated that the lack of doctors in rural communities was not due to a general scarcity of physicians, nor to higher educational requirements, but to economic conditions—to the fact that physicians will not locate in districts where they cannot secure a reasonable income and where living conditions are poor. The saving of one or two years of time in intermediate and secondary education, as recommended in the Pennsylvania report, is indeed desirable; but that reform would have no effect whatever in supplying doctors for rural communities. It is quite clear that the only way by which physicians can be induced to locate in rural districts is to make those districts more attractive places in which to live, from the professional, social and economic points of view.

#### BACTERIOLOGY OF THE DUODENAL SECRETION

Since the introduction, in 1909, of the use of the duodenal tube for aspirating contents of the intestine beyond the pylorus, numerous applications, both diagnostic and therapeutic in purpose, have been suggested. The procedure has enabled the physiologic chemist to gain a clearer insight into the activity of the secretions in the upper parts of the small intestine and, in particular, to examine their digestive enzymes. The duodenal tube has also made possible the examination of intestinal contents bacteriologically. Thus, Hoefert<sup>1</sup> has recently reported from the Rudolf Virchow Krankenhaus in Berlin that, under normal conditions of health, carefully aspirated duodenal secretion is usually practically sterile. On the other hand, when the gastric secretion shows hypo-acidity or when there is an approach to anacidity in the stomach, the bacterial flora of the duodenal fluid is abundant. The determining factor in securing absence of micro-organisms is the hydrochloric acid of the gastric secretion. When this is depressed, the same varieties of bacteria which gain a foothold and thrive under that condition in the stomach are to be found in the duodenum. They may include *B. coli*, streptococci and staphylococci, along with yeasts. Aside from the anomalies of secretion that arise in the stomach, various disturbances and diseases, such as tumors, malformations and inflammation of the gastro-enteric tract, afford further favorable conditions for the growth of bacteria in the duodenum. The findings of Hoefert in Germany are by no means novel, for they were antedated by the comparable researches of MacNeal and Chace at the New York Post-Graduate Hospital. These investigators found that the bacteria counted microscopically in the fluids from the

1. Report of the Committee on Medical Education of the Philadelphia County Medical Society, p. 453.

2. See table on Proportion of Physicians to Population, J. A. M. A. 76: 1248 (April 30) 1921.

1. Hoefert, B.: Ueber Bakterienbefunde in Duodenalsaft von Gesunden und Kranken, Ztschr. f. klin. Med. 92: 221 (Nov. 15) 1921.



duodenum varied from 600 to 860,000 per cubic millimeter, the bulk of them being dead. Larger numbers of micro-organisms were found in the case of patients suffering from various diseases. Hence, gastro-enterologists have reached the conclusion that the number of bacterial colonies developed in cultures of duodenal fluid is, roughly, an index of the digestive derangement.<sup>2</sup> Furthermore, the bacteriologic study of the intestinal juice by the newer methods of duodenal aspiration may prove to be a valuable procedure in the early diagnosis of typhoid fever and in the detection of typhoid carriers.

## Association News

### ST. LOUIS SESSION

#### St. Louis Hotels

The Local Committee of Arrangements submits a list of St. Louis' leading hotels and indicates those which are designated as headquarters of the several sections. Those who desire hotel reservations are requested to write directly to

ST. LOUIS' LEADING HOTELS (ALL EUROPEAN PLAN), THEIR LOCATION AND RATES

Hotel, with Number of Rooms *	Street Address	Without Bath		With Bath	
		Single	Double	Single	Double
American, 275..... <i>Diseases of Children</i>	7th and Market Streets.....	.....	.....	\$2.50-3.00	\$4.00- 6.00
American Annex, 225..... <i>Pathology and Physiology</i> <i>Pharmacology and Therapeutics</i>	6th and Market Streets.....	.....	.....	2.00-3.00	3.00- 6.00
Beers, 114.....	Grand and Olive Streets.....	\$1.50	\$2.50	2.00-2.50	3.00- 3.50
Brevort, 50.....	4th and Pine Streets.....	.....	.....	2.00	3.00
Cabanne, 43.....	5545 Cabanne Street.....	.....	.....	12.00-37.50†	
Claridge, 350..... <i>Obstetrics, Gynecology and</i> <i>Abdominal Surgery</i>	18th and Locust Streets.....	.....	.....	2.50-4.00	4.00-10.00
Hamilton, 160.....	Hamilton and Maple Streets.....	.....	.....	2.00-2.50	3.50- 4.00
Jefferson, 400..... <i>Surgery, General and Abdominal</i> <i>Orthopedic Surgery</i>	12th and Locust Streets.....	2.50-3.00	4.00	3.00-8.00	6.00-10.00
Laclede Hotel, 265.....	6th and Chestnut Streets.....	1.50-2.00	2.50-3.00	2.50-3.00	3.50- 4.00
Majestic, 200..... <i>Dermatology and Syphilology</i> <i>Nervous and Mental Diseases</i>	11th and Pine Streets.....	.....	.....	2.50-3.00	3.50- 4.00
Marion Roe, 200.....	Broadway and Pine Streets.....	.....	.....	1.50-2.00	3.00- 4.00
Marquette, 400..... <i>Laryngology, Otology and Rhinology</i>	18th and Washington Streets.....	2.00-2.50	3.00-3.50	3.00-3.50	4.00- 6.00
Maryland, 240..... <i>Gastro-Enterology and Proctology</i> <i>Urology</i>	9th and Pine Streets.....	2.00	3.00	2.50-3.50	4.00- 5.00
Planters, 400..... <i>Ophthalmology</i>	4th and Pine Streets.....	2.00-2.50	3.00-3.50	2.50-5.00	4.00- 8.00
Plaza, 200.....	3300 Olive Street.....	.....	.....	2.00-2.50	3.50- 5.00
Roselle, 100.....	4137 Lindell Boulevard.....	.....	.....	1.50-2.50	2.50- 3.50
St. Francis, 120.....	6th and Chestnut Streets.....	1.50-2.00	2.50-3.00	3.00-4.00	4.00- 5.00
Statler, 650..... <i>Practice of Medicine</i>	9th and Washington Streets.....	.....	.....	3.00-7.00	5.50- 9.50
Stratford, 100.....	8th and Pine Streets.....	1.50	2.50	2.50	3.50
Terminal, 100.....	Union Station .....	1.50-2.00	3.00	3.00-3.50	5.00
Warwick, 200..... <i>Stomatology</i> <i>Preventive Medicine and Public Health</i>	15th and Locust Streets.....	.....	.....	2.00-4.00	4.00- 6.00
Westgate, 125.....	Kingshighway and Delmar Streets.....	2.00	2.50	3.00	3.50

\* Section hotel headquarters indicated by name of section following hotel. † Weekly rates only.

the management of the hotel of their choice, stating the reservations that they desire to have made and the date on which they plan to reach St. Louis, as well as the length of time they will remain. If difficulty is experienced in securing the desired hotel accommodations, the Local Committee on Hotels of which Dr. Louis H. Behrens, 3525 Pine Street, St. Louis, is chairman, in cooperation with the Hotel Association and the Convention Bureau, will lend its assistance in securing desired reservations. It is urged that wherever possible groups will be arranged for so that the hotel accommodations may be assigned in a manner that will accommodate the largest number possible.

2. Aaron, C. D.: Diseases of the Digestive Organs, Philadelphia, 1921, p. 108.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Hospital News.**—Work has been started on the new Central Alabama Hospital, Clayton. The building will be erected at a cost of \$15,000.

**Malaria Control.**—It is announced by the state health officer that sixty-three malaria control projects are now under way in the state, as compared to one in 1917, and twelve in 1920.

**Appropriation for Hydrophobia.**—The governor has approved an appropriation of \$25,000 for treatment at the Pasteur Institute of indigent persons who have been bitten by rabid animals. This sum will be taken from the dog license fund.

**Personal.**—Dr. Samuel K. Suggs, Montgomery, was elected president of the Montgomery County Medical Society at the annual meeting, held, January 7.—Dr. Samuel W. Welch, Talladega, has been reelected for a five-year term as state health officer.—Dr. Albert F. Moxey, U. S. Public Health Service, has been assigned to Alabama as director of malaria investigation.

### CALIFORNIA

**Oriental Birth Rate.**—The birth rate statistics published by the Census Bureau for white persons is given as 18.3, the lowest in the country; the rate for its colored population—largely Japanese—is 39.3, second only to that of one other state, Washington.

**Hospital News.**—An addition to Arroyo Sanitarium, Livermore, will be erected by the San Francisco board of supervisors, according to an agreement with the Alameda County board of supervisors. In return, Alameda County will provide beds for fifty San Francisco tuberculous patients.

### ILLINOIS

**Prescription Blanks Stolen.**—Reports from all over the country by physicians, stating the loss of their prescription



books, have been received recently. Dr. G. Lewis Bauer, Belleville, Ill., announces the loss of book number 173211, stolen from the drawer of his office. The serial numbers of the books are recorded, and it is expected that the prescriptions can be traced through these.

#### Chicago

**County Hospital Accepts Leper for Cure.**—A leper was recently discovered in Rockford, and the government officials were notified; but the three colonies in America—in Louisiana, Massachusetts and California—were full. The health commissioner of Chicago was notified, and it has been arranged that the Cook County Hospital will treat the patient.

**Personal.**—The resignation of Dr. William E. Harsha as director of the Chicago Municipal Tuberculosis Sanitarium which was presented in December, 1921, has been accepted. Dr. John Dill Robertson, who recently resigned as commissioner of health of Chicago, has been appointed by Mayor Thompson to take the place of Dr. Harsha.—Dr. Herman N. Bundesen has been appointed health commissioner of Chicago to succeed Dr. J. D. Robertson.—Dr. Isaac Abrahams is in a serious condition in a local hospital as a result of being shot, he reports, by his colored office girl.

**Medical Society Discusses Organization Problem.**—A meeting of the North Side Branch of the Chicago Medical Society was held, February 2, to discuss problems of medical organization. At this meeting, the President-Elect of the American Medical Association and members of the Board of Trustees who were in Chicago for their regular session were invited guests. Dr. Austin A. Hayden, president of the branch, presided. Addresses were made by Dr. G. E. de Schweinitz, President-Elect of the American Medical Association, Dr. H. M. Brown, Milwaukee, who discussed county and state organization, and Dr. A. R. Craig, Secretary of the Association, who discussed the national organization. Among others, Drs. C. E. Humiston, president of the Illinois State Medical Society, Edward H. Ochsner, and from the Board of Trustees, Drs. Frank Billings, W. T. Williamson, Wendell Phillips and C. H. Richardson, took part in the discussion.

#### INDIANA

**Physician Elected Mayor.**—Dr. George R. Daniels has been elected mayor of Marion.

**New Officers for State Sanatorium.**—At a meeting of the Indiana State Sanatorium Association, held recently, Dr. Alfred Henry, Indianapolis, was elected president; Dr. Gardner Johnson, Evansville, vice president, and Dr. Eric A. Crull, Fort Wayne, secretary-treasurer.

**Indianapolis Medical Society.**—At the annual meeting of the society, held, January 3, the following officers were elected for the ensuing year: president, Dr. Lafayette Page; first vice president, Dr. George S. Row; second vice president, Dr. Harry K. Langdon, and secretary-treasurer, Dr. William A. Doeppers.

**Fort Wayne Medical Society.**—At the annual meeting of the society, held recently, under the presidency of Dr. Edmund M. Van Buskirk, the following officers were elected for the year 1922: president, Dr. Adam L. Schneider; secretary, Dr. Miles F. Porter, Jr. (reelected), and treasurer, Dr. Elmer E. Morgan (reelected).

**Hospital News.**—A new three story fireproof hospital is being constructed at Greencastle, at a cost of \$95,000. The building will be equipped with all modern improvements and will be known as the Putnam County Hospital.—Additions to the county hospital, Sunnyside, for the treatment of tuberculous ex-service men, have been completed.

**Personal.**—The mayor has appointed Dr. William H. Stemm a member of the board of health for North Vernon.—Dr. Charles C. Givens, Lewis, aged 71, was injured recently, when his automobile was smashed by a railroad train.—Dr. Myron L. Curtner, Vincennes, has been appointed physician for Knox County.—Dr. Ralph R. Coble has been appointed superintendent of the City Dispensary of Indianapolis.—Dr. Cleon Nafe has been made assistant superintendent of the City Hospital, Indianapolis.—Drs. Willis D. Gatch and John D. Garrett have resigned from the board of public health and charities of Indianapolis.—Drs. Harry W. Fitzpatrick, Merle Hoppenrath and Carroll C. Cotton have been made members of the Elwood board of health.—Dr. Herman C. Morgan has been reappointed secretary of the city board of health of Indianapolis.

#### IOWA

**Surgical Society Clinic.**—A medical clinic under the auspices of the Iowa Clinical Surgical Society was held, January 28, at the Lutheran Hospital, Des Moines. Dr. Edward Starr Judd and Dr. William F. Braasch of the Mayo Clinic, Rochester, Minn., and Dr. Dean Lewis of Chicago attended the clinic.

#### LOUISIANA

**District Medical Society.**—At the meeting of the Fifth Congressional District Medical Society, held, January 10, at Monroe, the following officers were elected for the ensuing year: president, Dr. Bunnie M. McKoin, Mer Rouge, to succeed Dr. Francis C. Bennet, Monroe; vice president, Dr. James E. Walsworth, Monroe, and secretary and treasurer, Dr. Charles H. Mosely, Monroe.

**Colombian Leper Found in New Orleans.**—Carlos Griffo of Colombia, South America, was passed by quarantine officers and registered at a New Orleans hotel recently. He was told by his physician in Colombia that he was suffering from a "nervous disease" and went to New Orleans for treatment, where it was found that he was a leper. He was sent to the government leprosarium at Carville.

**Hospital News.**—Plans have been approved for the state colony and training school for the feeble-minded, Pineville, on the grounds of former Camp Beauregard. The building will be constructed to care for 2,000 patients; one half of this number will be admitted within the year. The main group of buildings will include sixteen separate dormitory units, segregating the sexes, and a separate group for negroes. Each dormitory will have an acre of ground, and will be equipped with all modern improvements. Dr. Edwin E. Evans, formerly of the East Louisiana Hospital for the Insane, has been appointed superintendent of the institution.

#### MARYLAND

**State Medical Meeting.**—The annual meeting of the Medical and Chirurgical Faculty of Maryland will be held, April 25-27, at Baltimore, under the presidency of Dr. Arthur H. Hawkins, Cumberland.

**Personal.**—Dr. Roger I. Lee, professor of hygiene, Harvard University, lectured before the School of Hygiene and Public Health, Johns Hopkins University, on "The Physical Examination of Large Groups of Individuals," at its regular weekly lecture, February 6.

**Exemption for Medical Examiners.**—Exclusion of the state board of medical examiners from the list of boards which the state reorganization program proposes to place under the commissioner of state employment and registration was urged in a resolution by the Baltimore City Medical Society, February 3. Dr. Herbert Harlin, speaking on behalf of the board of medical examiners, stated that by depriving the board of the right to make its own expenditures and to maintain its own clerical force, the enactment would do away with a large part of the effective work which the board has been carrying on for years. His resolution was unanimously carried.

**Organization for School Health Work.**—Health Commissioner C. Hampson Jones has been authorized by the board of estimates to appoint three female physicians and three additional male physicians for physical examination of children in the high schools, and a part-time psychiatrist to examine children who are defective and backward in their studies. Salaries will be paid out of the \$20,000 appropriation for health work allowed Dr. Jones in the budget for 1922. Drs. John A. T. Pfeiffer, Everhard Briscoe, Francis X. Kearney, Mabel Belt, Lucille Liberles and Jennie Brown have been appointed. They will be under the direction of Dr. H. Warren Buckler, director of public health work in the schools.

#### MASSACHUSETTS

**New Professional Building.**—The old Tuileries Hotel, Boston, will be remodeled and used as a professional building devoted exclusively to physicians and surgeons.

**Hospital News.**—The new isolation pavilion at the Boston City Hospital, built at a cost of \$32,000, was opened recently. This building will be occupied by special groups of children with contagious diseases.

**Personal.**—Dr. George L. Steele, Springfield, has resigned from the board of health, his resignation to take effect imme-



diately.—Dr. Robert Bonney was recently elected president of the East Boston Medical Society.—Dr. Isaac H. Coriat read a paper on "Medical Magic in Frazer's 'Golden Bough'" at the annual meeting of the Boston Medical Library, January 24.

**Health School Fund Named for Physician.**—Harvard authorities have named the fund for the establishment of the new school of public health in honor of Dr. Henry Pickering Walcott, Cambridge. The Rockefeller Foundation has agreed to give \$2,000,000 to the fund, and Harvard professors will form the nucleus of the faculty of the new school. Dr. David L. Edsall has been appointed dean of the institution.

**Medical Gymnastic Building.**—Work will be started this spring on a new medical gymnastic building and infirmary at Springfield College, at a cost of \$40,000. This institution will be called the Weiser Infirmary in honor of Dr. Walter R. Weiser, president of the Springfield Chamber of Commerce, and will be used for work on remedial gymnastics for crippled children and those suffering from after-effects of infantile paralysis. The building will be three stories high, 93 feet long and 43 feet wide, and will include a medical gymnasium, operating rooms, and a small ward.

**Health Officers Elected.**—At the meeting of the Massachusetts Association of Boards of Health, held recently, Dr. George L. Tobey, Clinton, was elected first vice president of the board; Dr. Francis P. Denney, Brookline, was made second vice president; Dr. William H. Allen, Mansfield, secretary, and Dr. Francis G. Curtis, Newton, treasurer. Dr. John W. Bartol, president of the Massachusetts Medical Society, addressed the meeting and urged support of the bill which is expected to be introduced at this session making vaccination compulsory in private schools as well as in the public schools. Dr. Frederick J. Ripley, Brockton, presided.

#### MICHIGAN

**Detroit Medical Building.**—The contracts have been awarded for the construction of a medical building at Detroit, at a cost of approximately \$1,650,000. The building will be fifteen stories high, and will be equipped with special hospital elevators, pharmacies and pathologic laboratories.

**Mental Deficiency Surveys Planned.**—Dr. Harley A. Haynes, superintendent of the Michigan Home and Training School, Lapeer, has accepted an offer from the National Committee on Mental Hygiene of the Russell Sage Foundation, New York City, to become director of the division of mental deficiency. He will appoint a staff of medical experts to conduct mental deficiency surveys in Arkansas and Kentucky, where such surveys have been requested.

**Hospital News.**—The addition to the Deaconess Hospital, Detroit, has been completed and can now accommodate 110 patients. The hospital was thrown open to the medical profession, January 6, and Dr. Plinn Morse read a paper on "The Prognosis of Nephritis."—The new Detroit Tuberculosis Sanatorium, Northville, was formally opened December 19. Thirty-two children, removed from the Herman Kiefer Hospital, were the first patients.

**Personal.**—T. L. Patterson, Ph.D., formerly of the physiologic department of the State University of Iowa College of Medicine, has been appointed professor and director of the department of physiology at the Detroit College of Medicine and Surgery, Detroit.—Dr. Arthur M. Hume, Owosso, has announced his resignation and retirement from duty as district field officer of the Veterans' Bureau, to resume private practice.—Dr. Carl S. Oakman, Detroit, has accepted the general management of the Wilson Laboratories (manufacturing chemists), Chicago.—Dr. William E. Wilson, Grand Rapids, has accepted a scholarship from the Faculty of Medicine, Paris, and recently sailed for France.

#### MISSISSIPPI

**Central Medical Society.**—A meeting of the society was held, January 17, to discuss medical legislation. Some of the bills already under consideration are: (1) exemption from taxation of all hospitals doing charity work; (2) cancellation of medical licensure when a physician is convicted of certain illegal practices, and (3) repeal of the privilege tax law.

#### NEBRASKA

**Personal.**—Dr. Oswald H. Magaret, Papillion, has been appointed county physician.—Dr. Earl B. Erskine, Lyons, has been appointed acting assistant surgeon, M. C., U. S. Army, and will be stationed in Lafayette, Ind.

**New Medical Society.**—At a special meeting of physicians of Box Butte, Scotts Bluff, Morrill and Banner counties, held recently at Scottsbluff, the twelfth district of the Nebraska State Medical Association was organized and will meet twice a year. Dr. Minor Morris, Alliance, was elected president; Dr. Frank B. Young, Gering, vice president, and Dr. George J. Hand, Alliance, secretary-treasurer.

#### NEW YORK

**Association of Tuberculosis Clinics.**—The annual meeting of the association was held, January 1, at the New York Academy of Medicine. Dr. James Alexander Miller and Dr. Louis I. Harris were reelected president and vice president, respectively.

**Personal.**—Dr. William L. Gould, Albany, has been appointed health officer in the fourth city district, to succeed Dr. William Rausch, who resigned recently.—Dr. Burdge P. MacLean has been appointed health officer of the town of Huntingdon.—Dr. Joshua Van Cott was elected president of the Long Island Physicians' Association at the meeting held January 29.

**Governor Signs New Hospital Bill.**—Governor Miller has signed the McGinnies bill, which provides for the construction of a new state hospital for the insane at Creedmoor, L. I. When this hospital is completed, the Kings Park State Hospital will be set aside entirely for World War veterans suffering from mental diseases. The new institution will be known as the Brooklyn State Hospital, Creedmoor Division, and will be under the management and control of the state hospital commission. The bill carries an appropriation of \$2,979,782.

**Influenza and Pneumonia.**—According to an official announcement of the state health department under date of February 2, although New York City seems to be experiencing an outbreak of influenza and pneumonia, there appears to be no unusual prevalence of those diseases up-state, as shown by information coming in daily from hundreds of local registrars throughout the state. The reports from New York City, in the opinion of Dr. Hermann M. Biggs, state commissioner of health, show the type of influenza now prevalent to be considerably milder than that of 1918 and similar to outbreaks reported from continental countries and England. In the view of the state health department a convincing case has not yet been made out for the use of vaccines for the prevention of pneumonia. At the time of the last epidemic a thorough investigation of the efficacy of these vaccines was made by careful observation and analysis of the results of this method as used among 19,000 inmates of state institutions. This investigation indicated that little or no protection against pneumonia was afforded by the use of the vaccines.

#### New York City

**Personal.**—Dr. Smith Ely Jelliffe has been elected president of the New York Psychiatric Society.

**Hospital Acquires Property.**—The New York Throat, Nose and Lung Hospital, which occupies the property at 229-233 East Fifty-Seventh Street, has purchased adjoining property which gives the institution control of an 80 foot frontage.

**Middleton Goldsmith Lecture.**—At a meeting of the New York Pathological Society, held, February 3, at the New York Academy of Medicine, the Middleton Goldsmith Lecture was delivered by Prof. Thomas Hunt Morgan, Columbia University, on "Some Possible Bearings of Genetics on Pathology."

**Rockefeller Institute to Establish Laboratory in Tropics.**—Dr. Frederick F. Russell and Dr. Richard M. Pearce sailed, February 2, for Rio de Janeiro by the Munson liner *Aeolus* to establish at São Paulo, with Dr. Carlos Chagas, Brazilian commissioner of health, a laboratory for the study of tropical diseases.

**Women Back Vivisection.**—Following an address by Dr. Simon Flexner, the New York City Federation of Women's Clubs, at its fifty-seventh convention, held February 3, defeated by overwhelming vote a resolution that dogs be exempted from scientific experimentation. Antivivisection representatives made a hard fight for the resolution.

**Physicians and Dentists Hold Joint Meeting.**—The stated meeting of the New York Academy of Medicine, February 2, was held in cooperation with the First District Dental Society. The subject was "A Survey of the Interrelationship between the Physician and the Dentist." The speakers were Dr. Llewellys F. Barker, Baltimore; Prof. Charles N. Johnson, Chicago; Prof. LeRoy M. S. Miner, Harvard University, and Dr. William Gilman Thompson.



**Child Welfare Administration Building Opened.**—The board of child welfare opened its new administration building at 145 Worth Street, January 30. The board is now caring for 25,000 children and 7,500 mothers at a cost to the city of \$4,000,000. The board aims to keep children in the home, and finds that this sum represents a decided saving to the city over the method of caring for dependent children in institutions. In addition to the financial saving, the plan has virtually eliminated from the children's court the Society for the Prevention of Cruelty to Children, children being under the care of the board. In the new building will be dental clinics, physical examination rooms and an employment department. The administration work will be mainly concerned with carrying out the provisions of the child welfare bill.

#### NORTH CAROLINA

**North Carolina Hospital Association.**—A meeting of the association, comprising about 250 physicians of the state, was held, January 31, at High Point.

**Personal.**—Dr. Crete N. Sisk, Athens, Ga., has been appointed county health officer of Forsyth, to succeed Dr. Alexander C. Bulla, who recently resigned to accept a similar position with the city of Raleigh and Wake County.—Dr. J. W. White, Wilksboro, has been appointed county health officer.

#### OHIO

**Hospital News.**—Two new buildings will be erected at Longview Hospital for the Insane, Cincinnati, at a cost of \$350,000.

**Epidemic of Smallpox.**—It is reported by the commissioner of health that more than 100 cases of smallpox have occurred in Stark County alone, but practically all the patients have the disease in a very mild form.

**Personal.**—Dr. Gilbert R. Mickelthwaits has resigned as city physician.—Dr. Chandler P. Robbins, Lieut.-Col., M. C., U. S. Army, assumed his duties as depot surgeon at Columbus Barracks recently.—Dr. Samuel Zielonka has resigned as instructor in surgery, University of Cincinnati College of Medicine.

**Academy of Medicine of Toledo and Lucas County.**—At a meeting of this academy, held, February 3, under the presidency of Dr. John F. Wright, Toledo, Dr. Wilfred P. Grenfell read a paper on "Medical Experiences on the Labrador Coast." The annual meeting and banquet of the academy was held, January 6, under the presidency of Dr. Louis A. Levison, Toledo, and the following officers elected for the year 1922: president, Dr. John F. Wright; vice president, Dr. Norris Gillette, and secretary, Dr. Edward J. McCormick.

**Physicians to Aid Social Service Work.**—At a meeting of the Clark County Medical Society, held, January 25, at Springfield, it was planned that all members of the society should cooperate with the Social Service Bureau in caring for the needy sick of the city. Medical treatment will be given in cases recommended by the Social Service Bureau; and when patients are unable to pay the fee, the physicians agree to perform the work at half price, the money to come from the bureau. Dr. Clarence S. Ramsey was chairman of the committee that investigated the proposal of the bureau. Dr. Amos Richard Kent presided.

#### OKLAHOMA

**Hospital News.**—The new Memorial Hospital, Bartlesville, erected at a cost of \$250,000, is completed and will be opened in the near future.—The new Shawnee General Hospital was recently opened. The institution has 100 beds and is fitted with all modern improvements.

#### PENNSYLVANIA

**Personal.**—Dr. Roland F. Wear has been appointed superintendent and chief of staff of the Berwick Hospital, Berwick.

##### Philadelphia

**Mary Scott Newbold Lecture.**—The seventh Mary Scott Newbold lecture was delivered, February 1, by Dr. Hans Zinsser, New York City, on "Changes in Our Conceptions of Antigen-Antibody Reactions."

**Hospital News.**—The large rebuilding project which the Presbyterian Hospital was developing at the time of the beginning of the World War is now being resumed. The main building will be five stories high and will house a new

laboratory, dispensary and social service department. Work on the building will be started this month.

**Visiting Nurses Report.**—The thirty-fifth annual meeting of the Visiting Nurses' Society of Philadelphia, February 1, was notable because it marked the first meeting in thirty-five years at which no appeal for funds was made. The reason for the absence of the financial appeal is the society's membership in the Welfare Federation, which made one campaign for funds for all its 126 member agencies last fall. The work of the society for 1921 was indicated in the president's report, read by Mrs. Thomas J. Dolan. It showed an increase of 10 per cent. over 1920. More than 23,000 patients were cared for in 1921, and more than 179,000 visits were made by the society's nurses.

**Society News.**—At the recent meeting of the Philadelphia Academy of Stomatology, T. D. Castro was elected president; Sterling W. Hewitt, vice president; James J. Nelson, treasurer, and John Ross, secretary.—At a meeting of the Philadelphia Clinical Association, held recently, the following officers were elected for the ensuing year: president, Dr. Mitchell P. Warmuth; first vice president, Dr. William E. Parke; second vice president, Dr. Isaac R. Strawbridge; treasurer, Dr. W. Hersey Thomas, and secretary, Dr. James F. Donnelly.—The Northern Medical Association, at its annual meeting, elected the following officers for the year 1922: president, Dr. John B. Mencke; vice president, Dr. Penn Gaskell Skillern; treasurer, Dr. John W. Millick, and secretary, Dr. Morris L. Fuchs.

#### RHODE ISLAND

**Honor Oldest Alumnus.**—At the annual dinner of the Harvard Club of Rhode Island, held, January 23, at Providence, a message of congratulation was sent to honor Dr. Horatio R. Storer, Newport, aged 91, the oldest living graduate of the Medical School of Harvard University.

#### TENNESSEE

**New Pediatric Society.**—A meeting of the physicians of Memphis was held last month for the purpose of organizing a society for the close study and observation of the special treatment of children. The society will meet monthly, and will be known as the Memphis Pediatric Society. Dr. Edward C. Mitchell was elected president of the organization.

#### TEXAS

**Personal.**—Dr. John H. Florence, Houston, has been appointed state health officer to succeed Dr. Manton M. Carrick, who resigned recently.

**Physicians Purchase Sanatorium.**—Dr. Herbert F. Gammons, Dallas, in connection with Dr. Robert G. Homan and Miss Effie Grant, has purchased the Wiley Sanatorium for Tuberculosis, El Paso, which will in future be known as the Gammons Sanatorium, with Dr. H. F. Gammons as director.

#### VIRGINIA

**Distinguished Service Medal for Physician.**—Dr. Hunter H. McGuire, Richmond, who served as a lieutenant colonel in the medical department during the World War, was presented with the distinguished service medal, at Fort Monroe, January 12, for service as commanding officer of a base hospital in France during the Argonne campaign.

#### WISCONSIN

**Hospital News.**—A state maternity hospital, to accommodate fifty patients, was opened, February 1, by the Salvation Army, at Milwaukee.

**Prescription Books Called In.**—Prohibition Director Stone has called in the liquor prescription books of 100 Wisconsin physicians for examination.

#### CANADA

**Lectures on Heredity.**—A series of five lectures on heredity was given in January at the University of Toronto by Prof. William Bateson, director of the John Innes Institution, Merton.

**University News.**—It has been announced that Lord Atholstan, proprietor of the Montreal *Star*, has offered the sum of \$100,000 to the graduate or student of any recognized university who, within five years after date, is the first to



discover a medicinal treatment for the effective cure of cancer. The decision is to be left to the Royal College of Physicians and Surgeons, London, England.

**Endowment for Medical School.**—Under the terms of his will, the estate of the late Dr. Henry Meek, London, Ont., is left to Mrs. Meek during her lifetime. On her demise, the entire estate is to be set aside for the establishment of a laboratory for the benefit of the Victoria Hospital, and to further research in the medical department of the Western University, London. The plans for the establishment of the laboratory will be under the direction of a special board of three persons, namely, the chairman of the board of governors of the Western University, the chairman of the board of trustees of the Victoria Hospital, and the dean of the faculty of medicine of the Western University. The laboratory will be known as "The Hamilton King Meek Memorial Laboratory," in memory of their son. The board is to have authority and power to use any portion or all of the principal set aside for the laboratory for building or maintenance purposes, and to designate what portion shall be used for the buildings and also for the endowment fund. One half of the proceeds from the sale of the family residence is to be set aside as a fund for teaching obstetrics in the medical school of the Western University.

**Liquor Prescription News.**—Officials of the Ontario license board, and the executive of the Ontario Medical Association held an informal discussion at the Academy of Medicine, Toronto, February 3, for the purpose of endeavoring to straighten out matters relating to the issuance of liquor prescriptions by the medical profession. The medical profession was represented by Drs. J. F. Farley, Trenton, Ont., president of the Ontario Medical Association; George S. Young and T. C. Routley, Toronto, while Chairman James Hales, K.C., and Commissioner W. S. Dingman appeared for the board of license commissioners. The net result of the conference was that the physicians will consider and report back to government representatives their views on some form of cooperative disciplinary control to be exercised by a physicians' committee in conjunction with the license board. In response to certain representations put forward by the government representatives, they will also ascertain the views of their members on the advisability of lowering the maximum quantity of liquor obtainable on physicians' prescriptions. Through questionnaires, members will be asked their views as regards 16 ounce or 12 ounce limitation, and the establishment of an advisory committee.

**Hospital News.**—A deputation from St. Thomas, Ont., headed by Mayor C. E. Raven, waited on the Elgin County Council recently, and asked for a grant of \$50,000 toward the proposed Elgin Memorial Hospital, which, it is estimated, will cost \$200,000. The city has already granted \$100,000 toward the project.—A new tuberculosis hospital was opened recently near the Medical School of Dalhousie University, Halifax. Dr. William Bruce Almon has been appointed medical director of the institution, and Drs. Edward V. Hogan and Henry K. Macdonald, consulting surgeons.—A pavilion for the accommodation and treatment of tuberculous patients has just been completed on the grounds of the Shaughnessy Hospital, B. C., which is operated by the department of soldiers' civil reestablishment of Canada. The building was erected at a cost of \$12,400.—Plans will be prepared at once by the city architect for the new reception hospital at Toronto, Ont. The building will have its main entrance on Surrey Place. It will be five stories high and will contain 125 beds.—Hon. Dr. Beland, the new minister of soldiers' civil reestablishment in the federal government, Ottawa, has taken up the matter of aiding the soldier patients at the Muskoka Free Hospital for Consumptives, and will introduce new measures at the next parliamentary session.—Toronto, Ont., is to have a Jewish General Hospital. The Lyndhurst Hospital building, on Yorkville Avenue, has been bought for this purpose, and in May it will be completely renovated. In July it will open its doors to fifty Jewish patients. The Jewish Daughters Society is the founder of the new hospital, and the purpose of the institution is to eliminate the mistakes and inconveniences experienced by non-English speaking Jewish patients in gentile hospitals. The building was purchased for \$35,000, and an additional \$12,000 will be spent on improvements.

#### GENERAL

**Twenty-Five Year Health Survey.**—The National Research Council has announced that Detroit and New York City have been chosen for a health investigation, which may continue

for a quarter of a century. Attention will be directed toward determining the influence of the air with its varying temperature, humidity and movement on the health of many classes of people.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Muhlenberg Hospital, Plainfield, Pa., \$50,000, for the construction of an extension to the Nurses' Home, by George P. Mellick and John H. Stevens.

Pennsylvania Epileptic Hospital and Colony Farm, Oakbourne, Pa., \$20,000, by the will of Cora Feltus.

Central Maine General Hospital, Lewiston, Me., \$20,000, by Col. C. H. Osgood.

Hennepin County Sanatorium, Glen Lake, Minn., \$11,508, from the sale of Christmas seals.

Hospital for Crippled Children, Columbus, Ohio, \$8,000, by a Columbus resident.

Massachusetts School for the Blind, New Bedford, Mass., \$3,000, by the will of Miss Sarah E. Seabury.

Morton Hospital, Taunton, Mass., \$5,000; Massachusetts General Hospital, Boston, \$10,000, to establish a free bed in memory of Judge Lowell, by the will of Mrs. Cornelia P. Lowell.

Home for Destitute Roman Catholic Children, St. Vincent's Orphan Society, St. Mary's Infant Asylum, St. Elizabeth's Hospital, Brighton, Mass.; Holy Ghost Hospital for Incurables, Cambridge, and the Boston Lying-In Hospital, each \$1,000, by the will of James W. Dunphy.

Lutheran Hospital, Moline, Ill., \$500, by the will of Charles O. Carlberg.

#### LATIN AMERICA

**Personal.**—Dr. H. de Brito Belford Roxo has been appointed professor of clinical psychiatry in the University of Rio Janeiro.

**Smallpox in Chile.**—The smallpox situation in Chile became so serious that the 500-bed pesthouse at Santiago proved inadequate for the number of patients. The government had, therefore, to make an emergency appropriation of 300,000 pesos for the construction of barracks and 100,000 pesos for the care of patients.

**Tribute to a Cuban Physician.**—As a tribute to Dr. Diego Tamayo, secretary of public health during General Wood's regime, the Academia de Ciencias of Havana held a special session in his honor. Tamayo was instrumental in securing the necessary funds for the present building of the academy. To celebrate the occasion, Tamayo was made an emeritus member and his portrait was unveiled. Speeches were made by Drs. Torralbas, Le Roy, and de la Torre. In his speech, Tamayo called attention to the debt Cuba owes to General Wood's efforts.

**Chilean Hospitals.**—A new pavilion has been added to the Puerto Montt Hospital.—The municipal authorities of Osorno are taking steps to build a modern hospital in that town. The Chilean senate recently struck out an appropriation of 200,000 pesos for that purpose.—A commission composed of Drs. Avalos, Ferrer, Torres, Boonen y Vial, is trying to find out a proper location for the construction of an army hospital at Santiago. The chief of the army sanitary corps, Dr. Avalos, stated that there are already 200,000 pesos available for this purpose, which will be used in building two or three pavilions at first.

**Prizes Awarded at the Cuban Medical Congress.**—Our Havana exchanges relate that the prize for the best work on radiology of the heart was awarded to Dr. P. L. Fariñas; on general medicine, to Dr. O. Montoro; on legal medicine, to Dr. C. M. Pineiro, and on ophthalmology, to Dr. J. M. Penichet and to Dr. Juan Santos Fernández. The congress passed forty-five resolutions, one of them being an appeal to the authorities to appoint some members of the medical faculty to represent Cuba at the next conference on medical education held in the United States. Another resolution urged that steps be taken for the organization of an American conference on tropical diseases.

#### FOREIGN

**British Orthopaedic Association.**—The annual meeting of the British Orthopaedic Association was held, December 2-3, at Liverpool, under the presidency of Sir Robert Jones.

**British Medical Association.**—The ninetieth annual meeting of the British Medical Association will be held, July 25-29, at Glasgow, under the presidency of Sir William Macewen, F.R.S.

**Cremation of Human Bodies.**—It is reported by the Cremation Society of England that 1,800 bodies were cremated in 1920, among them the bodies of Sir William Osler and Dr. Cecil Lyster.

**Academy of Medicine of Paris.**—At the annual meeting and election of officers of the Academy of Medicine, Paris,



M. Behal was elected president; M. Chauffard, vice president, and M. Sougues, secretary (reelected).

**Hunterian Lectures.**—A course of six Hunterian lectures on the "Facial Characteristics of Living Races of Mankind" was delivered during January at the Royal College of Surgeons, England, by Prof. Sir. Arthur Keith, conservator of the college museum.

**National Colonial Exhibition.**—At the exhibition to be held at Marseilles, France, in September, under the presidency of Dr. Paul Gouzien, president of the Superior Council of Health for the French Colonies, a public health congress will take place, September 11-17.

**Inauguration of Radium Institute at Naples.**—The new Instituto Fotoradioterapico connected with the large public hospital at Naples was recently inaugurated with much ceremony and a banquet. It is due to the initiative of Prof. R. Stanziale of the chair of dermatology and syphilis, and is the only institution of the kind in southern Italy.

**The Rat Campaign at Copenhagen.**—The *Nederlandsch Tidschrift* states that the authorities of Copenhagen have decreed that in March and April and again in September and October, rat poison shall be systematically distributed. During the other eight months of the year it is proposed to give a bounty for dead rats. It is expected that the campaign will cost for poisons and premiums up to 170,000 crowns a year.

**Research Work in the Serotherapy of Trypanosomiasis.**—Research work in this line will be undertaken through the Colonial Office of Great Britain, which is organizing an expedition for this purpose, the work to include both men and animals. The expedition will be in charge of Drs. Marshall and Basselo, of the Uganda Public Health Service, with two assistant physicians and two veterinarians, who plan to spend at least two years in Africa.

**Research on Hospital Abuses.**—The organized physicians, surgeons and specialists connected with the public hospitals in France have appealed to each one to compile data relative to hospital abuses, especially the crowding out of the indigent by the well-to-do, the remuneration of physicians engaged in charity and industrial accident work, and questions connected with pay patients, overcrowding, laboratories, etc. The secretary in charge of collection of the data is Professor Rocher of Bordeaux.

**The Souvenir Volume of the Centennial of the Académie de Médecine at Paris.**—All the historical and other addresses delivered at the centennial celebration in December have been collected in a special souvenir volume. This *Livre d'Or du Centenaire* is an octavo of 280 pages and is published by Masson et Cie, 120 St. Germain, Paris, for the Académie de Médecine. Some extra copies are offered for sale for 120 francs each, including the special medal struck off to commemorate the centennial, or 100 francs without the medal.

**Personal.**—Professor Ambard of Paris has been delivering a brief series of lectures in the Scandinavian countries. At Copenhagen he spoke at joint meetings of the societies for internal medicine, surgery and biology, his theme being kidney disease. — Professor Ehlers of Copenhagen has been given an honorary degree by the University of Paris. — Paul Strauss, senator and honorary member of the Académie de Médecine at Paris has been appointed minister of hygiene. — Professor Neuberg of Berlin has been called to Japan to aid in founding a biochemical institute.

**Health Insurance in Norway.**—A letter in the *Deutsche medizinische Wochenschrift* relates that the income limit for compulsory insurance against sickness has been recently raised by the authorities in Norway from 3,000 to 6,000 crowns. The insured person pays six tenths of the premium, the employer and the commune each one tenth, and the state two tenths. He can choose his physician, and the physicians are paid by the number of office consultations and visits. This insurance has been in vogue for ten years. Legislation is now being discussed to allow all with an income less than 6,000 crowns to share in the insurance whether they are employed or not, thus extending it to small farmers.

**International Medical Hydrology.**—An International Society of Medical Hydrology was founded recently in London, with a preliminary membership of seventy-one medical men, representing thirteen different countries. A representative in each country was appointed, the aim being to publish an international journal to contain the clinical and experimental work in each country bearing on the medical action and uses of waters and baths. The representative in this country is Dr. Guy Hunsdale of Hot Springs, Va. The representative in

Austria is Dr. J. Fodor of Vienna; in Italy, Prof. L. Devoto of Milan, and in France, Dr. P. Ferreyrolles of La Bourboule and Paris. The latter is to be one of the two editors of the proposed journal. Dr. R. Fortescue Fox was elected president of the new society.

**Commencement Exercises of French Colonial Institute.**—The Institut de Médecine et de Pharmacie Coloniales was founded at Marseilles in 1899, and gives two graduate three month courses during the year, from January to June, besides other courses for undergraduates. The staff of instructors is large, most of them members of the Paris medical faculty. Professor Brumpt of Paris is the secretary general. This year thirty were given the colonial medicine diploma, including eight foreign physicians. Since the reorganization of the institute by Brouardel and Blanchard in 1902, 402 diplomas have been issued, including the 212 to foreign physicians. The authorities are constantly complaining of the inadequate number of physicians that are willing to take up work in the French colonies. It was stated that the Tchad region, with an area equal to that in France, had only two medical men at one time recently. Tuffier brought the same message back to the profession from his trip to the Far East. The *Presse Médicale* of Dec. 28, 1921, contains the details of the courses offered.

#### Deaths in Other Countries

Dr. Louis Colbourne, formerly of Buenos Aires, died, January 7, in Kent, England, aged 72. — Major Charles William Reilly, R. A. M. C., died, December 31, in London. — Dr. W. Sander, a leading alienist of Berlin, aged 84. — Prof. E. Lefas of the medical faculty at Asunción, Paraguay. — Prof. M. Breitung of Koburg, aged 70. — Dr. A. Wagner of Hamburg, aged 86. — Dr. W. Classen of Düsseldorf, aged 60. — Dr. Oehme of Dresden, at an advanced age. — Dr. E. Böhni of Stein, Switzerland, a pioneer in treatment of leg ulcers and tuberculous lesions of bones and joints. — Dr. Moeller of Brussels, former president of the Belgian Académie de Médecine. — Dr. H. Kron, a neurologist of Berlin, aged 74.

#### CORRECTION

**Pneumotyphoid.**—In the paper by Dr. H. C. Herrman, *THE JOURNAL*, January 21, the title should be "A Case of True 'Pneumotyphoid'" instead of "Pneumotyphus."

## Government Services

### Conference on Pay of Officers

Terms of legislation relating to the pay of army, navy and U. S. Public Health officers in the government have recently been the subject of numerous conferences between members of Congress and representatives of the army, navy and other branches of the government. The present law which granted increases in pay to all such officers, including medical officers, expires by its own limitation, June 30, 1922. It is generally recognized that Congress will reduce the pay of such officers in new legislation which necessarily must be passed before June 30, 1922. Representative John C. McKenzie, ranking member of the Committee on Military Affairs, has taken the initiative in this legislation. The McKenzie plan for regulating compensation by length of service has been retained in principle in the revised draft of the bill which will soon be introduced in Congress. The six pay periods each are divided into three rates of pay each, so that there may be, to that extent, progressive compensation, with a limitation on the amount any officers may draw, despite the length of service, and checks on increase of pay regardless of rank are provided. At the same time, there are provisions that will relieve an officer suffering from stagnation in promotion from the blighting effects of an unchanging rate of compensation. Moreover, there are provisions for allowances in the way of subsistence or rations and for quarters, with a sliding scale to provide for dependents.

The revised measure provides for six so-called pay periods, the base pay of each of which is: first, \$1,500; second, \$2,000; third, \$2,400; fourth, \$3,000; fifth, \$3,500, and sixth, \$4,000.

Instead of fixing pay solely by length of service, it is arranged that pay shall be regulated by a combination of service and grade.

An officer, on his original appointment to the service, will receive, as a second lieutenant or the corresponding grade in the other services, \$1,500, which is his base pay until he has served five years. Then, if



not promoted to first lieutenant or corresponding grade by that time, he will receive the pay of first lieutenant, \$2,000.

A first lieutenant, if he is promoted to that grade before three years' service as second lieutenant, gets the pay of a second lieutenant for the first three years, regardless of his promotion. From three to ten years as a first lieutenant, he will receive \$2,000; if he is ten years in service before reaching his captaincy, he will get the pay of captain, \$2,400. If a first lieutenant is promoted to captain in less than seven years, he will get the pay of first lieutenant for that period, or \$2,000.

This system of regulating pay by a combination of length of service and grade is carried upwardly to and including the grade of colonel. A colonel of less than twenty-six years' service will draw \$3,500, which is the pay of the next lower grade; service of more than twenty-six years makes the minimum pay of colonel \$4,000, with a maximum limitation on a colonel's pay placed at \$5,750.

The pay of general officers, according to the bill, is fixed at \$7,000 for a brigadier general, \$8,500 for a major general and \$13,500 for a general.

An additional feature is a provision for increase of pay by 5 per cent. for every three years of service, in lieu of the present longevity pay of 10 per cent. for every five years of service. The maximum increase for service is placed at 50 per cent., with an additional limitation in the case of colonels of thirty years' service placed at \$5,750, instead of \$6,000, as at present.

Limitation in Number of Officers

Limitation of the number of officers in the army to 13,000 is proposed in a bill introduced in the Senate by Senator Wadsworth, chairman of the Committee on Military Affairs. The measure as prepared by General Pershing, chief of staff, provides for the appointment of a "plucking" board, whose duty shall be to select officers for unlimited retirement with the approval of the President. The purpose of the bill is economy. The commissioned personnel of the medical department of the army is fixed as follows:

Number of officers of the Medical Corps.....	1,053
Number of officers of the Dental Corps.....	1,077
Number of officers of Veterinary Corps.....	144
Number of officers Medical Administrative Corps...	81

Total officers Medical Department..... 2,355

Although promotions are restricted in other branches of the service, the bill specifically states that there shall be no change in the present regulations dealing with promotions in the Medical Corps. At the office of Surgeon-General Ireland of the army, information was obtained to the effect that the actual reduction of officers, should the measure become a law, would amount to about ninety. Prohibition of appointments of additional officers in the Medical Corps to exceed the number named in the bill is also included, as well as a clause that prevents the increasing of the number of commissioned personnel in the Medical Corps regardless of an increase in the total strength of the entire army. The present National Defense Act provides about 17,000 officers for the military establishment. The bill, therefore, will mean a reduction, all told, of 4,000 officers.

Appropriation for Veterans' Bureau

In the independent offices appropriation bill, \$377,474,622 is the sum included to cover the operation of the U. S. Veterans' Bureau passed by the House of Representatives, January 31. The measure was passed as originally presented by a subcommittee of the House Committee on Appropriations headed by Representative Wood of Indiana. This appropriation includes all expense for hospitalization, medical service and surgical service performed by this bureau for the World War veterans.

Neuropsychiatric Conference for Veterans' Bureau

Leading neuropsychiatric specialists of the United States will meet in a special conference in Washington called by Director Charles R. Forbes, director of the U. S. Veterans' Bureau, February 10. The question of mental diseases among the 9,000 ex-service men now in government hospitals will be discussed, including hospitalization, the necessity of additional hospital facilities and the training of the neuropsychiatric personnel. Colonel Forbes has already recommended to the Hospitalization Committee of the government that a school for the training of neuropsychiatric personnel, including physicians, nurses and reconstruction agents, be established at St. Elizabeth's Hospital, Washington, and plans for this course of instruction will also be presented to the conference for discussion. The chairman of the conference is Dr. William A. White of Washington, D. C.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Jan. 29, 1922.

The Influenza Epidemic

The epidemic of influenza, reported in a previous letter (THE JOURNAL, Jan. 21, 1922, p. 205), continues to spread and is now widely prevalent. It is of a mild and new type, though an outbreak of similar cases on a much smaller scale was observed in April of last year. Dizziness is first noticed, followed by loss of appetite and palpitation of the heart. Faint pinkish yellow papules appear on the shoulders and arms, and redness and puffiness of the face are often noticed. There is slight sore throat with glandular enlargement and cough, sometimes with bronchitis, but the bronchopneumonia, which proved so fatal in the last great epidemic, is absent. Gastric symptoms are common. The illness usually lasts only about a week but there is a tendency to relapse. Dr. A. Shadwell, the epidemiologist and author of the article on influenza in the Encyclopedia Britannica, in a letter to the Times points out that the great mystery of the pandemic diseases is the marked alternation of latency and activity, which is of the most irregular character and cannot be referred to any conditions, whether geographic, meteorologic or social, with which we are acquainted. "I do not refer to dissemination," says Dr. Shadwell, "about which much has been learned, but to the appearance and disappearance of a virulent type of disease. This applies to cholera and plague as well as to influenza. Why do these things start up from a state of quiescence at irregular intervals in an aggressive form and take the field, so to speak, against mankind? Why, after a campaign of varying intensity and duration, do they die away and in some cases disappear altogether? It is established that they spread mainly by human and animal intercourse, but why do they start? In the case of cholera, von Pettenkofer long ago suggested a connection with the level of the subsoil water, and Mr. Baldwin Latham made out a correspondence between plague and vapor tension in India. But such tentative conjectures do not carry us very far, and neither of these diseases concerns the Western world as influenza does. They are much more easily controlled. But influenza seems to increase its hold, and remains as great a mystery as when it got the name, which is in itself a confession of ignorance."

From the epidemiologic standpoint the epidemic is of great interest. Dr. J. Brownlee, director of statistics of the Medical Research Council, worked out a periodicity curve which he published in 1919 in the Lancet. He showed that influenza practically does not exist in the summer and autumn, the maximum of all epidemics falling between January and May. He found that minor epidemics recurred at intervals of thirty-three weeks, and that when an epidemic fell due in autumn it failed to materialize. Dr. C. O. Stalybrass has supported this theory of recurrence for minor epidemics, adding that major ones generally appear at intervals of ten years. According to Brownlee's theory, a minor epidemic is due in February this year. As the present epidemic does not appear to have yet reached its maximum, his prediction is fairly well verified. Since Pfeiffer's bacillus has been dethroned from its position as the specific cause, the question cannot be answered whether the various epidemics represent one or several diseases. The present epidemic began in November, notably in the western part of Nottinghamshire, and spread to the Potteries. In these areas it has nearly ceased. London was attacked about the end of November, but not severely until mid-December. A duration of six or



seven weeks has been the experience in the areas visited. The last severe epidemic in this country was in 1918-1919, when the deaths in London in the worst week amounted to 2,458. In the present epidemic the deaths ascribed to the disease in London last week were 551. The usual symptoms are headache, pain in the back and legs, congestion of the throat and some bronchial catarrh. Gastric symptoms and spotty rashes on the face also occur. The disease is most severe in very young children and persons over 65. This is in curious contrast to the last severe epidemic, which proved most fatal to those in the prime of life. The ministry of health is supplying vaccines to physicians. They do not appear to prevent attacks, but it is claimed that their timely use gives material security against dangerous complications, particularly pneumonia. As the protection takes ten days to develop, the vaccines are held to be of greatest use in those areas in which influenza has not yet developed. The ministry of health has arranged for meetings of an influenza committee and also for the admission to the fever hospitals of cases of influenzal pneumonia. As accommodation is limited, cases are to be selected for admission by health officers in conjunction with the patient's physician.

#### Color Blindness in Seamen

Dr. Edridge-Green, special examiner and adviser to the board of trade on color vision and eyesight, has made a report on the standard of rejection for color blindness in seamen. He states that there is no universally recognized standard since the wool test became obsolete. This test allowed 50 per cent. of dangerously color blind to pass, and of those rejected 50 per cent. were not dangerously color blind. The nautical advisers of the board of trade agree that any one who can distinguish between red, green and white lights at a distance of a mile has sufficient perception for purposes of navigation. About 25 per cent. of men have diminished color perception. As these cases form a complete series from total color blindness to supernormal color perception, the consideration is where the dividing line should be drawn. About 5 per cent. of men fail to distinguish between the red, green and white lights of a properly constructed lantern, or the actual lights themselves, at a distance of a mile. With the spectrometer they can be ranged in three definite classes—the dichromic, who see only two colors in the spectrum, red and violet with a neutral division between them, the trichromic, who see only three colors in the spectrum, red, green and violet, and who designate the yellow as red-green, and those who have shortening of the red end of the spectrum. The tetrachromic, who see four colors, red, yellow, green and violet, though in continual difficulty about blue and green, have a definite yellow sensation. Repeated and extensive examinations with actual lights, in some cases for more than five hours, have convinced Dr. Edridge-Green that for practical purposes the tetrachromic are not dangerous. The possession of a definite yellow sensation is therefore the deciding point for passing as practically normal. The lantern is therefore an efficient test, and cases of acquired color blindness, for instance, those with central color scotoma, are also excluded as well as those due to defective light perception, such as shortening of the red end of the spectrum.

#### The Medical Research Council

The one thing done by the National Insurance Act which is not open to criticism is the establishment of the National Research Council. The endowment of research in this country, whether by private benefactors or by the government, is very inadequate. Hence this establishment of medical research on a considerable scale has been a valuable step. This is well shown in the references to the work of the council which

have been made from time to time in *THE JOURNAL*. The annual report for the year ending Sept. 30, 1921, has just been issued. The grant received for the year was \$650,000. This is spent first in maintaining the National Institute for Medical Research at Hampstead, the central bureau. During the year, investigations have been made, among many others, on the bacteriology of typhoid fever and tuberculosis, the physics and biochemistry of ventilation, the standardization of diphtheria antitoxin, the serum treatment of tetanus, and the routine testing of arsphenamin. The work on ventilation was done by Capt. S. R. Douglas, director of the bacteriologic department, in conjunction with Leonard Hill. They found that, in the air of a room massively infected with microbes, by spraying with emulsions, humidity made little difference in the rate at which the microbes settled, but in moist air they settled more rapidly on cold than on warm surfaces. Dry air passed over microbes growing on agar carried away fewer than moist air; dust in the air also increased the number carried away. Ventilation enormously increased the rate at which microbes were carried away from an infected room, and even keeping the air in motion with a fan had the same effect. Saturation of the air with moisture increased the result of movement. Some remarkable results have been obtained from a study of local heating of the body by Hill in conjunction with others. When the hands are placed as far as the wrists in water at from 5 to 10 C. (41 to 50 F.) the whole body loses as much heat as is normally produced in the resting state. Conversely, when the hands are immersed in water at 44 C. (111.2 F.) the body gains as much heat as it produces normally. As local heating is so efficacious, it may be found to be the best method of distributing heat in workshops, each worker having an electrical appliance beneath his clothes and under his own control while cool air freely circulates. The council also provides for research work carried on by the clinical units of three London hospitals.

#### Death of the Oldest Physician in the Country

Dr. William Gibson, the oldest physician in the United Kingdom, has died at Campbeltown, Argyllshire, at the age of 98 years. He qualified as M.D. at the University of Edinburgh in 1858, and held various public appointments at Campbeltown for sixty-five years. The remarkable fact is that he retired from practice only fourteen months ago. He had wonderful vitality, and even as a nonagenarian pursued his professional routine with vigor and freshness of mind. He often showed how up to date he was in matters of medical knowledge and in sanitary science in his work as health officer of the town for over half a century. His tall, spare figure moving about the town will be missed for many a day. Up to the end he worked on foot, often saying that the exercise of walking was a valuable precaution against the infirmities of advancing years. His periodic reports to the town council on the health of the burgh were models of clarity and conciseness. Even recently his advice on a new housing scheme, given at an evening meeting, showed a thorough grasp of the question. "The old doctor," as he was familiarly called, took no little pride in the distinction of his great age and prolonged service, and with great reluctance resigned his appointments. At 95 a short illness led to the decision to retire, and he sent in his resignations. But before they could be dealt with he recovered, and feeling his vigor unimpaired, he asked leave to withdraw them, which was readily given. At last, in 1920, though suffering from no disease, he had to give up; the machine was running down. To the end he was possessed of all his faculties except for a certain degree of deafness. Apart from his busy professional life, his hobby was gardening. He not only engaged in the manual work but reveled in it, regarding it also as a means of pre-



serving his physical fitness. At the annual flower show he was a keen competitor. His wife died twelve years ago, and of a family of seven children only one survives, his youngest daughter.

#### Panel Physicians' Records

As reported in a previous letter, the issue of "record cards" to panel physicians by the ministry of health was not a wise step. It meant only a waste of time which could be better devoted to the treatment of the patients. This is well shown in a letter sent by the panel medical committee of Glostershire to the ministry of health, in which the most important points are these:

So far as the interests of the patients are concerned, a record would naturally be kept by the medical man of all cases of importance; but the results obtained by Sir James Mackenzie's St. Andrew's Institute of Clinical Research show conclusively that the record of early histories of common ailments does not assist in the ultimate diagnosis, prognosis, and treatment of individual conditions of disease. The record of attendances of patients, or of visits to them at their homes, is of no statistical value; nor is it of value in checking the medical man as to the care, or otherwise, he bestows on his patients. The patient is amply safeguarded in that respect by his ability to transfer his patronage to another physician if dissatisfied. On the other hand, it is a hindrance to a busy and anxious practitioner in the prosecution of his duties. Nor can a record of the ailments of, or of the medicines prescribed for, patients be of the slightest statistical, pathologic or therapeutic value in the vast majority of cases. Moreover, if ever these millions of record cards should be collected for statistical valuation, the work and difficulties of tabulation would be so enormous as to render the cost of the undertaking out of all proportion to the benefits, if any.

In a letter to the *Times*, Sir James Mackenzie states that the reference to St. Andrew's Institute requires elucidation. About two years ago, the late Sir Robert Morant, the chief official appointed by the government for administration of the insurance act, asked Sir James Mackenzie to be chairman of a committee to draw up a form of record for panel physicians. Sir James pointed out that the vast majority of such records would deal with patients who presented no gross signs of disease, and that medical knowledge had not advanced so far as to enable any one to make a reliable record of conditions other than gross diseases. The records would not be of the slightest value. He further stated that the matter of recording the early signs of disease was being worked on at St. Andrew's and that if the subject was left to the institute, it would endeavor to devise a reliable system. Unhappily, Sir Robert Morant died. The ministry of health then appointed a committee of its own to draw up the form of record now used by the panel physicians.

#### PARIS

(From Our Regular Correspondent)

Jan. 13, 1922.

#### Professor Tuffier's Impressions of Union Medical College, Peking, China

A few months ago, I mentioned the fact that Dr. Tuffier, professor of clinical surgery of the Faculté de médecine of Paris, had been invited by the Commission of the Rockefeller Institute to assist in the dedication of the Union Medical College of Peking, to give, on this occasion, several clinical lectures and to perform several operations (*THE JOURNAL*, Sept. 17, 1921, p. 952). Since returning to Paris, Professor Tuffier has given the Academy of Medicine an account of his experiences. Union Medical College, as it stands, he believes, is destined to reflect great credit on the United States, not only in China but throughout the Far East, from Java to

Vladivostok. In fact, it constitutes another mighty factor in the creation of a sphere of influence in China on the part of the United States, which, at the present time, is so prominent, so fruitful and so eminently desirable; and, at the same time, it is a philanthropic movement of a very high order. It goes without saying that the parallel that he draws between the Union Medical College and the French institutions in China is not in favor of the latter. The hospitals that we have out there are provided with a restricted surgical equipment—quite inadequate, in fact. Some of these hospitals are poor and out of date, having scarcely ordinary facilities. In French Indo-China, which is the richest of our colonies, the situation is, fortunately, more favorable; particularly at Saigon, the capital of Cochinchina, where the Pasteur Institute, under the direction of Drs. Yersin and Noël Bernard, manifests marked activity in the study of infectious diseases, which are so frequent and of so grave a type in Indo-China.

#### The Alienist and the Academy of Medicine

In spite of the protests mentioned by me in a previous letter (*THE JOURNAL*, Jan. 21, 1922, p. 207), the Academy of Medicine has not elected an alienist in place of the late Professor Dupré. The *Informateur des aliénistes et des neurologistes* remarks, in this connection, that it is the first time, since the foundation of the academy, that the section on hygiene and legal medicine has not contained authorized representatives of medicolegal psychiatry. This condition of affairs is, this journal thinks, especially regrettable in view of the fact that the problems bearing on the social service to be rendered psychopaths, on mental hygiene in general and the moral responsibility of criminals, and kindred topics, are acquiring ever greater sociologic importance. The Academy of Medicine has thus broken a well established tradition; for, since its very foundation, it has always counted among its membership one or more alienists, the first among whom were Pinel and Esquirol, who were succeeded by Falret, Baillarger, Luys, Ball and Ballet, and finally by Magnan and Dupré.

#### Physical Education in Relation to Military Service

The minister of war has decided to take advantage of the operations of the exemption boards in connection with the examining of the class of 1922, to determine to what extent the physical training that the young men examined may have received in civilian life influences the physical effectiveness of the contingent. Up to the present time, during the course of the examinations conducted by the exemption boards, aside from information in regard to height, weight and chest measurement, notes have been taken on certain indications to show whether candidates are adapted or not to various branches of the service, with a view to assigning them to the services for which they are best fitted. Hereafter, in order to have an exact record of the amount of physical training that recruits have received, they will be questioned individually by the recruiting officers to ascertain whether they have had any systematic physical training and whether they have participated in any forms of sport. The statistical findings secured in this manner will make it possible to compare the physical development of those who have had previous physical education with that of those who have not had such training.

#### Gratuitous Vaccination Against Typhoid

The question of vaccination against typhoid, as a measure to be adopted by the civilian population, having come, a few months ago, before the Academy of Medicine, the committee that was appointed to study the problem reached the conclusion that such vaccination should be recommended to the



general public on every occasion but that the time had not yet come to make it compulsory. However, in order to facilitate the introduction of typhoid vaccination and to establish agencies favoring it, the administrative council of the Assistance publique has recently opened four centers where vaccination against typhoid may be secured gratuitously. These centers are located in the Saint-Antoine, Cochin, Lariboisière and Trousseau hospitals, the latter being more particularly reserved for children.

#### The Use of Thyroid Preparations by Midwives

In a previous letter (THE JOURNAL, Nov. 26, 1921, p. 1749), I mentioned the resolutions of the Sociétés d'obstétrique et de gynécologie of Paris and Bordeaux, demanding that midwives should be deprived of the right of prescribing preparations of the pituitary gland and of the privilege of securing such for themselves. Indeed, the societies consider that preparations of the hypophysis, irrespective of the form, should be regarded as a dangerous medicament, and should, on that account, be placed on the list of substances not deliverable without a medical prescription. It may well be asked whether the same considerations should not be applied to thyroid preparations. In this connection, a copy of a circular letter has just been delivered to me which was sent out by manufacturers of "pharmaceutic specialties" to all the registered midwives of France, offering them, among other products, a particular brand of thyroid preparation at a liberal discount (30 per cent.). The overshrewd manufacturer of the products thus tempts midwives to buy his thyroid preparation with a view to selling it to their clients at a profit. By acting in this manner, midwives not only are lending themselves to the illegal practice of medicine (or pharmacy), but are also exposing their unfortunate patients to serious risks. Dr. E. Coulaud publishes in the most recent number of the *Annales de médecine* an interesting article on thyroid organotherapy in relation to tuberculosis, in which he shows that pulmonary tuberculosis in process of evolution is unfavorably influenced by thyroidotherapy. From the researches of Pirquet, we know that in the tuberculous the diminution in the sensibility to tuberculin coincides in most cases with a parallel decrease in immunity. We may say, then, that pregnancy corresponds clinically to a critical phase in the evolution of tuberculosis. Moreover, the same thing is true of the menstrual periods and of the menopause. It will be seen from this what serious accidents may result from thyroid medication as dispensed by midwives.

According to Coulaud, thyroid organotherapy should be regarded as positively contraindicated during the evolution of tuberculosis, and even in the case of nontuberculous subjects it should not be used otherwise than with great caution. It should always be borne in mind that it requires a careful surveillance of the respiratory apparatus.

#### Recent Vital Statistics of France

The minister of labor recently published the vital statistics for France for the first six months of 1921. They are here tabulated, along with the corresponding items for the first half of 1920:

	1920	1921
Births (living children).....	424,668	421,180
Stillbirths .....	19,823	19,874
Deaths .....	356,728	348,329
Marriages .....	333,242	238,185
Divorces .....	12,268	15,567

The births have decreased by 3,488, and the deaths by 8,399. The population has increased by 72,851. The number of marriages contracted has diminished considerably, there having been almost 100,000 fewer marriages in 1921 than in 1920.

#### BUENOS AIRES

(From Our Regular Correspondent)

Jan. 1, 1922.

#### Smallpox

The smallpox foci which developed recently in the province of Cordoba assumed a rather serious aspect. The cases were especially numerous in the city of Cordoba. The provincial public health authorities had to take energetic measures to cope with the disease. The people offered some resistance to vaccination and some cases were not reported. On the other hand, the public health authorities were blamed for concealing the importance of the epidemic in order not to discourage the summer visitors who go in large numbers, in this season, to the mountain resorts of the province. The measures applied, isolation, disinfection, vaccination, have brought about a decrease of the outbreak. The disease was conveyed from Cordoba to Rosario de Santa Fé, where several cases occurred. The disease was kept in check by the wise measures taken by the public assistance and the national department of public health, which sent vaccine and public vaccinators.

#### Maternity Department for Tuberculous Patients

December 18, there was inaugurated at the Hospital Vicente López y Planes a maternity department for tuberculous patients, presented by Miss Victoria Aguirre. This service is well installed in a building erected on some land belonging to the Charity Society.

#### Antituberculosis Campaign

In accordance with the resolution adopted at the recent antituberculosis conference, the authorities of the province of Buenos Aires have decided to take measures for the construction of a tuberculosis sanatorium at Sierra de la Ventana. A commission was appointed to choose the location and submit plans for the institution. Its members are Drs. Cabred (president), Masés, Sempé, Alsina Cometto, Valentini, Grau, Cabral, Roth (engineer) and Restagno (secretary). It is to be regretted that at Rosario the Argentine League Against Tuberculosis had to close its sanatorium at Saenz Peña, as no funds were available for its support.

#### Typhus Fever

The endemic foci of typhus fever near the mountains of Salta and Jujuy, while small, have been persistent and scattered, and have caused the national department of public health to conduct a permanent campaign against the disease. The number of cases has decreased 50 per cent. Sanitary stations and disinfecting offices have been put in operation, together with hot and cold baths, barber shops, ovens, steam disinfectors, etc. New clothing is also given to the patients. —There has been reported at Olavarria the death of a soldier from typhus fever. As the diagnosis has not been confirmed and so far no cases of the disease have been reported in the province of Buenos Aires, it will be necessary to receive further data on the matter.

#### Prevention of Orchitis Due to Mumps

No result has been obtained in the prevention of orchitis associated with mumps from the injections of diphtheria antitoxin, as announced by Dr. Rosso, or from peptone injections, by Drs. Vaccarezza and Vera.

#### Antiangrene Serum

In the national department of public health, Dr. A. Sordelli has begun to manufacture the antiangrene serum, thus far manufactured by the Pasteur Institute of Paris.

#### Personal

On the occasion of the retirement of Dr. J. B. Señorans as professor of toxicology, a tribute was rendered him in the



school of medicine. It has been recalled that he was the first Argentinian to give lessons in experimental physiology, in 1885, on his return from a three-year trip to Europe.—Dr. Hector de Cusatis has been appointed secretary of public assistance of Buenos Aires.—Professor Chutro has just given a series of conferences at Chile and has been invited to give another series at Montevideo.

### BUDAPEST

(From Our Regular Correspondent)

Jan. 12, 1922.

#### Precautions Against Cholera

On account of the prevalence of cholera in Russia and in some parts of Ukraine, the president of the medical council has laid down regulations, with a view to preventing the importation of the disease into Hungary. Every person who comes from a place infected with cholera and presents possible symptoms of the disease shall, on arrival at the Hungarian frontier, be detained at the railway station by the officer appointed for the purpose and shall be isolated until seen by a medical man. If the case is then considered not to be one of cholera, the person shall be allowed to continue his journey; but if the case is one of cholera, the commissary, acting in concert with the municipal authority, shall convey the patient to some place where, in the opinion of the medical man, isolation may be carried out under favorable conditions for the patient and for the prevention of infection. The prefect will also send a representative or a specially appointed medical man, who will take all the steps that are necessary. Similarly, any person coming from a place infected with cholera, and presenting symptoms, shall be isolated in a compartment of the train on which he is traveling. All railway servants are bound to act in accordance with this regulation. When the train reaches a station where a commissary resides, the patient shall be isolated. The carriages which have been occupied by persons suffering from cholera shall be emptied and disinfected. The bringing into Hungary of dirty linen and soiled clothing or bedding from infected districts is forbidden by law unless brought as luggage. When lodgings are taken by persons who either come direct from infected places or have left such places within the preceding eight days, the householder shall, within twenty-four hours of their arrival, report the fact to the police medical station. Every case of illness suspected to be cholera shall be immediately reported at the station. Every person suffering from an illness which is either recognized or suspected to be cholera must be immediately isolated, and all measures of prevention carried out with respect both to the patient and to those who have been associated with him.

#### Sanitation in the Hungarian Railways

At a recent meeting of the sanitary board of state railways, the executive officer was instructed to draw up certain rules and regulations regarding car sanitation, these to be considered in conference with various railway officials and reported on at the next regular meeting of the board. In carrying out its inquiry, four points are emphasized by the sanitary board; namely, (1) a sufficient amount of fresh air properly distributed; (2) cleanliness of the car and its contents, including closets; (3) the proper heating of the car, and (4) overcrowding. The board also inquires whether the foregoing points have received sufficient consideration from the private companies owning railways in Hungary, and the question is asked whether the board shall undertake to secure better sanitary conditions by formulating certain regulations. Circular letters have been sent out to a number of leading medical men, and the character of the replies will influence the board in its decision.

### The Antivivisection Movement in Roumania

In Bucharest, the opponents of physiologic research are endeavoring to revive the old argument that vivisection is useless for the advancement of medical science and may even be the cause of disastrous errors. Forty or fifty men have formed a little society for the propagation of these views, the members including several persons well known in society. It has not yet, however, made much progress, and at the first meeting held recently in the city, the attendance was small.

#### Distribution of Quinin in the South Balkan States

A recent Bucharest medical gazette contains a report of the sale and distribution of quinin in Albania and Montenegro as a prophylactic against malarial fever. The chief medical superintendent in Albania accepts the principle that quinin should not be distributed at public expense save in charitable dispensaries unless this measure is necessary to combat a severe epidemic of malaria. From past experience, it is calculated that every hundred thousand persons use from 150 to 200 pounds (68 to 90 kg.). As regards the distributing agency, he desires the hearty cooperation of every official. All touring officers should receive a supply for distribution; but for systematic distribution during a severe epidemic a nonofficial agency must necessarily be utilized, and in this matter the district boards are primarily responsible. Instructions are given for carrying out this systematic distribution of quinin. It is considered that, except in the case of a severe epidemic, the best method of making quinin readily acceptable is by the extension of the money unit packet system. The medical superintendent approved the commissioner's proposal to increase the amount of quinin sold for 5 cents from 0.4 to 0.5 gm. (6 to 8 grains). The establishment of additional agencies for the sale of these packets is under consideration, and arrangements have been made for the experimental issue of the drug in tablet form, three tablets of 0.2 gm. each being contained in a packet. It is quite possible that the larger the sales are, the greater the loss to the government will be, as it is not yet certain that 0.5 gm. can be sold profitably for 5 cents. But, whatever the loss the government is willing, indeed eager, to incur it, in the effort to encourage the use of the prophylactic.

### BERLIN

(From Our Regular Correspondent)

Jan. 6, 1922.

#### Protection to Posterity in Relation to Social Politics

At a recent meeting of the Berlin Society for Public Health Culture, Prof. Dr. H. Poll, biologist, raised the question as to whether, with the means hitherto employed in the field of personal and social hygiene for the strengthening of the individual and the improvement of environmental conditions, posterity is likely to derive like adequate benefit. Modern biology teaches as an irrefutable principle that the condition of every living organism is the resultant product of the rudimentary germ and of outside or external influences. In the past, the representatives of social hygiene have based their methods and conceptions on Lamarckian ideas of the heredity of acquired characters, assuming that strong, healthy persons will have strong, healthy offspring. However, the assumption that influences that affect the body of a given individual are of a hereditary nature is not proven. Nevertheless, a great quantity of striking proofs have been brought by horticulturists and animal breeders that by the process of careful selection the character of the stock of the different varieties of plants and animals can be permanently improved; especially if the laws of heredity as affecting plants and animals, such as have been discovered and expounded by modern scientific investigators, are carefully observed. For-



tified with this knowledge, it would seem possible to combat the threatening signs of degeneration by applying the principles of hygiene in the widest sense to the genotype or type specimen. For that purpose, two things are necessary. We must begin to work out methods by which we can recognize those who possess good characteristics, and also inquire into the laws that govern the hereditary transmission of these characteristics. Furthermore, we must find ways and means of increasing the number of persons closely resembling the genotype who are fit to be the progenitors of the human race. If by a process of education it should prove possible to develop a sense of the responsibility of the individual toward the people as a whole, so that public health as the highest and most valuable possession of the nation might be protected against the destructive attacks of individuals; if physicians should be able to fix in the public mind the conviction that it is a crime to bring sick children into the world, then eugenic ordinances and laws that today are looked on as baleful interferences with personal freedom would come to be accepted as a matter of course. On the other hand, every means must be employed to relieve parents of a part of the burden of bringing up large families of children. A special form of insurance for parents, special tax exemptions; in fact, a general preferential treatment of large families of children, viewed from the standpoint of eugenic quality and not merely from the numerical standpoint, should be worked out. During the course of the discussion that followed the lecture, the correctness of the ideas advanced was recognized on every hand, but the sentiment prevailed that the carrying out of such a plan would be difficult or well nigh impossible.

#### Financial Straits of German Students

In the present struggles of the German students, an improvement in the economic conditions on which a healthy life existence depends plays the most important part. Writing in the *Deutsche medizinische Wochenschrift*, G. Timmer calls attention to the wretched condition into which our student body is sinking more and more. It is true that statistics on health conditions among university students are very unfavorably affected by the fact that a considerable portion of them are ex-service men. The largest part of the needy students take their midday meal in the university kitchens. What they get must, in the nature of the case, be entirely inadequate. The writer mentions as an example an average university that is comparatively well situated (namely, Marburg), and gives an estimate of the usual food allowances received by the students, during the summer of 1921, for the price of 3 marks. (Since that time the same meal has advanced considerably in price.) The calory value of this midday meal was 773. As the daily nutritional needs of an adult engaged in light employment, and leading, in the main, a sedentary life, amount to from 2,300 to 2,500 calories, the midday meal furnished scarcely a third of the requisite amount of food. And if this food allowance is too small for the preservation of a body that is intact, how much more unfortunate is the situation when students whose health is already undermined receive no more than this. Several thousand of our students have become a prey of tuberculosis, in which condition good wholesome food is the most important therapeutic factor. In Marburg, last semester, 40 per cent. of the students who took their midday meal in the university kitchens were suffering from some pathologic condition, 11 per cent. from severe war injuries, 7 per cent. from grave nervous affections, 7 per cent. from heart disease, and 5 per cent. from lung trouble. The hygienic conditions in student quarters are often unendurable. The students are living, to a great extent, in poorly lighted attic rooms. Many students lack the means of purchasing fuel for the winter, so that they frequently have to study in unheated rooms.

## Marriages

SAMUEL AGEE FUQUA, Lieut., M. C., U. S. Naval Reserve Force, Chicago, to Miss Geraldine McElroy of Rensselaer, Mo., January 21.

LESLIE LENTON BLAIR to Miss Elizabeth Montgomery Anderson, both of Marietta, Ga., January 11.

GIDEON TIMBERLAKE, Baltimore, to Miss Sallie Virginia Helms, at Washington, D. C., January 19.

GUY LIVINGSTON HOWE, Brighton, N. Y., to Miss Kathryn Driver at Syracuse, N. Y., January 31.

MERRILL FOWLER HOSMER, Springfield, Mass., to Miss Virginia Yuseck of Detroit, January 10.

DERBY HOSTER SWENGEL, Montgomery, Ala., to Miss Edith Milnor of Philadelphia, January 12.

CARROL CONWAY TURNER to Miss Marguerite Randolph, both of Memphis, January 10.

ROBERT C. ELLIS, Shelby, N. C., to Miss Patsy McCormick of Spencer, N. C., January 7.

JESÚS CHAPA BADILLO to Miss Aurora Garza at Laredo, Texas, January 29.

## Deaths

Walter Lindley ☉ Los Angeles; Long Island College Hospital, Brooklyn, 1875; died, January 24, from cerebral hemorrhage, aged 70; (L.L.D., St. Vincent's College, 1903); former health officer of Los Angeles and member Los Angeles board of education; at one time superintendent of the Los Angeles County Hospital; dean of the University of Southern California College of Medicine, Los Angeles, 1902-1904; president of the state board of medical examiners; and member director of the California Hospital. He founded, in 1885, and since then has been editor and publisher of the *Southern California Practitioner*; one of the original incorporators of the Los Angeles County Medical Association. Dr. Lindley was president of the Medical Society of the State of California, 1889-1890. He was author of "California of the South," "The Delinquent Child in Great Britain and France," the "Traducers of Shakespeare," "Irish Dramatists and the Irish Drama," and several other works.

Andrew Jackson Barchfield ☉ Mount Oliver, Pa.; Jefferson Medical College, Philadelphia, 1884; was killed, January 28, when the the roof of a moving picture theater collapsed in Washington, D. C., aged 58. Dr. Barchfield was born in Pittsburgh, May 18, 1863; educated at the Pittsburgh High School; for several years was city physician of Pittsburgh; president of the board of directors and member of the staff of the South Side Hospital, Pittsburgh; member of the city council, 1886-1888; member of the fifty-ninth to sixty-fourth Congresses, 1905-1917, thirty-second, Pennsylvania district. He was a delegate to the Peace Congress, held in Brussels, Belgium, 1905.

Ella B. Everitt ☉ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1891; professor of gynecology at her alma mater; at one time superintendent of the Northwestern Hospital for Women and Children, Minneapolis; was instantly killed, January 24, when the automobile in which she was riding was struck by a motor truck, aged 55.

Herman C. H. Herold, Newark, N. J.; Bellevue Hospital Medical College, New York City, 1878; member of the board of health for thirty years and at one time president; formerly surgeon at St. Michael's Hospital and physician in charge, City Hospital and Dispensary, Newark; died, January 20, from senility, aged 68.

Louis H. Landman ☉ Cincinnati; Miami Medical College, Cincinnati, 1895; member of the American Academy of Ophthalmology and Oto-Laryngology; member of the Cincinnati Academy of Medicine; died, January 26, in Palestine, where he had gone to practice his profession among the Jewish colonists, aged 62.

Daniel W. Dodson, Nanticoke, Pa.; Jefferson Medical College, Philadelphia, 1888; member of the Medical Society of the State of Pennsylvania; formerly superintendent of New-

☉ Indicates "Fellow" of the American Medical Association.



port Township schools for ten years; at one time coroner of Luzerne County; died, January 14, from acute articular rheumatism, aged 69.

**Marcus J. Levitt** ☉ Brooklyn; Baltimore University School of Medicine, Baltimore, 1900; for fifteen years on the staff of the Jewish Hospital, Brooklyn; president of the Williamsburgh Medical Society; died, January 25, at the Jewish Hospital, from meningitis, aged 44.

**William George Allen**, Glen Allan, Miss.; Medical College of Louisiana (Tulane University) Louisville, 1873; member of the Mississippi State Medical Association; Confederate veteran; former county health officer and member of the county pension board; died, January 12, from senility, aged 75.

**Frederick Wadsworth Halsey**, Boston; Medical Department of Columbian University, Washington, D. C., 1871; associate professor of diseases of the rectum, Boston University School of Medicine, Boston; formerly vice president of the Massachusetts Homeopathic Medical Society; died, January 20, aged 72.

**Moses Henry Aikins**, Burnhamthorpe, Ont., Canada; University of Toronto, Ont., 1858; M. R. C. S., England, 1858; formerly professor of anatomy at the Toronto School of Medicine; emeritus professor of anatomy, University of Toronto; died recently, aged 89.

**James P. Blackburn** ☉ McKeesport, Pa.; University of Pennsylvania, Philadelphia, 1891; organized the McKeesport Academy of Medicine of which he was first president; president of the chamber of commerce; died, January 22, from heart disease, aged 58.

**John M. Weaver**, Mount Juliet, Tenn.; University of Tennessee College of Medicine, Memphis, 1897; member of the Tennessee State Medical Association; died, January 14, from the effects of taking chloroform by mistake for cough mixture, aged 47.

**Christopher A. Anderson** ☉ Rush City, Minn.; University of Minnesota Medical School, Minneapolis, 1892; was instantly killed, December 25, when the automobile in which he was riding was struck by a train, aged 54.

**Howell White**, Fishkill, N. Y.; Bellevue Hospital Medical College, New York City, 1879; former coroner of Dutchess County; physician to the Highland Hospital, Beacon; died, January 24, from heart disease, aged 65.

**Edgar A. Bagley**, Alma, Mich.; Detroit Homeopathic Medical College, 1874; for two terms village president; formerly president of the Gratiot County Medical Society; died recently, at Wenatchee, Wash., aged 73.

**Wellington W. Dear**, Parsons, W. Va.; Bellevue Hospital Medical College, New York City, 1875; member of the West Virginia State Medical Association; died, January 17, from pneumonia, aged 67.

**Arthur Whitting Evans** ☉ Independence, Kan.; Hahnemann Medical College and Hospital of Chicago, 1892; died, January 14, from chronic nephritis, at the Research Hospital, Kansas City, aged 58.

**Henry Wilson Owen**, Bakersfield, Calif.; College of Physicians and Surgeons, Kansas City University, 1901; member of the Medical Society of the State of California; died in December, aged 53.

**Josiah I. Hunter** ☉ New Orleans; Tulane University of Louisiana, New Orleans, 1895; visiting physician, children's clinic, Touro Infirmary; died suddenly, January 15, from heart disease, aged 56.

**James Craig Temple**, Woodlawn, Pa.; Eclectic Medical Institute, Cincinnati, 1878; Medical Department Western Reserve University, Cleveland, 1883; died, January 19, aged 70.

**Harry Seely Welch**, San Francisco; Bellevue Hospital Medical College, New York City, 1872; formerly surgeon, Second Regiment of Infantry, National Guard; died recently, aged 73.

**John S. Schaul**, Chalfont, Pa.; University of Pennsylvania, Philadelphia, 1884; veteran of the Spanish-American War; died, January 22, at his winter home, St. Petersburg, Fla., aged 52.

**Henry M. Holtclaw**, Perry, Ga.; Bellevue Hospital Medical College, New York City, 1881; was found dead in bed, January 21, with a self-inflicted bullet wound through his head, aged 63.

**Peter Eugene Deeham**, Arlington Heights, Mass.; College of Physicians and Surgeons, Boston, 1894; physician in charge of the Pinewood Rest Sanatorium; died, January 22, aged 68.

**James H. Johnson** ☉ San Gabriel, Calif.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; Medical Department of Columbia College, New York City; 1887; died, January 15, aged 71.

**James Len Yelton**, Augusta, Ky.; Hospital College of Medicine, Louisville, 1897; member of the Kentucky State Medical Association; died, January 18, from pericarditis, aged 52.

**Overton H. Ridings**, Meadville, Mo.; Missouri Medical College, St. Louis, 1883; died, January 13, at the Research Hospital, Kansas City, from carcinoma of the stomach, aged 66.

**Hyrum Smith Woolley, Jr.** ☉ Pocatello, Idaho; Northwestern University Medical School, Chicago, 1909; was killed in his office, January 9, by an unknown assassin, aged 47.

**Milton O. Gerhard**, Lancaster, Pa.; University of Pennsylvania, Philadelphia, 1877; member of the Medical Society of the State of Pennsylvania; died recently, aged 70.

**Aid B. Jordon**, Marblehead, Ohio; Detroit College of Medicine, Detroit, 1892; member of the Ohio State Medical Association; died, January 19, from septicemia, aged 52.

**Eugene David O'Neill**, Biddeford, Me.; College of Physicians and Surgeons, Baltimore, 1893; member of the Maine Medical Association; died, January 16, aged 56.

**Allan Fisher Pringle**, Dunville, Ont., Canada; Trinity Medical College, Toronto, 1883; formerly member of the board of education; died, January 17, aged 78.

**Austin C. L. Hottenstein**, Kutztown, Pa.; Jefferson Medical College, 1871; died, January 20, from the effects of a fall sustained two months previously, aged 74.

**David H. Harold**, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1889; formerly a minister in the Quaker Church; died, November 30, aged 77.

**Peter Paul Jaglinski**, Cleveland; Ohio State University College of Homeopathic Medicine, Columbus, 1921; died, January 13, from pneumonia, aged 28.

**John F. Watson**, Bastrop, La.; Medical College of Alabama, Mobile, 1885; president of the board of health; died, December 19, from heart disease, aged 58.

**Samuel Bradbury Hanlin**, Pomeroy, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1895; died, January 19, from diabetes, aged 49.

**Alexander Strong**, New York City; Medical Department of Columbia College, New York City, 1871; died, January 22, from heart disease, aged 75.

**Isaac M. Poynor**, Berryville, Ark.; University of Arkansas, Little Rock, 1890; member of the Arkansas Medical Society; died, November 21, aged 58.

**Hugo Malor**, Louisville, Ky.; University of Louisville, Louisville, 1898; was found dead in his office, January 20, from heart disease, aged 58.

**James I. Douthart**, Pratt, Kan. (license, Kansas, 1901); surgeon for the Long Island Railroad; died, January 25, at Long Beach, Calif., aged 78.

**George W. Bley** ☉ Beardstown, Ill.; Jefferson Medical College, Philadelphia, 1881; died suddenly, January 20, from angina pectoris, aged 70.

**John B. Conaway**, York, Neb.; Rush Medical College, Chicago, 1888; Civil War veteran; died, January 13, from senility, aged 81.

**Charles F. Dupre**, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1871; Civil War veteran; died, January 18, aged 83.

**Franklin C. Heard**, Brownsville, Tenn.; Medical College of Alabama, Mobile, 1872; died, January 18, at Ittabena, Miss., from paresis.

**Walter W. Matson** ☉ Brookville, Pa.; Medical Department of Columbia University, New York City, 1889; died, January 21, aged 56.

**Fanny Wohlfeil Apfel**, Brooklyn; University of Lemberg, Poland, 1872; died, January 5, from intestinal obstruction, aged 81.

**James L. Dedge**, Alma, Ga.; Southern Medical College, Atlanta, 1890; died, December 17, following a long illness, aged 53.

**George Alvin Hill** ☉ Philadelphia; University of Pennsylvania, Philadelphia, 1874; ophthalmologist; died, January 23, aged 70.

**Cyrus L. Wilson**, Ewing, Ind.; University of Louisville, Louisville, Ky., 1881; died, January 18, from heart disease, aged 68.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### STYPTYSATE NOT ADMITTED TO N. N. R.

#### Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report, declaring Styptysate (Ernst Bischoff Co., Inc.) inadmissible to New and Nonofficial Remedies.

W. A. PUCKNER, Secretary.

Styptysate, according to the advertisement of Ernst Bischoff Co., Inc., New York, is "obtained by dialysis from Bursa Pastoris (Sheppard's [sic!] Purse)." It is claimed to be "The Remedy For Hemorrhages," to be "Superior to Ergot and Hydrastis," "of particular advantage in Menorrhagia and Metorrhagia" and to have been "found of great value in vesical hemorrhages and hemorrhages from mucous membranes in general." The Styptysate label bears the synonym "Dialysate Herba Bursa Pastoris"; the statement that it contains "alcohol 11 per cent." and that it is "made in Germany." No other statement of the composition or strength of "Styptysate" is furnished nor is the name of the German manufacturer disclosed.

In an advertising circular entitled "Styptysate, a New Reliable Hemostatic," it is declared that in recent years the plant, Shepherd's Purse (*Capsella bursa pastoris*), "has been submitted to clinical tests in the form of a concentrated dialysate, known as Styptysate, by Loewy, Oppenheim, Krummacher and others, and that their reports coincide in regard to Styptysate as a hemostatic *par excellence*, particularly in uterine hemorrhages, even in cases where ergot and hydrastis had failed to produce satisfactory results." The circular also reprints some "short clinical reports" without reference to their authorship; one ascribed to Krummacher and two ascribed to "B.H.M., Kansas City, Mo.," and the following references: "A. Krummacher, M.D., *Monthly Review for Obstetrics and Gynecology*, Berlin, Vol. XLIX, 4, and Vol. LII." "H. Oppenheim, M.D., *Medical Clinic*, Berlin, 1920, 35."

Shepherd's Purse is a weed common in the United States and in Europe. Like most other herbs, it has some reputation as a folk medicine. It is used by eclectics and homeopaths, being included in the Homeopathic Pharmacopeia of the United States. Shepherd's Purse receives no consideration at the hands of the authors of standard works on materia medica, pharmacology or therapeutics.

From an examination of recent German medical publications, it appears that the use of Shepherd's Purse was proposed as a substitute for ergot and hydrastis, when the latter drugs became scarce in Germany. These publications, in the main, emanate from those in the employ of pharmaceutical firms and deal with proprietary preparations or they are written by physicians who used these proprietary preparations at the solicitation of the manufacturers. For this reason the reported results must be accepted with reserve.

One of the proprietary preparations discussed in the German publications is Styptysate, manufactured by Isalfabrik Johannes Buerger, Wernigerode. It is said to be produced by submitting the juice of fresh Shepherd's Purse to dialysis and preserving the dialysate by the addition of alcohol. There is no statement as to the drug strength or the chemical or biological standards, if any, used in its manufacture; hence, the preparation is essentially a secret one. As first produced, the preparation seems to have been fortified by the addition of cotarnin: the dose was then given as ten to fifteen drops. Later, as the cost of cotarnin went up, this drug was omitted, and the drug strength increased; the dose of the new preparation is given as twenty-five to thirty drops. Just what relation, if any, the Styptysate of Ernst Bischoff Co., Inc., bears to that of the Isalfabrik Johannes Buerger, Wernige-

rode, cannot be determined from the Bischoff advertising. If it has any relationship the announcement that no narcotic order is required when ordering Styptysate would indicate that the new preparation is supplied; the old one with its addition of cotarnin would require a narcotic order. On the other hand, the recommended dose of the cotarnin-free preparation is twenty-five to thirty drops, whereas the product sold by Bischoff and Co. is to be given in doses of ten to fifteen drops—that is, in the amount proposed for the cotarnin-fortified product.

What justification is there for the claim that Styptysate has been submitted to clinical tests by Loewy, Oppenheim and Krummacher and found to be a hemostatic *par excellence* and efficient even where ergot had failed to give satisfactory results? Loewy (*Zentralblatt für Gynäcologic* 42:920, 1921) made some pharmacologic tests on guinea-pigs with the cotarnin-containing preparation, but reported no clinical trials. Hans Oppenheim (*Medizinische Klinik*, Aug. 29, 1920, p. 906) reported that he was agreeably surprised at the excellent results (*vorzuglichem Erfolg*) obtained with the drug—but he did not assert that it is superior to ergot.

Krummacher reported on thirteen cases of profuse menstruation in which the patients were treated with Styptysate, using for a part, the preparation containing cotarnin and for the other a preparation without cotarnin. He reported as good results with the cotarnin-free preparation in larger dosage as with the cotarnin-containing preparation in smaller dosage. Krummacher did not compare Styptysate with ergot. Some of Krummacher's cases are quoted, with some typographical errors, in the Bischoff circular.

On the assumption that the product discussed in German publications is the Styptysate marketed in the United States, the best that can be said for it is, that during a shortage of ergot it was used in place of that established drug. There is no evidence to warrant the use of this indefinite proprietary in place of the biologically standardized fluidextract of ergot or other standardized ergot preparations.

Styptysate (Ernst Bischoff and Co., Inc.) is inadmissible to New and Nonofficial Remedies because its composition is semisecret and indefinite and there is no evidence that its uniformity and strength is controlled (Rules 1 and 2); further, it is inadmissible because the therapeutic claims advanced for it are exaggerated and unwarranted (Rule 6) and because there is no evidence that it possesses any advantage over established drugs such as the biologically standardized fluidextract of ergot or the definite ergot preparations admitted to New and Nonofficial Remedies.

## Correspondence

### "OPTIC NEURITIS IN SERUM SICKNESS"

To the Editor:—In reading Dr. Mason's article concerning serum sickness (*THE JOURNAL*, Jan. 14, 1922, p. 88), I was impressed with the quantity of serum (500 c.c. within four days) administered intravenously. I have seen it stated by authorities on the subject that the occurrence of serum reactions is independent of the quantity of serum employed. My experience, however, does not bear out this statement. My observations have tended to indicate that the frequency and degree of foreign protein reactions are considerably in direct proportion to the quantity (within certain limits) of protein injected.

I have never seen severe reactions or true serum sickness following the administration of small quantities (1 to 2 or 3 c.c.) of animal serum—although some deaths produced by the injection of immunizing doses are recorded—and the incidence of even mild manifestations is decidedly less than when larger quantities (30 c.c. or more) are employed. On the other hand, varying degrees of these reactions occur in nearly every instance in which 40 c.c. or more is used. As



to the degree of allergy, exhibitions other than slight urticaria are infrequent from the injection of from 1 to 3 c.c. of horse serum, whereas such large injections as from 60 to 200 c.c. are prone to evoke a chill, high fever, arthralgia, albuminuria, etc. The method of injection also influences reactions, the intravenous route affording more rapid and in some degree severer manifestations than the intramuscular or subcutaneous route. These observations are not inconsistent when we consider the effects of vaccines or of other foreign proteins, such as toxins, whose reactions are in direct proportion to the quantities absorbed.

LOUIS HANNAH, M.D., Sylvania, Ga.

#### ECHTMAN'S RHINOPULMONARY REFLEX

*To the Editor:*—If the upper band of Riviere or the posterior portion of Krönig's isthmus is gently percussed in a person with healthy lungs and unilateral nasal obstruction, some degree of impaired resonance will be noticed in the majority of cases, and the impairment will be found to be localized to the side obstructed.

Riviere speaks of a similar phenomenon but in a rather general way. He says:

If gentle percussion is applied up or down the back in a case of pulmonary tuberculosis at whatever stage, it will be found that bands of slight impairment are present at the apex, and also across the lower scapular region on both sides; but more strongly marked at the side of disease or of more advanced disease. . . . The upper of these bands reaches down to the level of the junction between the first and second dorsal vertebrae, the lower extends between the fifth and seventh dorsal spines. . . . The most notable source of possible error lies in the fact that the reflex is present in all marked cases of nasal disease, particularly if accompanied by obstruction. If nasal obstruction is present, no significance at all can be attached to the presence of the reflex bands of impairment.

What I noticed is, as stated above, that in the healthy subject with unilateral nasal obstruction, impairment, being present in the majority of such cases, is localized to the side obstructed.

This phenomenon may be of importance for diagnostic purposes. In the healthy subject with unilateral nasal obstruction the impairment, if present, should be only on the side obstructed. If in spite of the unilateral obstruction the impairment is found on both sides, some tuberculous lung disease should be suspected. If the nasal obstruction is on both sides, then "no significance at all can be attached to the presence of the reflex bands of impairment."

The spot of impairment in question corresponds also with the posterior portion of Krönig's isthmus. This isthmus "is a band of resonance which crosses the shoulder. Its narrowest point is at the top of the shoulder, and in both front and back it widens out to meet the extended areas of resonance beneath the clavicle and supraspinous fossa" (Norris and Landis, "Diseases of the Chest").

JOSEPH ECHTMAN, M.D., New York.

#### "THE CLINICAL APPLICATION OF THE AUDION AMPLIFIER"

*To the Editor:*—I have just read with interest the article by Dr. Magnus J. Myres on "The Clinical Application of the Audion Amplifier" (THE JOURNAL, Jan. 14, 1922, p. 100). While stationed at Army General Hospital No. 16, New Haven, Conn., in the latter part of 1918, I was impressed with the difference of opinion that often arose over what was heard by a number of examiners who were studying patients with tuberculosis. I have also been impressed with the difficulty of bearing in mind sounds originally heard when examining patients at a later date. Knowing that the dictophones had been used for recording whispered conversation, I did not see why this apparatus could not be applied for the

recording of pulmonary and cardiac sounds. With this idea in mind, I wrote the Dictaphone Company, March 9, 1920, which suggested the advisability of performing some experiments. Aug. 20, 1919, I also wrote to Mr. Edison. He replied that in his opinion the sounds heard through the stethoscope could be recorded on a phonograph by means of a simple Bell telephone and a four-stage audion, and that he was experimenting on the amplifying of sounds and would shortly try the experiment. It seems clear that such a method for recording unusual sounds, percussion notes, cough, râles, etc., would be of considerable service, both in teaching and in clinical practice.

O. L. SUGGETT, M.D., St. Louis.

#### "BONE AND JOINT CHANGES IN CONGENITAL SYPHILIS"

*To the Editor:*—With reference to the interesting paper by Drs. Dembo, Litchfield and Foote (THE JOURNAL, Feb. 4, 1922, p. 319), it might be well to call attention to two theses in which these conditions have been thoroughly described. I refer to the thesis by Dr. George Noir on "Dactylite syphilitique" (Paris, 1906), in which that entity is well discussed from the clinical standpoint. The late R. W. Taylor was among the first to describe this condition, and his papers are still classical. Dr. Edouard Benazet has given an interesting and practical description with special reference to syphilis of the long bones. His thesis (Paris, 1911) on "Syphilis héréditaire tardive des os longs chez l'enfant et chez l'adolescent" is devoted largely to a description of the roentgen-ray findings in a large number of cases.

B. BARKER BEESON, M.D., Chicago.

#### THE PRICE OF MEDICAL BOOKS

*To the Editor:*—The swarm of profiteers that appeared during the war has been materially diminished, as pressure of public opinion has gradually caused a reduction to near prewar levels in most lines of trade.

Among the profiteers who still hold out for their war prices are the publishers of medical books. The prices demanded today by the medical publishing houses are little less than extortionate. In any recent issue of THE JOURNAL are advertisements listing books at \$10 and \$12 which sold for \$5.50 and \$6 in 1916; small octavos of less than 300 pages are priced at \$6.50.

It is time that physicians should protest, and in a practical way. Every doctor subscribes to enough periodical literature to keep him up to date, if read, so there would be no need of his becoming "rusty" during a year's vacation from buying double-priced medical books.

ALBERT O. HOLMES, M.D., Colorado Springs.

#### PRIORITY IN USE OF ADHESIVE STRIPS FOR VARICOSE ULCERS OF THE LEG

*To the Editor:*—In connection with the recent discussion in THE JOURNAL as to priority in the use of strips of adhesive plaster in the treatment of ulcers of the leg, it may not be amiss to call attention to the fact that Dr. Thomas Baynton of Bristol described and successfully employed this method as early as 1798 (Duncan's Annals of Medicine, 1798, reviewed in the Medical Repository, New York 3:93, 1800).

Baynton told how to prepare the plaster, and his method of application differed in no essential from that more recently advised. Truly the age and pedigree of methods of treatment are often uncertain and difficult to determine.

GEORGE H. WEAVER, M.D., Chicago.



## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### COMPARISON OF MERCURIAL PREPARATIONS USED IN THERAPY OF SYPHILIS

*To the Editor:*—Kindly advise me regarding the dosage and merits of mercuric cacodylate given by intramuscular injection for syphilis. I have injected two-thirds grain once a week instead of 1 grain of mercuric salicylate because the former caused less pain and tenderness. What is your opinion as to the relative merits of these two agents? Of how much mercuric salicylate is two-thirds grain of mercuric cacodylate equivalent in therapeutic values? Is it likely that we can get as good results from mercuric cacodylate?

In spite of my using a long needle and injecting the mercuric salicylate into the muscle beneath the fascia, the patient often complains of a great deal of pain and tenderness; hence the temptation to inject mercuric cacodylate instead.

C. F. VOYLES, M.D., Indianapolis.

**ANSWER.**—As cacodylates have been found practically worthless in the treatment of syphilis, mercuric cacodylate must be considered as merely an administration form of mercury to be compared with other mercurial preparations used for the same purpose. A dose of 0.04 gm. ( $\frac{2}{3}$  grain) of mercuric cacodylate—or, rather, the double salt with sodium chlorid used under this name, which represents 23 per cent. of HgO—contains approximately 0.01 gm. ( $\frac{1}{6}$  grain) of mercury; and, as mercuric salicylate contains a little more than twice as much (from 54 to 59.5 per cent.) of mercury, the equivalent dose of the latter would be, roughly, 0.02 gm. ( $\frac{1}{3}$  grain). In other words, when one gives a dose of 0.06 gm. (1 grain) of mercuric salicylate, one gives three times as much mercury as when giving 0.04 gm. ( $\frac{2}{3}$  grain) of mercuric cacodylate. Hence not more than one third the therapeutic effect might be expected from these injections of cacodylate.

The two preparations cannot be compared with each other as to local or general action, as the cacodylate is soluble while the salicylate is practically insoluble. The cacodylate should rather be compared with such a preparation as mercuric succinimid. The latter probably causes no more pain on intramuscular administration than the former. As it is improbable that the soluble cacodylate would remain in the system any longer than the soluble succinimid, the cacodylate has to be administered as often as the succinimid, i. e., daily, in order to maintain adequate mercurial action.

The reason why mercuric salicylate is a favorite drug is the argument that, because of its comparative insolubility, it forms a depot of mercury in the tissues from which the metal is slowly given off, so that a week's dose may be administered at one time. To keep the patient under as continuous mercurialization as would be secured by the ordinary dose of 0.10 gm. ( $1\frac{1}{2}$  grains) of mercuric salicylate given once a week, six doses of 0.04 gm. ( $\frac{2}{3}$  grain) of cacodylate would have to be given: in other words, a daily dose excepting Sunday. The pain and induration produced by mercuric salicylate is the price the patient must pay for the convenience of weekly administrations.

### FORMALDEHYD POISONING

*To the Editor:*—Recently a patient drank 4 ounces (120 c.c.) of formaldehyd and lived. This is a new form of poisoning to me, and I would appreciate some information on the subject, giving amounts taken, treatment, results, deaths and frequency of this form of poisoning. Sample is sent under separate cover. I have searched through the files of THE JOURNAL and do not find much there or in the texts.

B. L. HALE, M.D., Cherryvale, Kan.

**ANSWER.**—A number of cases of poisoning by formaldehyd solution have been reported. The symptoms consist of immediate and severe abdominal pain; often sudden and prolonged loss of consciousness; cyanosis; collapse, and repeated vomiting of blood-stained mucus. The vomitus and stomach washings, as well as the stools, have a strong odor of formaldehyd. The urine contains formic acid. In fatal cases, death usually occurs in from twenty-four to forty-eight hours, although several patients have succumbed in less than thirty minutes. The necropsy reveals severe gastritis with erosions. In nonfatal cases, the urine is suppressed for from twelve to twenty-four hours, after which it generally contains blood and casts. There is often diarrhea and tenesmus, sore mouth and dysphagia. The recovery is curiously rapid, the patients being well within a week. The patients who died all took

more than 90 c.c. (3 fluidounces), of the commercial (37 per cent.) solution. The largest quantity from which recovery has previously been reported is 60 c.c. (2 fluidounces), except in one case in which the patient swallowed a quantity believed to be from 100 to 120 c.c. (3 to 4 fluidounces).

Since the amount taken in Dr. Hale's case is about the maximum of any reported in which recovery took place, it seemed possible that the solution was not of full strength. An assay of the specimen in the A. M. A. Chemical Laboratory, however, showed 37 per cent. of formaldehyd, which is fully up to the U. S. P. standard. The treatment consists in the administration of very dilute ammonia water, ammonium salts in solution and lavage.

### DEPRECIATION OF ROENTGEN-RAY APPARATUS DEDUCTIBLE FOR INCOME TAX

*To the Editor:*—What percentage for depreciation may be deducted from income tax on roentgen-ray outfit; also on other surgical appliances?

JOSEPH SPANGLER, M.D., Buffalo.

**ANSWER.**—There is no definite percentage deductible for depreciation. The plan generally accepted by the Internal Revenue Office is the original cost of the article (or its value on March 1, 1913, if purchased before that date) divided by the number of years of its usefulness. This, of course, cannot be calculated in the case of each surgical appliance, so that a general average must be struck. If the amount deducted is reasonable and can be justified if necessary, there will probably be no difficulty about its being allowed. It is best in all cases to support claims by a sworn inventory list.

### SCARLET FEVER

*To the Editor:*—Please answer the following through Queries and Minor Notes, and omit my name: 1. What is considered a safe period of isolation in a case of mild, uncomplicated scarlet fever? 2. What is the present opinion of authorities in regard to the danger of infection from desquamating skin? 3. What disinfection are boards of health in the large cities using after scarlet fever?

E. V.

**ANSWER.**—1. The period of isolation in scarlet fever has generally been shortened to four or five weeks in the absence of discharges from the nose and ears, and with the tonsils free from any active inflammatory process.

2. Most authorities are inclined to the opinion that the desquamating skin can be safely ignored as a means of spreading scarlet fever.

3. The tendency among boards of health has been to depend more on disinfection by steam and boiling, and on mechanical cleansing by washing with soap and water, by painting, papering, etc., and to restrict the use of chemical disinfectants. Custom has, however, deterred many from entirely discarding the old methods of fumigation with formaldehyd gas.

### STATE EMPLOYEES AND THE INCOME TAX

*To the Editor:*—I note that your statements concerning income tax make no reference to physicians in the employ of the state. I should like to inquire whether physicians employed by the state in state institutions are required to pay a tax as others when the income is above \$1,000 for single men.

L. P. H., Fort Wayne, Ind.

**ANSWER.**—Salaries or wages paid to officials or employees of states, counties or cities are exempt from taxation under the federal income tax law. This is the point on which the first income tax law was declared unconstitutional by the United States Supreme Court, it being held that the federal government has no authority to increase or diminish compensation paid to officials of any state or political subdivision thereof. On the income tax returns, the instructions under paragraph five, items exempted from tax, read: "Compensation paid by a state or political division thereof to its officials or employees." Under this exemption all money paid out for salaries or wages by a state, county, township or municipality is exempt from taxation under the federal law. This exemption, of course, would not apply to any state income tax law that may have been passed.

### MEDICAL HISTORY OF THE WORLD WAR

*To the Editor:*—Where can I get the first volume of the "Medical History of the World War," designated as Volume XV—Statistics, described under Current Comment in THE JOURNAL, February 4?

J. B. PROCTOR, M.D., New York.

**ANSWER.**—Copies may be procured from the Superintendent of Documents, Government Printing Office, Washington, D. C., \$1.75 per copy.



Medical Education, Registration and  
Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vighne, Juneau.  
CALIFORNIA: Los Angeles, Feb. 13-16. Sec., Dr. Charles B. Pinkham, 342 Flood Bldg., San Francisco.  
CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd. Dr. Robert L. Rowley, 79 Elm St., Hartford.  
CONNECTICUT: New Haven, March 14. Sec., Eelec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.  
KANSAS: Topeka, Feb. 14. Sec., Dr. Albert S. Ross, Sabetha.  
MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.  
MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.  
NATIONAL BOARD OF MEDICAL EXAMINERS. Written examination in Class A medical schools, Part I, Feb. 15-17; Part II, Feb. 20-21. Sec., Dr. John S. Rodman, 1310 Medical Arts Bldg., Philadelphia.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
VERMONT: Burlington, Feb. 14. Sec., Dr. W. Scott Nay, Underhill.  
WYOMING: Cheyenne, Feb. 13-15. Sec., Dr. J. D. Shingle, 206 Citizens Bank Bldg., Cheyenne.

BUFFALO'S HEALTH CENTER PLAN

The health center plan adopted by the Department of Hospitals and Dispensaries of Buffalo was organized for two objects: (1) one to provide medical advice, diagnosis and treatment for all people in Erie County who are unable to pay for such services, and (2) to furnish licensed medical practitioners with adequate hospital and laboratory facilities.

The department has maintained seven dispensaries located in different parts of Buffalo. Each dispensary has a full-time city physician in charge, with one part-time assistant and one full-time dentist working eight hours daily, and two clerks. Private hospitals are authorized to make emergency ambulance calls at public expense for admission of patients at any time.

In addition to these dispensaries there are, in various parts of the city, special clinics for tuberculosis, genito-urinary diseases, neuropsychiatry, drug addiction, well babies and sick babies, and prenatal and dental clinics.

In order to furnish licensed medical practitioners of Erie County with adequate hospital facilities, it has been arranged to have three hospitals available for all departments of medicine at modern prices. All licensed medical practitioners in the county are privileged to refer pay patients to, and care for pay patients entering, any of the hospitals conducted by the department, pay patients being admitted only on the recommendation of a licensed medical practitioner, the pay patients who apply for admission unrecommended by a physician being refused. The schedule of prices covering these pay cases are:

	Residents	Nonresidents
All patients .....	\$ 2.50	\$ 3.00
Boarders .....	1.25	1.50
Operating room—ether, chloroform or local anesthetic .....	5.00	5.00
Operating room—nitrous oxid anesthetic.....	10.00	10.00
Use of lying-in room.....	5.00	5.00
Commitment fee, psychopathic patients.....	5.00	5.00
Ambulance fee .....	3.50	5.00

Adequate diagnostic, laboratory and roentgen-ray services are provided in connection with the hospitals, dispensaries and special clinics conducted by the department. A complete report, including records of the laboratory work, is mailed to the physician with whom the patient originated. Fees for laboratory tests are very reasonable, generally running from \$1 to \$5 except some special tests which are higher. Roentgen-ray fees are \$6 and upward according to the number of plates required. Among the other services included in the plan are tonsillectomies, intubation, lunacy commitments, necropsies and cystoscopic examinations. The total number of consultations for the year 1921 was 189,832. The separate patients cared for numbered 35,790.

REPORT OF THE COMMITTEE OF MEDICAL  
EDUCATION OF THE PHILADELPHIA  
COUNTY MEDICAL SOCIETY

Your committee has had a number of meetings at which the problem of medical education was discussed. As the result of its deliberations, the committee would present the following report:

SCARCITY OF PHYSICIANS

It is generally admitted that there is a scarcity of doctors, especially in the rural districts and small towns of Pennsylvania, as well as elsewhere in the United States. Even in the cities there are not enough men to serve as interns, as physicians in outpatient departments, and in junior positions in hospitals. Authorities differ as to the proper ratio of physicians to population; some giving it at 1 to 500; some as 1 to 700; a fair average would probably be 1 to 600. There is at present in Philadelphia one physician to every 526 persons; in Pittsburgh one physician to every 447 persons; and throughout the state, including these two cities, one physician to every 768. When the population of Philadelphia and Pittsburgh is subtracted, then there is in the state only one physician to every 947 inhabitants, or practically one to 1,000. These figures, however, do not express the actual ratio of practicing or "callable" physicians in the state, since at the present time many though registered as physicians do not directly minister to the general needs of the community, such as full time teachers, laboratory men, some specialists, and men engaged in insurance work and in industrial medicine.

There are many reasons for the scarcity of physicians. Among them may be mentioned the following:

- A. The reduction in the number of medical schools throughout the country, which since it was accomplished by the elimination of the poorer schools is worthy of commendation.
- B. The war.
- C. Limitation in the number of students accepted by the best medical schools.
- D. The long time required to obtain a medical education and the license to practice.
- E. A special reason for the scarcity of doctors in rural communities, in addition to those given above, is that capable men are deterred from settling in country districts because of the lack of proper hospital facilities.

As a result of the foregoing causes and others not herein mentioned, the small cities and towns and villages are greatly in need of physicians.

It was reported at meetings of the committee that there is a town of 3,500 population in Pennsylvania with only one physician, and another of 2,500 with only one physician, and one of fair size in Maryland without any physician. The lack of trained medical men has led to the influx of quacks and irregular practitioners.

The committee feels that the Philadelphia County Medical Society should go on record on these matters, and to that end respectfully submits the following resolutions:

RESOLUTIONS SUBMITTED

1. It is desirable to increase the number of students admitted to medical schools.
2. Extra-urban practice should be made more valuable and more attractive by erecting modern hospitals throughout the state, placing them with due regard to the needs of the communities.
3. College, as well as primary and secondary education, should be speeded up so that men and women may be able to enter medical school at an earlier age.
4. The committee recommends that a survey be made of the physicians in Philadelphia to determine how many are actually engaged in family practice.

DAVID RIESMAN, Chairman, Prof. Clin. Med.,  
Univ. of Pa. School of Med.  
THOMAS McCRAE, Prof. Pract. Med., Jefferson Med. Coll.  
WILLIAM PEPPER, Dean, Univ. of Pa. School of Med.  
JOHN H. GIBBON, Prof. Surg., Jefferson Med. Coll.



## Minnesota October Examination

Dr. Thomas S. McDavitt, secretary, Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Oct. 4-6, 1921. The examination covered 15 subjects and included 80 questions. An average of 75 per cent. was required to pass. Twenty-five candidates were examined, all of whom passed. Forty-five candidates were licensed by reciprocity and 8 candidates were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bowdoin Medical School.....		(1920) 87.8,	88.3
Johns Hopkins University.....	(1917)	89.1,	88.3
University of Minnesota.....		(1921)*	85
Washington University.....		(1918)	89.8
Columbia University.....	(1918)	88,	(1920) 90.4
University of Pennsylvania.....		(1917) 88.2,	93.2,
	(1920)	88.5,	92.8
University of Tennessee.....		(1919)	87.4
Vanderbilt University.....		(1916)	91
University of Toronto.....	(1907)	88.9,	(1914) 87.1,
	(1915)	90.6,	(1920) 92.4
Western University.....	(1917)	91.3,	(1918) 93.2
McGill University.....	(1910)	89.1,	(1917) 93.3
University of Munich.....		(1912)	89.1
University of Edinburgh.....		(1918)	87.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama.....		(1918)	Alabama
George Washington University.....		(1920)	Dist. Colum.
American College of Medicine and Surgery.....		(1905)	Illinois
Hahnemann Medical College and Hosp. of Chicago.....		(1906)	Illinois
Northwestern University.....	(1917), (1920, 2), (1921, 2)		Illinois
Rush Medical College.....	(1916) Illinois, Ohio, South Dakota,		
	(1921, 2) Illinois		
University of Illinois.....		(1920)	Illinois
Indiana University School of Medicine.....		(1917)	Indiana
College of Physicians and Surgeons, Keokuk.....		(1878)	Iowa
State University of Iowa College of Medicine.....		(1917), (1918), (1919), (1920)	Iowa
Tulane University.....		(1909)	Louisiana
Johns Hopkins University.....	(1916) Maryland, (1917)		Michigan
	(1918), (1919), (1920) Maryland		
Boston University.....		(1918)	Maine
Univ. of Michigan Med. School.....	(1906), (1916), (1921)		Michigan
St. Louis University School of Medicine.....		(1920)	Missouri
Washington University.....		(1919)	Wisconsin
John A. Creighton Medical College.....		(1917)	Nebraska
University of Nebraska.....		(1919)	Nebraska
Ohio State University College of Medicine.....		(1920)	Ohio
Medico-Chirurgical College of Philadelphia.....		(1915)	Penna.
University of Pennsylvania.....	(1918), (1919)		Penna.
Vanderbilt University.....		(1917)	Missouri
University of Virginia.....	(1910) Alabama, (1919)		Virginia
Marquette University.....	(1911), (1920), (1921)		Wisconsin

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Rush Medical College.....	(1919), (1920)		N. B. M. Ex.
State University of Iowa College of Medicine.....	(1915)		N. B. M. Ex.
Harvard University.....	(1917)		N. B. M. Ex.
University of Pennsylvania.....	(1918, 3), (1919)		N. B. M. Ex.

\* This candidate has finished the medical course and received the M.B. degree and will obtain the M.D. degree after he has completed a year's internship in a hospital.

## Connecticut November Examination

Dr. Robert L. Rowley, secretary, Connecticut Medical Examining Board, reports the written examination held at Hartford, Nov. 8-9, 1921. The examination covered 7 subjects and included 70 questions. An average of 75 per cent. was required to pass. Of the 33 candidates examined, 25 passed and 8 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bowdoin Medical School.....		(1921)	79.9
Baltimore Medical College.....		(1898)	*
Johns Hopkins University.....		(1913)	*
University of Maryland.....		(1921)	75.5
Harvard University.....	(1904, 2),* (1913),*	(1921)	87.3
Tufts College Medical School.....		(1921) 75.7, 79.7,	83.4, 85.4
Columbia University.....	(1905),* (1913),*	(1921)	90.9
Fordham University.....		(1921)	80.2, 86.1
Medical Dept. of the Univ. of the City of New York.....		(1888)	*
University and Bellevue Hospital Medical College.....		(1921)	87.7
Jefferson Medical College.....		(1921)	85.4
Woman's Medical College of Pennsylvania.....		(1921)	87.7
University of Vermont.....	(1920)	75.8,	(1921) 78.3
McGill University.....		(1918)	78.7
Syrian Protestant College.....		(1918)†	76.4

College	FAILED	Year Grad.	Per Cent.
Baltimore Medical College.....		(1913)	66.8
College of Physicians and Surgeons, Baltimore.....		(1904)	68
Albany Medical College.....		(1900)	*
University and Bellevue Hospital Medical College.....		(1910)	73.1
Jefferson Medical College.....		(1912)	70.4
University of Vermont.....		(1899)	53.3
University of Budapest.....		(1919)†	51.3
University of Naples.....		(1913)†	58

\* No grade given.

† Graduation not verified.

## Social and Industrial Medicine

PRESENT CONDITION OF CHILD HEALTH  
IN CENTRAL EUROPE

A. C. BURNHAM, M.D.

Medical Director, American Red Cross in Europe

PARIS, FRANCE

Immediately after the armistice, America was literally flooded with reports of the starvation and disease among children in central Europe. As a result of these reports and the very evident need, relief to the amount of many millions of dollars was poured into the war stricken countries, chiefly for infants and children. While most of this money came from America through the American Relief Administration and the American Red Cross, a considerable amount was donated by England, France, Holland, Switzerland and other European countries. The relief effort was world wide, South America, Australia, New Zealand and many other far distant countries having a share in this humanitarian work. As an example of the widespread character of this postwar effort, it may be mentioned that at one time there were more than sixty foreign relief organizations operating in Vienna alone, many of them representing former enemy countries.

At the present time, three years after the armistice, it should be of interest and profit to make a study of the situation as a whole and to determine, so far as we are able, the present condition of child health and the indicated needs of the future.

At the outset it may be said that even today it is impossible to furnish much more than an expert opinion based on such facts as are available. The present economic conditions are such as to make any estimate of requirements based on import and export balances and larger trade movements practically valueless. Even mortality and morbidity reports are likely to lead to fallacious conclusions. In many cases the latest mortality reports available are for 1920, and a few cannot be obtained beyond 1919. What is of interest is the actual condition today, in December, 1921, three years and a month after the firing of the last gun.

For this purpose, such statistics as are available for the various countries of central Europe (always excluding Russia) have been collected from various sources. These have been studied together with the regular reports from more than 500 child health stations under the control of the American Red Cross in central Europe. In addition to these reports, which are largely statistical in character, I have collected a large amount of miscellaneous information through personal interviews with physicians and nurses who have worked under field conditions since the armistice. In order to secure evidence at first hand, visits have been made to Poland, Czechoslovakia, Hungary and Austria during the latter half of 1921. Facts and impressions determined in this manner form a fairly satisfactory basis in order to estimate with reasonable accuracy the present status of child health in central Europe as compared with conditions immediately after the cessation of hostilities.

## STARVATION

Are the children of Europe actually starving? While there are still many children in central Europe suffering from malnutrition and undernutrition at present, it may be said that there is now practically no mass starvation in the same sense as that which has been reported in Russia. Among groups of refugees that still exist in certain localities there are still a large number of children whose families have no means of support, and who are at present more or less wholly depen-



dent on charity. However, this group is, comparatively speaking, not large, and under normal conditions could be readily absorbed. Under conditions such as exist in Europe at present, refugees are not easily assimilated, and they will require foreign relief for some time to come. This group of refugees totals somewhere in the neighborhood of half a million persons in all of Europe. They are located chiefly in eastern Poland and in the neighborhood of Constantinople. These refugees have in most cases totally exhausted their resources.

Excluding this group of refugees (and again always excluding Russia), the general trend during the last three years has been one of steady and gradual improvement. The impressions of a trained health worker among the children of Austria or Poland, where original conditions were said to have been the worst, is that at present the children appear to compare fairly well with children in other countries. As a rule their color is good, they appear fairly well fed, and they laugh and play like normal children. The languor and apathy so apparent after the war has practically disappeared. When they are examined by physicians and graded according to physical development, it is found that from 50 to 75 per cent. are underdeveloped. These figures at first sight appear very high and are certainly not favorable to the future development of a nation; but it is not certain how much of this malnutrition is due to food shortage and how much to other causes. Similar figures have been obtained in certain American communities in which there has been no food shortage.

Such reports as we have been able to secure would indicate that central Europe as a whole is not yet self-supporting. Most of the budgets contain a large item for the purchase of food imports, and there is little or no food export from Europe at present. However, food supplies are gradually becoming more plentiful, reserve stocks being much larger than during the first two years after the armistice. Sugar, which often could not be obtained at all in certain countries during 1919 and 1920, is now fairly common, although the price is still very high. Butter and eggs can now be secured by the peasant and skilled workmen, and are even occasionally seen on the tables of the intelligentsia.

The chief difficulty today is an economic one. The price of certain articles of food has risen from 300 to 1,000 times; and while the wage earner's income has increased, it has not kept pace with the cost of living. In the case of persons living on small incomes derived either from savings or war pensions, the economic burden of inflation has been particularly heavy, and children in such families have been hard put to it to secure sufficient food. On the other hand, the speculator and the merchant, either rightly or wrongly called profiteers, have made enormous profits, and there is no limit to the quantity or quality of the food which they are able to secure. However, such inequalities are properly dealt with by measures which influence the internal economy of a country, and are not in general subjects for foreign relief. It is also clear that in certain isolated communities, especially in the mountainous sections of Austria, Galicia and Slovakia, life has been made almost impossible because of political changes which have almost totally deprived the inhabitants

of their accustomed income, and this has in turn led to impoverishment and want. But in spite of these facts it can be fairly said that, outside of Russia, there is no widespread starvation in Europe. The American Relief Administration has recognized this and greatly diminished its plans for child feeding during the coming winter.

RATIO OF BIRTHS TO DEATHS

During the war there was a rapid decrease in births, which reached its climax in most cities in 1918. At the same time there was an increase in the number of deaths, even when the military deaths were excluded from the calculations. This increase of deaths over births resulted in a steady decrease in population during the war period in virtually every city for which statistics are available. As a rule, this decrease was more marked in large cities than in small, and greater in small cities than in the rural districts. In 1919 and 1920 there was a general rapid decrease in the death rate, and at the same time a remarkable increase in births. In the country districts and smaller cities the annual decrease of population gave place to a natural increase, which approached the normal as early as 1919; but in the large cities the decrease still persisted, according to the latest figures available, those from 1920. The death rates for Vienna are given in the accompanying table.

It will be noted that the figures for births and deaths are gradually increasing, and it is to be expected that in 1921 the birth rate in Vienna, for the first time in seven years, will again show the so-called natural excess, just as occurred during 1920 in the smaller cities in the same territory. The increase of births is not limited to central Europe, but is

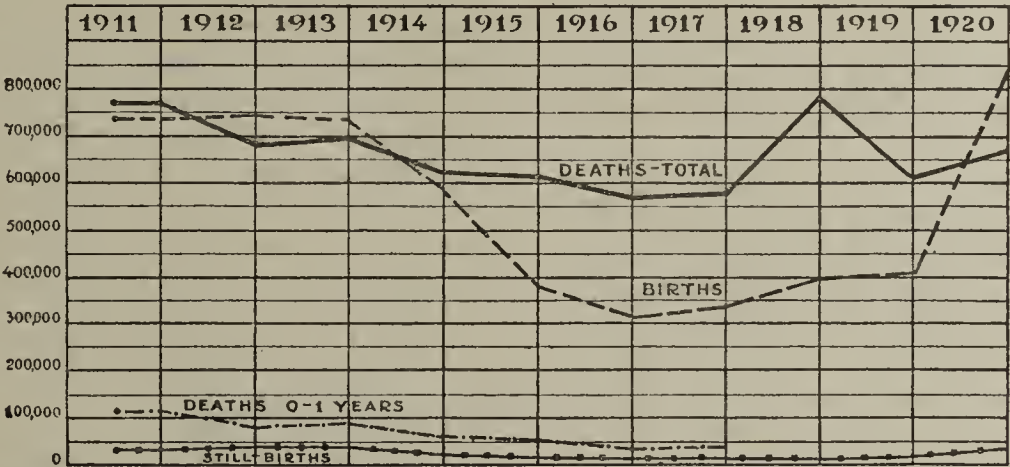
seen in western Europe as well. Thus, France since the armistice has shown a most remarkable increase in births, so that for the first time in many years there has been an appreciable annual increase of from 4 to 8 per thousand inhabitants in the French population, compared with a prewar increase of less than one.

LIVING BIRTHS AND CIVILIAN DEATHS IN VIENNA, 1914-1920

Year	Births	Infant Deaths	Total Civilian Deaths
1914.....	36,378	5,074	29,872
1915.....	29,257	4,459	31,479
1916.....	23,491	3,320	31,762
1917.....	20,688	3,161	38,345
1918.....	19,257	2,941	42,265
1919.....	24,128	3,626	37,945
1920.....	27,821	4,296	32,519

INFANT MORTALITY

Even before the war, the infant death rates during the first year of life were higher as a rule in central Europe than rates in England and the United States. In most of these countries there is a large percentage of illegitimate births, in which there is always a high mortality. Figures of from 120 to 150 deaths per thousand live births were not at all uncommon. With the war, the infant mortality rates increased moderately, but much less than might have been expected, owing in part to the comparatively greater decrease in illegitimate than in legitimate births, and in part to the



Births, stillbirths, deaths and infant deaths in France from 1911 to 1920, inclusive.



fact that, there being fewer children to care for, they received proportionally better care. There was a great shortage of milk, and for this reason many mothers nursed their infants rather than resort to the uncertainties of artificial feeding. As a matter of fact, this influence for good was so great that in some localities there was an actual decrease in infant mortality. With the rapid increase in the birth rate following the armistice, there was practically no improvement evident in infant mortality rates during either 1919 or 1920. In some places the rate increased slightly, probably as a result, in part, of the still further decrease in food supplies during 1919. Thus, in Vienna a rate of 155 in 1920, compared with a rate of 140 in 1919, shows an appreciable increase but less than might be expected. It should be noted that in cities showing a very rapid increase in birth rate, the infant mortality rate (deaths under 1 year per thousand births) as ordinarily calculated is much lower than the true infant mortality. The ordinary method of calculating infant mortality rates is accurate only when births and deaths are approximately the same over a series of years. Consequently, when a rapidly increasing birth rate is associated with a stationary or increasing infant mortality rate, it indicates a relatively greater increase in the infant death rates than the figures indicate. It is evident that, in most of the larger cities at least, the increase in the infant death rates during the post-war period has actually been greater than is shown by the mortality reports, and that in some cases the increase may reach as high as 20 per cent. During 1920 and 1921, the infant mortality has either remained nearly stationary or has tended to improve.

Among older children there appears to be a slight increase in the death rates, as compared with the prewar period; but, in the absence of definite figures showing the comparison of deaths to the total number of living children in certain age groups, it is most difficult to form any conclusions. It is quite evident that deaths among children up to 16 years of age have been less during 1920 than they were during 1917 and 1918; but whether they are less than during the prewar period is not so easily determined. It is certain that during the war there was a certain amount of natural selection, with the result that the children today represent the survival of the fittest; and for that reason under present conditions, which are approaching normal, there remains a group which is unusually sturdy and resistant to infection.

#### INFECTIOUS DISEASES

With the exception of the ordinary infectious diseases, such as scarlet fever and diphtheria, which are endemic throughout Europe, there can be said to be comparatively little infectious disease in central Europe at present. Cholera, which has assumed epidemic proportions in Russia, has apparently not extended beyond this country. Only a few isolated cases have been reported in Poland, generally being brought in by Russian refugees.

Typhus occurred widely in Poland and Slovakia during the winter of 1920-1921, and among the refugees in Montenegro and Serbia during the same period. It may be expected that this disease will be endemic in these countries for some years to come, but the evidence at hand shows that it is rapidly being brought under control.

Tuberculosis increased rapidly during the war period. In children it is seen chiefly in the form of bone and gland tuberculosis, which is apparently much more common in Europe than in America. During the war, the death rates for tuberculosis rose rapidly; but, since the armistice, there has been a gradual and steady fall, according to all reports available. It is estimated that there is in Europe a much larger than normal percentage of children suffering from some type of tuberculosis.

Smallpox, typhoid and recurrent fever are endemic in certain parts of Poland, Slovakia and Serbia, but there is no outstanding epidemic of these diseases. In Montenegro and Albania the reports received show a tremendous amount of malaria and the almost universal occurrence of intestinal parasites.

If any one disease may be said to be most widely prevalent, it is without doubt anemia, due to malnutrition. For example, during May and June, 1921, some of the reports from the Baltic states showed that more than 50 per cent. of the children examined suffered from severe anemia. According to all reports, the number of children suffering from severe grades of this complaint is rapidly decreasing. There are, of course, many evidences of rickets; but these occur mostly in older children as a result of deficient diet during infancy. Many of these children require the orthopedic treatment to correct deformities. Rickets in infants is still very common, but occurs less frequently than it did a year ago. During the month of October, the reports from sixty child health stations in Austria under the control of the American Red Cross showed a prevalence of rickets much less than during 1919, but still considerably above the prewar average.

#### THE OUTLOOK

In general, it may be said that central Europe is slowly but surely approaching normal, so far as child health is concerned. Mass starvation has disappeared, infant health has steadily improved, and older children appear healthier and better nourished than at the end of the war.

On the other hand, the economic conditions are less favorable. Hospitals, medical schools and dispensaries are having a difficult time to exist, largely because of the fact that the external and internal purchasing power of the monetary unit is steadily growing smaller. How much of this can be corrected by changes in internal administration and the cessation of the printing press, and how much must be helped by aid from without, is a financial and economic problem rather than one limited to relief.

The hospitals and other institutions for child health were aided during the war by large government grants. Since the armistice, these institutions have been existing largely on accumulated principal aided by hospital supplies received from foreign relief organizations. The hospital problem, not only in central Europe but in England and France as well, is at present a most serious one. It can be solved only when the internal finances of each country are on a reasonably sound basis and the purchasing power of the monetary unit has been restored to the prewar standard. In countries where this cannot be accomplished, hospitals, especially those supported by endowments, will require government or other aid for many years to come.

4, rue de Chevreuse, Paris (VI).

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**National Health Council Issues Revised Report on the Children's Bureau.**—The National Health Council has issued a report on the Children's Bureau of the U. S. Department of Labor, which outlines the legal authority, history and development of the bureau, its organization, current work, personnel, the federal Child Labor Law and the Act for the Promotion of the Welfare and Hygiene of Maternity and Infancy. The report on the Children's Bureau is one of five which have been prepared by the National Health Council. The others are on the Division of Vital Statistics of the U. S. Bureau of the Census, the Women's Bureau of the U. S. Department of Labor, the Division of School Hygiene of the U. S. Bureau of Education and a general report covering the health activities of the U. S. government. These pamphlets may be obtained without charge from the Washington office of the National Health Council, 411 Eighteenth Street, Washington, D. C.



## Book Notices

AN INTRODUCTION TO THE HISTORY OF MEDICINE. With Medical Chronology, Suggestions for Study and Bibliographic Data. By Fielding H. Garrison, A.B., M.D., Lieutenant-Colonel, Medical Corps; U. S. Army, Surgeon General's Office. Third edition. Cloth. Price, \$9 net. Pp. 942, with 257 illustrations. Philadelphia: W. B. Saunders Company, 1921.

With its first publication in 1913, Dr. Garrison's "History of Medicine" assumed a place as the best American history of medicine ever published. We are not wont to indulge in superlatives, but the word "best" is warranted here, if ever. Dr. Garrison has continued to improve his text by emendations and additions and by revision through a second and a third edition. Since the previous edition there has been a revival of interest in medical history, and numerous researches have been conducted for the study of medical history throughout the world. Dr. Garrison has been in touch with this work. The order followed is chronological, ranging from the "identity of all forms of ancient and primitive medicine" to the "beginnings of organized preventive medicine in the twentieth century." In earlier editions this last section was perhaps least satisfactory. Every one realizes the difficulty of estimating the importance of contemporary work, since time alone in medicine fixes the value of original research. The book is completed by a number of valuable appendixes. A chronological table fixes important dates in the advance of medical science; a section entitled "Hints on the Study of Medical History" is valuable to those institutions which are endeavoring to give their students more background for their current studies; the bibliographic notes are complete and accurate. The book is concluded with two excellent indexes, that on personal names including thousands of references to the makers of medicine. Altogether, this book represents a distinct achievement in American medical literature.

SÍNTESIS DE MEDICAMENTOS ORGÁNICOS. Por E. Fourneau, Director del Laboratorio de Química Terapéutica del Instituto Pasteur, de la Academia de Medicina de París, y A. Madinaveitia, Profesor de Química Orgánica y Biológica en la Junta Para Ampliación de Estudios. Paper. Price, 20 pesetas. Pp. 448. Madrid: Calpe, 1921.

This book is by the director of the laboratory of therapeutic chemistry of the Pasteur Institute, noted for his discovery of stovain, in collaboration with the professor of organic and biologic chemistry in the Spanish Postgraduate School (Junta para Ampliación de Estudios). The preface is by Professor Carracido, the best known Spanish chemist. The text embodies, almost literally, the lectures on synthetic drugs delivered by Fourneau recently at Madrid, upholding his theory that the medical properties of compound drugs may be deducted from their molecular structure. A sketch is presented of the history, properties, field of application, composition and reactions necessary to synthesize antipyretics, anesthetics, hypnotics, antiseptics, arsenicals, mercurials, epinephrin group, phosphatids, nucleic acids and alkaloids.

Following is much practical laboratory information in regard to the actual manufacture of synthetic drugs. While the book is a mine of valuable data, its value for the general practitioner is rather slight because of its technical character.

EPHRAIM McDOWELL, "FATHER OF OVARIOTOMY" AND FOUNDER OF ABDOMINAL SURGERY. With an Appendix on Jane Todd Crawford. By August Schachner, M.D., F.A.C.S. Cloth. Price, \$5. Pp. 331, with illustrations. Philadelphia: J. B. Lippincott Company, 1921.

It is generally conceded that Ephraim McDowell was the first to perform ovariectomy, and that the operation was done on a Mrs. Crawford; yet the whole incident is surrounded with so much legend and conflicting data that Dr. Schachner's presentation of the clearly ascertainable facts is well worth while. He has given background to the life of McDowell by including notes on the history and development of Kentucky, on Dr. McDowell's education abroad, on the influence of John Bell, on the notable contemporaries of McDowell, and on characteristics of country practice of McDowell's period. It appears that claims were made by English gynecologists that similar operations had been performed in England previous to the first operation performed by Dr. McDowell in Kentucky. Dr. Schachner analyzes these claims and shows by numerous citations from the literature, as well as by

personal correspondence, that McDowell's claim is incontrovertible. A special chapter is devoted to the acceptance of the operation in France; then comes a study of the personal side of Dr. McDowell, a review of various celebrations, honors awarded him during life, and memorials in his honor after death. A final chapter deals with the available information relative to Mrs. Crawford. As a statement of the facts, and as a contribution to medical history, Dr. Schachner's book deserves great credit and commendation. The book is not, however, of such literary style as to be particularly attractive to the casual reader, and experience shows that medical men are little inclined to read medical history unless it is served to them with sufficient literary embellishment to make it a matter of pleasure as well as of profit.

PRINCIPLES OF MEDICAL TREATMENT. By George Cheever Shattuck, M.D., A.M., Assistant Professor of Tropical Medicine, Harvard Medical School. Contributions by the Following Authors: Tuberculosis, by John B. Hawes, 2d, M.D.; Acute Infectious Diseases Most Common in Childhood, by Edwin H. Place, M.D.; Influenza, by Gerald Blake, M.D.; Diabetes Mellitus, by Benjamin H. Ragle, M.D.; Serum Treatment of Pneumonia, by Henry M. Thomas, Jr., M.D. Fifth edition. Cloth. Price, \$3.50. Pp. 309. Boston: W. M. Leonard, Inc., 1921.

This little book, the author states, "represents an attempt to offer clearly and concisely sound principles of treatment based on known pathology." The systematic arrangement of the text, its brevity and at the same time completeness are witness to his success. In most cases no attempt is made to enter into a detailed description of the methods of treatment. The statement of the indications and principles make up for the deficiency. The consideration of the subject of cardiovascular and renal diseases by Dr. Shattuck, that of diabetes by Dr. Ragle, and that of infectious diseases by Dr. Place are excellent. The presentation of the subject of tuberculosis by Dr. Hawes leaves little more to be desired. The last section of the book deals with the use of drugs, their preparations, doses, indications and contraindications. One can hardly agree that it is advisable to wait for the mixing of the drugs until everything is prepared and the needle inserted into the vein when arsphenamin is to be administered. The statement that leaching will reduce the size of the liver in cases of engorgement might also be challenged. All in all, however, the book is a commendable one and is of value, not only to the student, but also to the practitioner.

LA PSIQUIATRÍA DEL MÉDICO PRÁCTICO. Por el Dr. Antonio Fernández-Victorio y Cociña, Director del Manicomio de Ciempozuelos. Second edition. Paper. Pp. 407. Barcelona: Manuel Marin, 1922.

This book, by the director of the insane asylum of Ciempozuelos, Spain, is a summary of lectures delivered while he was professor of psychiatry in the Army Medical School. It is divided into three parts, devoted, respectively, to psychic functions, psychic symptoms and mental diseases or psychopathies. These are grouped into psychoneuroses, psychodysgenesias or pschyasthenias, manias, paranoias, toxicopathies and insanity in its diverse forms. In the first chapter, taking Richet's work as a guide, he tries to define mental activities, and especially consciousness and its mechanism. As it was to be expected in a book primarily intended for army medical officers, the author has taken great pains with the part dealing with physical and mental examinations of supposed insane patients. The last chapter of the book contains a brief review of present therapeutics. A remarkable omission is the lack of reference to shell shock.

PREVENTIVE MEDICINE AND HYGIENE. By Milton J. Rosenau, Professor of Preventive Medicine and Hygiene, Harvard. With chapters upon Sewage and Garbage, by George C. Whipple, Professor of Sanitary Engineering, Harvard; Vital Statistics, by John W. Trask, Assistant Surgeon-General, U. S. Public Health Service; Mental Hygiene, by Thomas W. Salmon, Medical Director, National Committee for Mental Hygiene, etc. Fourth edition. Cloth. Price, \$10. Pp. 1567, with 194 illustrations. New York: D. Appleton & Company, 1921.

In the preparation of this edition, the entire text has been reset and several new subjects have been added. Among them are housing, rural sanitation, public health nursing, drug addiction, alcoholism, oral, ocular and personal hygiene, and a laboratory course in preventive medicine and hygiene. New articles are also included on Vincent's angina, deer-fly fever, leishmaniasis, encephalitis, yaws, psychoneuroses and war edema. The book is one of the most complete and authoritative textbooks available on this subject.



## Medicolegal

### Death Certificates and Privileged Communications

(*Bozicevich v. Kenilworth Mercantile Co. (Utah)*, 199 Pac. R. 406)

The Supreme Court of Utah, in affirming a judgment for the defendant in this action brought to recover damages for the death of a boy, alleged to have been caused by his eating unwholesome ice cream sold by the defendant, holds that no error was committed in admitting the death certificate in evidence. The court says that a statute of the state provides that a death certificate shall be made and signed by the attending physician, and that he shall "state the cause of death so as to show the course of the disease or the sequence of causes resulting in death, giving the primary and immediate causes, and also the contributory causes, if any, and the duration of each." The matter of requiring death certificates comes directly within the police power of the state. To require a full statement of all the causes and complications, if any, conforms to a sound rule of evidence, in that it presents the whole case and not merely a fragmentary part. When the statements fully comply with the statute and are admitted in evidence, they may afford a protection to the attending physician as well as to those who may be interested in the cause of death. The statutory requirements tend to protect rights rather than otherwise. If, therefore, the legislature can make the statement of the immediate cause of death *prima facie* evidence, it can also make the primary and contributing causes *prima facie* evidence.

Nor does the admission as *prima facie* evidence of the facts stated in such a certificate contravene the statutory provision that "a physician or surgeon cannot, without the consent of his patient, be examined in a civil action, as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." As the court views the matter, there is no irreconcilable conflict between these two statutory provisions, and both may stand and be enforced, though if there were an irreconcilable repugnance or conflict between the act creating the privilege and the provision of the act making a certified copy of the physician's certificate *prima facie* evidence of the facts therein stated, the latter, being the later enactment, must prevail. Be that as it may, there can be no doubt that the patient may still insist on his privilege; and the physician may not, without the patient's consent, testify to information that may have been imparted to him by the patient, or to such information as the physician may have received in attending the patient, if such information was necessary to enable the physician to prescribe or act for the patient. When death has overtaken the patient, however, and it becomes necessary for the public good that the cause of his death be made known, and that a public record be made thereof, then the privilege, to that extent, if it ever existed as against such a certificate, must yield to the public good.

### Confusion About Waiver of Privilege

(*Hethier v. Johns (N. Y.)*, 189 N. Y. Supp. 605)

The Appellate Division of the Supreme Court of New York, Fourth Department, says that a great deal of confusion has arisen in the minds of members of the bar about the question as to whether or not a plaintiff in a personal injury case, by bringing his action and testifying as to his injuries and treatment, and by calling for the testimony of one of several physicians who attended him, waives as to the others the privilege conferred by Section 834 of the New York Code of Civil Procedure, there being a conflict in, and uncertainty regarding, the decisions on the subject. This court holds that, in such a case, when the physician called by the plaintiff as a witness was not present at the time when a physician offered by the defendant as a witness made his examination of the plaintiff, there was no waiver as to the latter physician. It does not seem to this court that the calling of one attending physician constitutes a waiver as to another physician who attended the party at a different time. It is not

unreasonable to suppose that cases might arise in which a party would be willing to have one attending physician disclose all he knew about the patient's condition, when at the same time the party would be willing to forfeit all of the benefits which he might derive from his cause of action rather than have another attending physician disclose information which he had obtained in treating the party for the same injury.

### Evidence Required for Suspension of License

(*State ex rel. Johnson v. Clark et al. (Mo.)*, 232 S. W. R. 1031)

The Supreme Court of Missouri says that the relator, a physician, was charged with being guilty of unprofessional and dishonorable conduct in having unlawfully produced a criminal abortion on a certain woman, and that the state board of health, after a hearing pursuant to notice, found him guilty as charged and ordered that his license to practice medicine and surgery in the state of Missouri be suspended for a period of five years. But that action of the respondents, who constituted said board, is quashed, and a judgment of the circuit court upholding such action is reversed, by the supreme court.

One contention of the relator was that there was a defect in that at no place in the record did it appear what members of the board, if any, were present at the meeting when the order suspending his license was made; nor was it shown that a majority of the members were present at such meeting, in compliance with the statutory requirements. However, the record of the proceedings had at the hearing on the charges showed that five out of the seven members of the board were present, and that the relator appeared at the hearing in person and by attorney. With regard to the meeting at which the license of the relator was ordered suspended, in the absence of evidence to the contrary, it was to be presumed that the members of the board, being public officers, discharged their duty regularly and properly, in accordance with the law, so that the presumption followed that, when the board acted, a majority of the members were present. But the supreme court does not agree with the contention of the respondents that the board, being merely an administrative or ministerial body, could consider evidence, make a finding, and render judgment thereon, when such evidence would admittedly have been inadmissible in a court of law. Such is not the supreme court's conception of what is consonant with the policy of the law. The statute under which the respondents acted has been held to be highly penal in its nature. Such being the case, it was to be construed strictly against the respondents and liberally in favor of the relator. Moreover, the respondents could not act arbitrarily, nor against the rules of evidence.

It was error to admit the testimony of another physician relative to a statement made by the woman as to the relator's having performed an abortion on her, the declaration not having been made under an impression of impending and immediate death. Under the rules of evidence, the statement would have been inadmissible in a criminal proceeding before a court; and this court sees no just reason (and finds no precedent to the contrary in Missouri) why a similar rule should not prevail in a hearing before the state board of health, when a valuable privilege, if not a property right, depends on the outcome of the hearing. To let down the bars and admit uncorroborated, hearsay testimony, which the record here disclosed constituted the only possible positive evidence on which the order of the board could be predicated, was not consistent with the practice which should be followed in inquiries of even a quasi-judicial nature. The entire record being before the supreme court for review, and a careful scrutiny thereof having revealed no evidence corroborative of the declaration of the woman, the court holds that the admission and the consideration of the testimony complained of were incompetent and prejudicial to the rights of the relator. The court also holds that error was committed in admitting the testimony of a physician that "there was a great deal of belief that this man [referring to the relator] did cause abortions"; and the testimony of still another physician that from conversations had by him with his



patients, he was positive that the relator had been producing abortions. While this court is in thorough sympathy with the laudable aim and purpose of the board of health to rid the medical profession of practitioners guilty of dishonorable conduct, the court must nevertheless accord to the accused every right given him by the law. To render a conviction bottomed on the veracity and competency of persons other than witnesses testifying under oath would be contrary to the established principles of all law.

## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### Annals of Surgery, Philadelphia

January, 1922, 75, No. 1

- New Mechanical Problems in Bronchoscopic Extraction of Foreign Bodies from Lungs and Esophagus. C. Jackson, Philadelphia.—p. 1.
- \*Surgical Treatment of Pernicious Anemia. J. M. Hitzrot, New York.—p. 31.
- Wound Excision and Early Reconstruction in Treatment of Compound Fractures. M. B. Tinker, Ithaca, N. Y.—p. 38.
- Special Points in Technic of Operations on Thyroid. G. W. Crile and W. E. Lower, Cleveland.—p. 47.
- \*Surgery of Mediastinum. A. Schwyzer, St. Paul, Minn.—p. 53.
- \*Life Expectancy Following Radical Amputation for Carcinoma of Breast. W. E. Sistrunk and W. C. MacCarty, Rochester, Minn.—p. 61.
- Transverse Abdominal Incision. W. J. Moore, Glasgow, Scotland.—p. 70.
- \*Acute Intestinal Obstruction. J. O'Connor, Buenos Aires.—p. 81.
- \*Rectal and Vesical Incontinence Relieved by Operation. J. G. Sheldon and E. P. Heller, Kansas City, Mo.—p. 89.
- Secondary Foci of Tuberculosis in Spine in Pott's Disease. C. W. Peabody, Boston.—p. 95.
- \*Posture and Cervical Rib Syndrome. T. W. Todd, Cleveland.—p. 105.
- \*Intra-abdominal Operation for Femoral Hernia. G. P. LaRoque, Richmond, Va.—p. 110.

**Splenectomy for Pernicious Anemia.**—Hitzrot's experience covers seven cases of splenectomy done for pernicious anemia, with three improved for periods of from one to four years, three cases in which death resulted within a year following the operation, and one case too recent to state the final outcome. Hitzrot pleads for early operation, if operation is considered at all, as the early cases do much better than those in which splenectomy is done as a last resort.

**Infection of Anterior Mediastinum.**—Purulent infections of the anterior mediastinum apart from direct trauma Schwyzer states are mostly due to a breaking down of lymph glands or to the advance of an abscess which started in the neighborhood. Of each of these two conditions he has seen one example. One was an abscess along the pericardium on the right side. It originated from a tuberculous condritis of the fourth, fifth and sixth ribs. The second case was a lymph gland abscess, taking its origin from what seemed to be one of the right peritracheobronchial glands.

**Life Expectancy Following Radical Operation for Breast Cancer.**—By studying the results obtained in 218 cases Sistrunk and MacCarty found that 51.8 per cent. of the patients operated on, one of each two patients, were living three years after operation. Seventy-five and six-tenths per cent. of the patients without glandular involvement, three of each four patients, were living at the end of three years, and 36.6 per cent. of the patients with glandular involvement, about one of each three patients, were alive at the end of three years. Thirty-nine per cent. of the patients, about two of each five patients, were alive at the end of five years. Sixty-five and one-tenth per cent. of the patients without glandular involvement, about six of each ten patients, were alive at the end of five years, and 21.9 per cent. of the patients with glandular involvement, about one of each five patients, were alive at the end of five years. Thirty-six and seven-tenths per cent. of the patients, about one of each three patients, 63.9 per cent. of the patients without glandular involvement, about six of each ten patients, and 18.9 per cent. of the patients with glandular involvement, about one of each five patients, were living from five to eight years after operation. After eight

years the disease rarely recurs. Carcinomas which developed during pregnancy and during the lactating period invariably proved fatal within five years after operation. Diffuse carcinomas which involved practically the entire breast caused death in every instance within five years. When the axillary glands were involved, carcinomas around the nipple proved fatal in seventeen of eighteen patients (94.5 per cent.) within five years. Seventeen of twenty patients with ulcerating carcinomas (85 per cent.) were dead at the end of seven years; fourteen died within five years after operation. Age seems to have a definite bearing on the results to be expected following operation. Forty-one and seven-tenths per cent. of the patients over 50 are alive from five to eight years after operation, while only 31.8 per cent. of those under 50 have lived a corresponding time. The prognosis has not been affected by the complete removal of small growths for microscopic diagnosis before the radical operation is performed. When local recurrences were found following operation, metastasis was demonstrated in other regions in 60.9 per cent. of the cases, or in six of each ten patients. Nearly all patients who had recurrences following operation died from the disease.

**Acute Intestinal Obstruction.**—O'Connor discusses enterectomy, partial excision, inclusion, postappendical incidence and treatment of stumps.

**Operation for Rectal and Vesical Incontinence.**—In this case Sheldon and Heller provided a rectal sphincter from flaps of the glutei maximi and relieved the incontinence by restoring the bladder which was held in high position by a patent urachus to its normal position in the pelvis.

**Posture and Cervical Rib Syndrome.**—Todd asserts that it is possible to produce the cervical rib syndrome experimentally by posture alone. Since this is the case it may be the explanation of some instances at least of the disease occurring in the absence of anomalies at the cervicothoracic junction.

**Intra-Abdominal Operation for Femoral Hernia.**—This operation was described in THE JOURNAL, Dec. 6, 1919, p. 1802. LaRoque discusses it further.

#### Archives of Internal Medicine, Chicago

January, 1922, 29, No. 1

- \*Motor Phenomena Occurring in Normal Stomachs, in Presence of Peptic Ulcer and Its Pain, as Observed Fluoroscopically. L. Reynolds and C. W. McClure, Boston.—p. 1.
- \*Clinical Observations on Capillary Circulation. S. O. Freedlander and C. H. Lenhart, Cleveland.—p. 12.
- \*Protein Requirement in Tuberculosis. W. S. McCann, New York.—p. 33.
- \*Use of Quinidin in Auricular Fibrillation. J. A. E. Eyster and G. E. Fahr, Madison, Wis.—p. 59.
- \*Tuberculosis of Heart. E. Weiss, Philadelphia.—p. 64.
- \*Observations Following Intravenous Injections of Hypertonic Salt Solutions in Cases of Neurosyphilis. J. Wynn, Boston.—p. 72.
- Metabolic Study of Progressive Pseudohypertrophic Muscular Dystrophy and Other Muscular Atrophies. R. B. Gibson, F. T. Martin and M. V. R. Buell, Iowa City.—p. 82.
- Nitrogen Requirement for Maintenance in Diabetes Mellitus. P. L. Marsh, L. H. Newburgh and L. E. Holly, Ann Arbor, Mich.—p. 97.
- \*Mycotic Embolic Aneurysms of Peripheral Arteries. de W. G. Richey and W. W. G. MacLachlan, Pittsburgh.—p. 131.

**Motor Phenomena of Stomach.**—From the clinical standpoint the most important feature of the work presented by Reynolds and McClure is considered to be the fact that the usual disappearance of abnormal motor phenomena occurring simultaneously with the cessation of pain gives an objective means of judging the effects of therapeutic measures.

**Circulation in Capillaries.**—Observations on the capillary circulation in many clinical conditions were made by Freedlander and Lenhart by Lombard's method. The effect of reflex vasomotor stimuli on the capillary circulation were observed, corroborating the blood flow experiments of Stewart. In three cases of primary traumatic shock and one case of surgical shock, stasis was observed in the skin capillaries. Capillary stasis was observed in several cases of septicemia in which there was a sudden collapse. Capillary stasis also occurs in cardiac decompensation and may be of some value in differentiating the preponderant factor in cardiorenal diseases. In some cases of hypertension, there was a granular, intermittent capillary flow.



**Protein Requirement in Tuberculosis.**—In nine of the ten tuberculous patients studied by McCann the minimal urinary nitrogen excretion observed was between 2.5 and 4.5 gm. per diem, and between 0.041 and 0.093 gm. per kilogram per diem. In one case the lowest excretion of urinary nitrogen was 9.4 gm. per diem, or 0.267 gm. per kilogram. In the nine cases with a minimal nitrogen excretion the diet given had an energy value from 1.1 to 2.4 times the basal energy requirements of the subjects, and furnished 39 to 70 per cent. of the calories in the form of carbohydrate. McCann found that in some cases it is possible to maintain nitrogen balance, and even to retain nitrogen, when from 37 to 44 gm. protein are ingested, of which about one half is from animal sources. The attainment of nitrogen equilibrium with such a small amount of protein is dependent on the ingestion of large amounts of carbohydrate and fat, sufficient to make the total caloric value of the diet from 1.7 to 2.4 times the basal energy requirement. It is probable that the failure to establish nitrogen balance on such protein diets is due to failure or inability of the subject to ingest sufficiently large quantities of carbohydrate and fat, rather than that it is due to an inherently large wear and tear quota in tuberculosis. Positive nitrogen balance in bed patients may be attained by the ingestion of from 60 to 90 gm. protein when the diet contains carbohydrate and fat, with a total caloric value of less than 1.7 times the basal requirement. The evidence indicates that the optimal quantity of protein for patients who are confined to bed with pulmonary tuberculosis, lies between the limits of 60 to 90 gm. per diem, when the caloric value of the diet is about 2,500 calories. Additional carbohydrate and fat calories must be furnished when patients are allowed to exercise.

**Quinidin in Auricular Fibrillation.**—Eyster and Fahr record their experience in the use of quinidin in two cases of auricular fibrillation. One case brings out a point which has not been emphasized sufficiently, namely, the danger in the use of this drug in certain cases. The other case illustrates the strikingly favorable action of quinidin in the rather rare condition in which auricular fibrillation is uncomplicated by advanced valvular or myocardial damage and in which no serious break in compensation has occurred.

**Tuberculosis of Heart.**—The clinical and necropsy findings of two men who had heart tuberculosis are recorded by Weiss. Symptoms and physical signs were vague; necropsy demonstrated an immense, fibrocaceous tuberculous involvement of the lymph nodes of the thorax, with extension to the pericardium and in the one case to the heart muscle, causing tremendous enlargement of the organ. Reference to the literature indicates that the heart involvement is almost always secondary to the disease of the mediastinal lymph nodes.

**Intravenous Injections of Salt Solution in Neurosyphilis.**—Intravenous injections of 200 c.c. of 15 per cent. salt solution were given by Wynn to six patients with neurosyphilis, with resulting disagreeable but not alarming symptoms. In these cases the cerebrospinal fluid pressure was found to rise sharply and then to fall, reaching a point about 100 mm. below the original level by thirty minutes after the end of the salt injection. Such injections did not have any therapeutic value.

**Embolic Aneurysms of Peripheral Arteries.**—A comparison of the salient features of the two cases reported by Richey and MacLachlan shows that in both an aneurysm of a peripheral artery occurred, one in the superior mesenteric and the other in the posterior tibial artery. Both were associated with a definite acute and subacute vegetative endocarditis of the mitral or aortic valves. In one case infarcts were found in the spleen and kidneys. Streptococcus salivarius was isolated from the blood stream of one case during life. Unfortunately, the sudden death of the other case prohibited antemortem cultures, while the necropsy cultures, taken twenty-four hours after death, showed only secondary invaders. No suggestion of syphilis was found in either case at necropsy. Both aneurysms had ruptured, at first slowly, with the formation of a false aneurysm. Clinically the rupture of the aneurysms was characterized by severe, sudden, lancinating pain, which

persisted. From the evidence at hand, it seems clear that both aneurysms had their beginning in the bacteria-laden embolus which was swept off the affected heart valve, lodging at the bifurcation of the artery involved.

### Arkansas Medical Society Journal, Little Rock

January, 1922, 18, No. 8

- Difficulties and Superstitions Encountered in Practice Among Negroes. S. W. Douglas, Eudora.—p. 155.  
Management of Chronic Nephritis—Report of Cases. G. E. Tarkington, Hot Springs.—p. 158.

### Canadian Medical Association Journal, Toronto

January, 1922, 12, No. 1

- Pregnancy and Tuberculosis. D. A. Stewart, Winnipeg.—p. 1.  
Methods of Study of Early Diabetes. J. J. R. Macleod, Toronto.—p. 4.  
Comparative Study of Measles and German Measles. D. G. Campbell and E. V. Murphy, Montreal.—p. 7.  
Technic of Cataract Operations. C. Campbell, Toronto.—p. 10.  
Etiology of Infantile Eczema. H. P. Wright, Montreal.—p. 12.  
Some New Anesthetic Ethers (Cotton Process Ether; Ethanesal). W. Webster, Winnipeg.—p. 15.  
Sodium Citrate Technic for Blood Transfusion. C. K. P. Henry, Montreal.—p. 17.  
Hour-Glass Stomach. A. Moir, Peterborough.—p. 20.  
Two Cases of Supernumerary Ureters Opening Intravesically. H. I. Palmer, Toronto.—p. 25.  
\*Psychosis of Hysterical Type. C. A. Baragar, Winnipeg, Man.—p. 30.  
Treatment of Chronic Nephritis. A. H. Gordon, Montreal.—p. 32.  
Acute Poliomyelitis. F. H. Mackay, Montreal.—p. 34.

**Psychosis of Hysterical Type.**—Baragar cites the case of a girl, aged 17, who exhibited hysterical phenomena in the physical field, the most interesting of which was a complete functional blindness, and in the mental field a psychosis characterized by delusions and simple visual hallucinations at first, but later by an apparent dementia with inaccessibility, defective contact with environment, undue suggestibility, somewhat similar to catatonia, but differentiated by a peculiar variability of depth—a psychosis of hysterical type.

### Colorado Medicine, Denver

January, 1922, 19, No. 1

- Addison's Disease. L. W. Bortree, Colorado Springs.—p. 2.  
Diagnosis and Treatment of Gallbladder Disease. J. R. Espey, Trinidad.—p. 5.  
Extra-Uterine Gestation. H. R. Bull, Grand Junction.—p. 9.  
Postgraduate Study Conditions Abroad. C. T. Burnett, Denver.—p. 12.  
Subcutaneous Method of Vaccination Against Smallpox. F. S. Spearman, Rifle.—p. 13.

### Iowa State Medical Society Journal, Des Moines

January, 1922, 12, No. 1

- Passing of Medical Practitioner. C. P. Howard, Iowa City.—p. 1.  
Focal Infections of Nose and Throat. L. W. Dean, Iowa City.—p. 6.  
Focal Infection of Mouth, Teeth and Maxillary Bones in Relation to Systemic Disease. C. W. Harned, Des Moines.—p. 10.  
Gastro-Intestinal Infections. M. B. Galloway, Webster City.—p. 13.  
Focal Infection in Genito-Urinary Tract. J. S. McAtee, Council Bluffs.—p. 15.

### Journal of General Physiology, Baltimore

January, 1922, 4, No. 3

- Inactivation of Trypsin. I. J. H. Northrop, New York.—p. 227.  
Id. II. Equilibrium Between Trypsin and Inhibiting Substance Formed By Its Action on Proteins. J. H. Northrop, New York.—p. 245.  
Id. III. Spontaneous Inactivation of Trypsin. J. H. Northrop, New York.—p. 261.  
Direct and Indirect Determinations of Permeability. W. J. V. Osterhout, Cambridge, Mass.—p. 275.  
Studies on Bioluminescence. XIV. Specificity of Luciferin and Luciferase. E. N. Harvey, Washington, D. C.—p. 285.  
Effects of Radium Rays on Metabolism and Growth in Seeds. A. C. Redfield and E. M. Bright, Boston.—p. 297.  
Correspondence of Skin Pigments in Related Species of Nudibranchs. W. J. Crozier, New Brunswick, N. J.—p. 303.  
Physiology of Respiration of Fishes in Relation to Hydrogen Ion Concentration of Medium. E. B. Powers, Lincoln, Neb.—p. 305.  
\*Effect of Iodin and Iodothyron on Larvae of Salamanders. IV. Role of Iodin in Inhibition of Metamorphosis of Thymus-Fed Salamanders. E. Uhlenhuth, New York.—p. 319.  
\*Influence of Feeding Anterior Lobe of Hypophysis on Size of Ambystoma Tigrinum. E. Uhlenhuth, New York.—p. 321.  
Temperature Coefficient of Phagocytosis. W. O. Fenn, Boston.—p. 331.  
Penetration of Cations into Living Cells. M. M. Brooks, Washington, D. C.—p. 347.  
Origin of Electrical Charges of Colloidal Particles and of Living Tissues. J. Loeb, New York.—p. 351.



**Growth Inhibition Not Caused by Iodin Deficiency.**—The experiments made by Uhlenhuth show that the substances which are deficient in the food of thymus-fed salamander larvae are not identical with iodine. Feeding iodine to these animals did not stimulate growth. The fault evidently is not a deficiency of the thymus in iodine, but a deficiency in certain substances, as yet unknown.

**Influence of Anterior Lobe of Pituitary on Growth.**—It is apparent from Uhlenhuth's experiments that animals of the species *Ambystoma tigrinum* when fed pituitary anterior lobe can reach a size far in excess of that of animals fed earthworms and presumably also of that of liver fed animals. Liver produces a rate of growth as high as that resulting from anterior lobe feeding, but maintains growth only, until the animals reach a definite size far below that of anterior lobe fed animals.

## Journal of Infectious Diseases, Chicago

January, 1922, 30, No. 1

- Study of Colony Formation in Deep Agar: Studies on Pathogenic Anaerobes. VI. H. H. Heller, San Francisco.—p. 1.  
Genus *Nicolaierillus* (B. Tetani): Studies on Pathogenic Anaerobes. VII. H. H. Heller, San Francisco.—p. 18.  
Mutations in Genus *Nicolaierillus* (B. Tetani): Studies on Pathogenic Anaerobes. VIII. H. H. Heller, San Francisco.—p. 33.  
\*Effect of Roentgen Ray and Mustard Gas (Dichlorethylsulphid) on Active Anaphylaxis in Guinea-Pig. H. J. Corper; L. T. Black and M. Moore, Denver.—p. 50.  
Cultivation of Tubercle Bacilli. E. L. Goodman and M. Moore, Denver.—p. 58.  
\*Spirochetal Organisms in Tissues in Acute Yellow Atrophy of Liver. N. Hayashi and T. Kibata, New York.—p. 64.  
John's Disease (Chronic Dysentery in Animals, Paratuberculosis) and Its Detection. B. A. Beach and E. G. Hastings, Madison, Wis.—p. 68.  
Study of Streptococci from Post-Gonorrheal Prostatitis by a Quantitative Method of Agglutination and Absorption. R. D. Herrold, Chicago.—p. 80.  
\*Susceptibility of Rabbits to Virus of Measles. Inoculations with Nasopharyngeal Material. M. Grund, New York.—p. 86.  
Spontaneous Chronic Meningo-Encephalitis of Rabbits. J. Oliver, San Francisco.—p. 91.  
Buffered Physiologic Solution of Sodium Chlorid. A. C. Evans, Washington, D. C.—p. 95.  
\*Infection of Meninges and Lungs by Species of Actinomyces. H. H. Bell, St. Louis.—p. 99.  
\*Anaphylatoxin and Anaphylaxis. XII. Studies on Chemistry of Blood. W. M. German, Ann Arbor, Mich.—p. 107.  
\*Pathogenicity of *Bacillus Botulinus*. P. F. Orr, Boston.—p. 118.  
Classification of Streptococci. E. Fisk and E. L. Burky, Philadelphia.—p. 128.

**Effect of Roentgen Ray and Mustard Gas on Anaphylaxis.**—Corper and his associates found that in guinea-pigs a maximum nonlethal dose of roentgen ray given seven days before or coincident with the sensitizing injection of egg white or normal horse serum, or seven days before or with the second injection, causes no appreciable ameliorating influence on the reaction resulting from the second injection of these proteins. Likewise, repeated moderate roentgen-ray treatments, sufficient to maintain a low level of the peripheral circulating leukocytes, about 2,000 leukocytes per cm.m. throughout the incubation period, or very small repeated treatments not noticeably affecting the number of peripheral circulating leukocytes, has no appreciable ameliorating effect on the severity of the anaphylactic reaction. A slight increase in the severity of the reaction was noted, however, especially in guinea-pigs given the second or exciting injection of protein when the roentgen ray had exerted a profound influence on the hematopoietic system as indicated by the level of the leukocytes. As pointed out by Corper in the case of thorium X and anaphylaxis, this result may be due to the intoxication with the roentgen ray coincidently with the anaphylactic reaction. Subcutaneous injections of mustard gas in maximum nonlethal doses given seven days before or coincident with the sensitizing injection of egg white or normal horse serum, or seven days before, or with the second injection, are without appreciable influence on the reaction resulting from the second injection of these proteins. Likewise, repeated small or medium doses administered throughout the incubation period, being initiated a few days before the first protein injection, are without appreciable effect.

**Spirochetal Organisms in Liver in Acute Yellow Atrophy.**—In the course of their study of a typical case of acute

yellow atrophy of the liver Hayashi and Kibata demonstrated the occurrence of a species of spirochete in the tissues. While the definite etiologic relation of the organism to the disease could not be determined, the parallelism existing between the abundance of the organism and severity of the lesion suggested the probability of such a relation.

**Experimental Measles.**—The nasopharynx of patients in the early eruptive, or praeeruption stage of measles was irrigated by Grund with from 30 to 50 c.c. of physiologic solution of sodium chlorid. Cultures were made from the material thus obtained, on blood-vitamin-agar to establish the prevalent types of bacteria. From 5 to 10 c.c. of the washings were injected into the trachea of rabbits, the animals being lightly anesthetized. The majority of rabbits gave a certain reaction. The least reliable and constant symptom seems to be the enanthem; while present in about 20 per cent. of the cases, only five animals showed what might be described as good typical Koplik spots. In some of the cases a certain relationship appeared between the temperature curve, the cutaneous symptoms and the leukocyte count; however, it was far from constant, and the fluctuations noted in daily blood counts made for one week before inoculation do not make a "leukopenia" seem a very dependable diagnostic sign in rabbits. In a number of animals a distinct polychromatophilia was noted. Conjunctivitis and inflammation of the upper respiratory passages, in varying degrees of severity, occurred in 70 per cent. of animals. Desquamation, either branny or flaky, occurred in all but four animals after the rash and was noted three times in cases in which no rash had been noted. Three animals with marked erythema died before desquamation occurred. Passage experiments from rabbit to rabbit were unsuccessful when nasal discharges were used. Successful inoculations were made with blood and a suspension of lung tissue from severe and fatal cases. The reactions obtained in rabbits inoculated with the fifth transfer of such cultures indicated at least that the virus remains alive and virulent at 37 C. for twenty-four days. The results obtained by reinoculating convalescent animals have thus far been rather contradictory, and frankly successful in only two cases.

**Infection of Meninges by Actinomyces.**—The organism isolated by Bell did not produce aerial hyphae or knoblike terminations of the filaments, and liquefied gelatin. It was gram-positive and grew best aerobically and well at room temperature. Under the classification given by Silberschmidt, it resembles 1a. It differs from *Actinomyces bovis* in that it grows better under aerobic conditions and well at room temperature; from *Actinomyces asteroides* of Eppinger in that it liquefies gelatin; from the actinomyces of Almquist in that it does not possess aerial hyphae, and from the actinomyces of Ferré et Faguet in that it does not show knoblike terminations of the mycelia. It furthermore differs in other details.

**Anaphylatoxin and Anaphylaxis.**—In the production of anaphylatoxin in vitro, in serum, or in plasma, German states there is no demonstrable disturbance in the alkaline reserve as shown by the Van Slyke plasma bicarbonate method. Likewise micro determinations of blood ammonia showed no variations in this constituent in anaphylatoxic serums as compared with normal serums. In experimental anaphylaxis, either specific or nonspecific, no disturbance in the alkaline reserve could be demonstrated. Further, in these conditions, no variations in the blood ammonia could be detected. The conclusion that suggests itself is that the alkaline reserve is not involved in any demonstrable manner in the phenomenon of anaphylatoxin production and anaphylaxis. These results are corroborative of those obtained in the study of amino-nitrogen in relation to anaphylatoxin. Therefore, the general conclusion to be drawn is that anaphylatoxin production is not accompanied by changes in amino-nitrogen, in blood ammonia, or in the alkaline reserve.

**Pathogenicity of *Bacillus Botulinus*.**—Orr states that experimental botulism can be produced in laboratory animals by the feeding or injection of massive quantities of toxin-free spores of *B. botulinus*. The presence of toxin produced in the body as a result of growth of toxin-free spores in the body can be demonstrated by the precipitin test as well as by direct toxicity tests. Botulism poisoning in man due to



the ingestion of spores is probably very rare, if it occurs at all. The possibility of such occurrence must, however, be considered.

### Journal of Laboratory and Clinical Medicine, St. Louis

January, 1922, 7, No. 4

- Basal Metabolism Determination and Its Technical Difficulties. H. M. Jones, Chicago.—p. 191.
- \*Influence on Spore Formation of Sealing Bacterial Cultures. L. Florence, Princeton, N. J.—p. 199.
- \*Elimination of Molds from Butter. I. W. Mendelson, A. E. McCoy and A. G. Long, Grand Forks, N. D.—p. 208.
- Synthesis of Arsphenamin and a Study of Some of Its Intermediate Derivatives. C. N. Myers, New York City.—p. 215.
- \*Pharmacologic Activity of Drug Store Samples of Infusion of Digitalis, U. S. P. IX. A. R. Bliss, Atlanta, Ga.—p. 225.
- \*Chronic Nephritis with an Unusual Degree of Nitrogen Retention. E. Weiss and V. C. Garner, Philadelphia.—p. 229.
- \*Mercuric Chlorid Poisoning with Recovery; Urea Concentration Test. E. H. Funk and E. Weiss, Philadelphia.—p. 233.

**Influence on Spore Formation of Sealing Cultures.**—Florence found that sealing cultures retarded the formation of spores and killed the majority of the vegetative forms of the aerobes and facultative anaerobes but not of the obligatory anaerobes. It affected the vegetative growth of obligatory aerobes more rapidly and intensely than that of facultative anaerobes. It did not apparently affect the growth of obligatory anaerobes as compared with that in unsealed culture tubes containing a small piece of sterile tissue.

**Eliminating Molds from Butter.**—After two years' study, Mendelson, McCoy and Long are led to say that by careful, efficient operation of the pasturizer and cooling system it is possible to produce commercially a good quality of butter of low bacterial content and quite free from molds at the time it is churned.

**Activity of Digitalis Infusion.**—Fifteen samples of infusion of digitalis, selected at random from retail pharmacies, were examined by Bliss. They showed an average activity of but 46.26 per cent. of the theoretical activity calculated from the amount of standardized drug supposedly used in the manufacture of the infusion. Five of the fifteen samples, prepared by a method that is frowned upon by the medical and pharmaceutical professions (simple dilution of the fluidextract), showed an average activity of 62.6 per cent.; of 16.34 per cent. stronger than the average for the total fifteen samples, and 24.5 per cent. stronger than the ten samples supposedly prepared by the U. S. P. IX method. The ten samples manufactured according to the method of the U. S. P. IX showed an average activity of but 28.1 per cent.

**Unusual Nitrogen Retention in Chronic Nephritis.**—A case is presented by Weiss and Garner of severe chronic nephritis in a young man, which ran a short, fatal course. There was no definite etiologic factor and the thought was suggested that there may have been a congenital basis. The case was marked by an unusual degree of nitrogen retention in the various fluids and tissues of the body. The urea was found rather uniformly distributed and approximately equal to that of the blood (304 mg. per hundred c.c.).

**Mercuric Chlorid Poisoning with Recovery.**—A case of mercuric bichlorid poisoning with recovery following intensive eliminative treatment, is presented by Funk and Weiss. Functional studies include the urea-concentration test which has been found of more value in the study of chronic nephritis but in the present instance, as an interesting side light, furnished information as to the comparative innocuousness of administered urea. If the urea-concentration test is to be more generally adopted this observation is of importance.

### Journal of Pharmacology and Experimental Therapeutics, Baltimore

January, 1922, 18, No. 6

- Toxicity of Blood of Suprarenalectomized Frogs. C. H. Kellaway, Oxford, England.—p. 399.
- \*Uterine Effects of Intravenous Injections of Fluids. H. G. Barbour and F. H. Rapoport, New Haven, Conn.—p. 407.
- Mode of Action of Potassium on Isolated Organs. A. J. Clark, London.—p. 423.

- \*Scopolamin-Morphin Narcosis. W. S. Van Leeuwen and A. Von Szent Gyorgy, Leiden, Holland.—p. 449.
- Relation of Histamin to Intestinal Intoxication. I. Presence of Histamin in Human Intestine. J. Meakins and C. R. Harington, Edinburgh.—p. 455.
- \*Effects of Some New Local Anesthetics. (Para-Aminobenzoyl Dinormal Butyl-Amino Ethanol and Propanol; and Diethyl Amino-Propyl Diphenyl Amino-Carbinol). M. L. Bonar and T. Sollmann, Cleveland.—p. 467.

**Uterine Effects of Intravenous Injections.**—Barbour and Rapoport found that after intravenous injections the tone of the uterus is especially affected by those changes in the blood which would promote alteration in the fluid content of the uterine muscle.

**Scopolamin-Morphin Narcosis.**—Monkeys were used by Van Leeuwen and Gyorgyi in these experiments because they felt that the results obtained in these animals would be in a closer connection to conditions in the human body, while the monkeys were sensitive to doses of from 5 to 10 mg. morphin, given subcutaneously, they were very insensitive to scopolamin, doses of 200 mg. given subcutaneously not producing any visible effect. A dose of 500 mg. given to one animal proved to be fatal. Scopolamin does not augment the action of morphin on the monkeys as far as concerns the external symptoms produced by this drug.

**Effects of New Local Anesthetics.**—Three synthetic anesthetics were compared by Bonar and Sollmann with cocain and procain from the standpoint of efficiency and side actions. Amino-benzoyl dibutyl amino propanol hydrochlorid ("H") was found to produce complete anesthesia on surface application to mucous membranes, concentrations about one half those of cocain, one-tenth those of procain; or about the same as holocain. It has the important advantage of being nonirritant. It does not affect the blood vessels materially, and can be used with epinephrin. On direct application to sensory nerves and on intracutaneous injection, the effective concentrations are about one half those of cocain or procain; but its toxicity is about the same as that of cocain, or perhaps, even somewhat higher; and therefore, considerably higher than that of procain. The compound therefore holds out promise of usefulness for anesthesia of intact mucous membranes, especially in the eye. For injection methods, it has probably no serious advantage over the less toxic procain. Amino-benzoyl dibutyl amino ethanol hydrochlorid ("G") is not quite as effective as the "H," as an anesthetic; and is almost as toxic. It produces considerable irritation which would render it less desirable. Ethyl-amino-propyl-diphenyl amino carbinol ("III") is distinctly less anesthetic than the others; it is about equally toxic, and so much more irritant that its use would be undesirable.

### Kansas Medical Society Journal, Topeka

January, 1922, 22, No. 1

- \*New Technic for Leg Amputation. T. G. Orr, Kansas City.—p. 1.
- How to Make County Medical Society Attractive and Helpful. E. E. Liggett, Oswego.—p. 2.
- Importance of Good Office Equipment and Hospital Facilities for Practice of Specialties. G. P. McCoy, Neodesha.—p. 5.
- Cooperative Collections and Protection Against Deadbeats. W. E. McVey.—p. 7.

**New Technic for Leg Amputation.**—The technic devised by Orr is chiefly for amputation in the middle third, although it may be used higher or lower in the leg or even in the thigh. Long anterior and short posterior flaps are made. In making the anterior flap the deep fascia is included. This is dissected back at least 3 cm. beyond the point where the tibia is to be divided. The posterior flap is quite short and is dissected free for a short distance only. From the edge of the posterior flap the skin and fat are dissected downward and a flap of fascia is freed of sufficient length to turn upward over the cut end of the stump. The muscles are then divided 2 or 3 cm. below the point at which the tibia is to be amputated. The cut muscles are retracted and the tibia and fibula sawed across. The fibula is cut at least 1 cm. shorter than the tibia. Either before or after the bones are severed the periosteum is carefully removed about the cut ends for a distance of 0.5 cm. and the marrow is scooped out. The tibial crest is then removed for 2 or 3 cm., so that there will be no sharp points or edges beneath the anterior flap. Sharp



or rough edges, if there be any, are made smooth by rongeur or coarse file. The nerves are then carefully freed, drawn out of the stump as far as possible, and injected with absolute alcohol. The nerve is then divided just below the injected point. This prevents the formation of neuroma to a greater extent than any of the other usual methods or nerve end treatment. All bleeding vessels are carefully ligated. The entire mass of muscles is brought together with one strong purse-string chromic suture, which suture crosses over the anterior beveled portion of the tibia. Additional sutures may be placed when necessary to fix the muscles together properly. If the mass of muscle appears too bulky and is likely to produce a bulbous stump, small portions of it may be excised. The muscles should have been left long enough so that when the purse string is drawn, the cut end of the bone will be slightly shorter than the muscle. Muscle flaps are not made. The already formed posterior fascial flap (which may have with it some of the thinned out portion of the calf muscle tendons) is turned forward and sutured over the end of the entire stump. Sutures are placed through this flap and well into the muscle beneath. The anterior flap is then turned down and the fascia sutured in a few places. This gives two layers of fascia over the end of the bone. The skin is then very carefully closed, shaping the flaps to fit.

### Kentucky Medical Journal, Bowling Green

January, 1922, 20, No. 1

- Study of Gallbladder by Lyon-Metzer Method. C. Pope, Louisville.—p. 2.
- Lyon-Metzer of Diagnosis of Gallbladder and Bile-Duct Diseases. J. T. McClymonds, Lexington.—p. 8.
- Application of Biologic Agents in Diagnosis, Prevention and Treatment of Contagious Diseases. J. F. Anderson, New Brunswick, N. J.—p. 17.
- Inherited Spinal Paraplegia, Case Report. J. W. Moore, Louisville.—p. 25.
- Stone in Upper Urinary Tract. O. Grant, Louisville.—p. 28.
- Diagnosis of Urologic Diseases. W. T. Briggs, Lexington.—p. 31.
- Diagnosis and Pathology of Bladder Tumors. H. Bronner, Louisville.—p. 34.
- Uterine Fibromata: Ascites. Case Report. B. C. Frazier, Louisville.—p. 42.
- Young Man in Medicine. S. R. Roberts, Atlanta, Ga.—p. 43.
- Differential Diagnostic Value of Different Degrees of Positiveness of Wassermann Reaction with Use of Cholesterol Antigens. J. D. Allen, Louisville.—p. 46.
- Syphilis of Nervous System. C. B. Willmott, Louisville.—p. 49.
- Preventive Medicine. B. C. Frazier, Louisville.—p. 57.
- Amebic Dysentery: Case Report. G. S. Hanes, Louisville.—p. 65.
- Syphilitic Destruction of Bone and Soft Parts: Case Report with Comments. W. J. Young, Louisville.—p. 67.
- Traumatic Neurosis. W. E. Gardner, Louisville.—p. 69.
- Duodenal Ulcer in Negro, Case Report. L. W. Frank, Louisville.—p. 74.
- Blood Pressure. H. K. Orsborn, Owensboro.—p. 76.

### Missouri State Medical Association Journal, St. Louis

January, 1922, 19, No. 1

- \*Vertigo. L. M. Sellers, Kansas City.—p. 1.
- Surgery of Gallbladder. L. Rassieur, St. Louis.—p. 6.
- \*Differentiation and Treatment of Carcinoma and Sarcoma of Colon. C. Potter, St. Joseph.—p. 8.
- Epiphysitis of Femur in Children. F. D. Dickson, Kansas City.—p. 16.
- Use of Roentgen Rays in Diagnosis of Chest Complications. E. H. Kessler, St. Louis.—p. 19.
- Roentgen-Ray Study of 500 Medical Cases for Paranasal Sinus Infection. R. L. Diveley, St. Joseph.—p. 21.
- \*Disturbed Pituitary Function Associated with Sphenoidal Sinus Abscess. F. M. Lowe, Kansas City.—p. 23.
- Status Lymphaticus as Factor in Nose and Throat Surgery. E. L. Myers, St. Louis.—p. 25.
- Factors of Safety in Surgery. M. G. Seelig, St. Louis.—p. 27.
- Case of Adult Poliomyelitis with Respiratory Paralysis. R. P. Dorris, Jefferson City.—p. 31.
- Case of Weil's Disease. G. S. Cannon, Farnfeld.—p. 32.

**Vertigo.**—Sellers points out that all cases of true vertigo with associated symptoms are due to lesions of the semicircular canals, or their tracts to or within the central nervous system. The lesion is in most cases (intracranial new growths excepted) secondary to some general systemic affection. When located within the labyrinth or involving the eighth nerve trunk, all responses from that side are similarly affected; e. g., hearing is diminished; the vertigo, falling, and nystagmus are toward, and the past-pointing away from the affected side in irritative lesions, and vice versa in destructive lesions. In vestibular lesions, absence of the spontaneous

equilibratory symptoms at the time of examination is very likely, as compensation quickly occurs. The presence of only part of these symptoms is nearly always due to a central lesion as it is only after the break-up of the pathways that such can happen.

**Carcinoma and Sarcoma of Colon.**—Embodied in Potter's report are seven cases of carcinoma and two of sarcoma of the colon, classified as follows: Carcinoma—cecum, and ascending colon, 1 each; transverse colon, 2; splenic flexure, 1; sigmoid, 2. Sarcoma—ascending and transverse colon, 1 each.

**Pituitary Dysfunction in Sphenoid Sinus Infection.**—Moderately definite manifestations of pituitary dysfunction, clinically, with brain and meninges normal, postmortem, and the presence of an abscess in the sphenoidal sinus, Lowe asserts, speak for the reaction of the hypophysis to an inflammation closely adjacent. In the case reported by him, the post-mortem finding of an unsuspected abscess involving the sphenoidal sinus was a surprise. Signs of dysfunction of the pituitary body were the only symptoms manifested during the life of the patient.

### Northwest Medicine, Seattle

January, 1922, 21, No. 1

- Atrophic Pyelonephritis. W. F. Braasch, Rochester, Minn.—p. 1.
- Suprapubic Versus Perineal Prostatectomy. F. Hinman, San Francisco.—p. 5.
- Principles of Prostatectomy. A. E. Rockey, Portland, Ore.—p. 9.
- Backache of Renal Origin. A. H. Peacock, Seattle.—p. 12.
- \*Benzyl Benzoate in Cases of Bladder Distension. W. J. Stater and D. M. Vickers, Boston.—p. 17.
- Average Patient: Study of One Thousand Consecutive Histories of Sick People. L. J. Palmer, Seattle.—p. 18.
- Focal Infection from Dentist's Standpoint. L. F. Shaw, Pocatello, Idaho.—p. 21.
- William Harvey and His Discovery. H. Viets, Boston.—p. 23.

**Benzyl Benzoate in Bladder Distention.**—Stater and Vickers have used benzyl benzoate to control the after-pains of labor and in cases of postpartum distention of the bladder—2 c.c. of a 20 per cent. alcoholic solution of benzyl benzoate by mouth being sufficient to incite urination in twenty minutes. The drug was also used with success in cases of carcinoma of the rectum with extensive surgical excision, hysterectomy for fibroids, circumcision and lobar pneumonia.

### Pennsylvania Medical Journal, Harrisburg

January, 1922, 25, No. 4

- Preventive Pediatrics. H. J. Cartin, Johnstown.—p. 227.
- Modern Conceptions of Treatment of Syphilis. J. F. Schamberg, Philadelphia.—p. 228.
- \*Treatment of Visceral Syphilis. T. McCrae, Philadelphia.—p. 234.
- \*Treatment of Neurosyphilis. H. C. Solomon, Boston.—p. 236.
- Transfusion: Methods and Indications. W. E. Lundblad, Sayre.—p. 245.
- \*Unresolved Pneumonia. G. M. Piersol, Philadelphia.—p. 249.
- \*Protracted Unilateral Bronchopneumonia of Lobar Distribution. D. Riesman, Philadelphia.—p. 255.
- \*Diseased Conditions of Bones and Joints as Influenced by Menstruation. J. T. Rugh, Philadelphia.—p. 261.
- Message from Homeopathic Medical Society of Pennsylvania. C. Bartlett, Philadelphia.—p. 264.
- Medical Legislative Conference. E. A. Krusen, Norristown.—p. 265.
- Fallacy and Syphilis. P. S. Pelouze, Philadelphia.—p. 265.
- Case of Chronic Jaundice, Cured by Lateral Anastomosis of Common Bile Duct with Stomach. M. Behrend, Philadelphia.—p. 268.
- Co-operation Between Physician and Minister. A. O. Caldwell, Waverly, N. Y.—p. 269.

**Treatment of Visceral Syphilis.**—One point emphasized by McCrae as being worthy of note is paying attention to the condition of the blood. This should be watched and proper treatment carried out for anemia. In visceral syphilis arsphenamin and neo-arsphenamin should be given in small dosage, especially with aortic disease and not at all in hepatic syphilis. The use of mercury should be regarded as an important aid in visceral syphilis. Treatment should be given as intensively as possible and repeated, if possible, once a year for five years, better once a year for the duration of the patient's life.

**Treatment of Neurosyphilis.**—Solomon is optimistic about the treatment of neurosyphilis. Not all patients can be helped, but many patient who are considered incurable can be benefited greatly by intensive and prolonged treatment of the



proper sort. Some do well under one form of treatment; some do well under another; some do not do well at all, and some patients develop neurosyphilis despite a type of treatment under which other patients who have neurosyphilis are cured. The best method is the method which produces results in the given case.

**Unresolved Pneumonia.**—An interesting feature of the pneumonias that have been so prevalent of late years, Piersol says, is the predominance of pneumonias of lobular distribution, or bronchopneumonia. Typical croupous, or lobar pneumonia, has been relatively uncommon. Furthermore, in the recent epidemics of pneumonia, the chief etiologic factor has not been pneumococcus. Indeed, this organism has frequently been entirely absent. The disease has more often been due to mixed infections: notably by streptococci, both hemolytic and nonhemolytic, and by the influenza bacillus, these organisms occurring alone, in combination, or in association with various strains of pneumococci. Consequently, typical pneumococcus lobar pneumonia has been comparatively infrequent. Chronic pulmonary disease of pneumonic origin is more frequently encountered than heretofore, because of the bacteriologic and pathologic findings peculiar to the recently prevalent bronchopneumonias. As the result of the increased incidence of bronchopneumonias of non-pneumococcal origin, unresolved pneumonia has been observed more often. There are two main classes of cases that are diagnosed unresolved pneumonia. The first class embraces the true instances of unresolved pneumonia, but which in reality prove to be some graver complication. Piersol says that the reason delayed resolution frequently goes unrecognized, is because the prevalence of primary bronchopneumonia in adults is not generally appreciated.

**Bronchopneumonia of Lobar Distribution.**—The most striking feature of the disease discussed by Riesman is the presence of a lesion at the base of the lung, in the lower lobe, without concomitant involvement of the apex. The infection is primarily and almost exclusively a basal one and, in the vast majority of cases, involves but a single lower lobe, the left perhaps a little more often than the right. Among all the cases of unilateral bronchopneumonia of lobar distribution that Riesman has seen, there has been only one in which tuberculosis supervened. The clinical history and course of the disease are discussed by Riesman. The cases may be classified into acute, subacute and chronic. The physical signs vary little in these three groups, the separation being based chiefly on the history. The treatment is purely symptomatic. Complete recovery may be promised in virtually all cases in young persons. In older individuals, the condition may drag on for years without much change in either the physical signs or the general health. There is no breaking down and no cavitation as one finds in chronic pulmonary tuberculosis.

**Effect of Menstruation on Disease.**—Whatever may be the changes which occur during the process of menstruation, and however they may be produced, Rugh asserts that a diseased area in any portion of the body may be adversely affected by it, and the surgeon must be prepared to deal with whatever complication may arise at that time. It is undoubtedly good surgery to advise against, and refuse to undertake any surgical procedures, of any degree of severity, immediately preceding or during the period of menstruation.

### Philippine Journal of Science, Manila

August, 1921, 19, No. 2

- Citrus-Canker Control. H. A. Lee, Manila.—p. 129.  
Kalinga Texts from Balbalasang-Ginaang Group. O. Scheerer.—p. 175.  
Japanese Lepidoptera and Their Larvae: Part VI. A. E. Wileman.—p. 209.  
Ancient Cave Dwellers of Batwaan, Masbate, Philippine Islands. W. D. Smith.—p. 233.  
Opisthorchis Wardi. New Species of Liver Fluke from Cat in Philippine Islands. L. D. Wharton.—p. 243.  
Philippine Aleyonaria. Part VI: New Philippine Pennatularia (Sea Pens) of Genus Lituaria. S. F. Light.—p. 247.

September, 1921, 19, No. 3

- Filariasis in China. J. P. Maxwell.—p. 257.  
Review of New Species of Plants Proposed by N. L. Burman in His Flora Indica. E. D. Merrill.—p. 329.

### Virginia Medical Monthly, Richmond

January, 1922, 48, No. 9

- Pulmonary Tuberculosis and Syphilis. H. G. Carter, Burkeville.—p. 553.  
Children's Psychopathic Clinic of Medical College of Virginia. R. F. Gayle, Jr., and H. DeJ. Coghill, Richmond.—p. 558.  
Treatment of Syphilis of Central Nervous System. D. C. Smith, Charlottesville.—p. 561.  
\*Adenoma of Pituitary: Report of Five Cases. J. W. Hunter, Jr., Norfolk.—p. 563.  
Prostatectomy Under Local Anesthesia; Report of Sixteen Cases. T. J. Hughes, Roanoke.—p. 570.  
Plea for Earlier Reference of Prostatic. J. H. Neff, University.—p. 572.  
Tuberculosis of Kidney. A. I. Dodson, Richmond.—p. 574.  
Granuloma Inguinale. C. F. Ross, Richmond.—p. 579.  
Focal Infection of Urinary Tract. L. T. Price, Richmond.—p. 582.  
Urologic Problems of Interest to General Practitioner. A. L. Wolbarst, New York.—p. 586.  
Outbreak of Diphtheria at University and Charlottesville, Va., Due to Milk Infection. W. E. Bray, University.—p. 592.  
Nitroglycerin and Veratrum in Early Pneumonia. A. B. Grubb, Cripple Creek.—p. 593.  
Primary Laryngeal Diphtheria. E. T. Gatewood, Richmond.—p. 594.  
\*Globus Diospyri Virginianae Seminum; Report of Case. W. L. Peple, Richmond.—p. 596.  
Treatment of Blepharitis Ulcerosa with Mercurochrome. W. Patterson, Danville.—p. 599.

**Adenoma of Pituitary.**—All of the five patients reported on by Hunter primarily complained of failing vision. In two cases there was a complete bitemporal hemianopsia for all of the colors; in one there was a greatly contracted field of vision for either eye with a bitemporal hemianopsia for the blue and red; in one there has been a gradual loss of sight, that of the left eye being entirely gone when seen and a temporal hemianopsia in the right, the blindness becoming total in time; and in one a complete blindness existed when seen. This emphasizes the need of mapping out the fields of vision in all doubtful cases. It is furthermore noted that in one case there was a distinct notch in the outer and upper quadrant of the fields of vision.

**Persimmon Seeds Tumor of Stomach.**—Peple reports the case of a man who ate freely of persimmon, seeds and all, and soon after began to have gastric distress and nausea. He also had a readily palpated and movable lump in his stomach. The mass was removed through a gastrostomy opening. It was 3½ inches long and about 3 inches wide, very irregular in outline and compact in structure, containing the persimmon seeds.

### FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

Jan. 7, 1922, 1, No. 3184

- Certain Aspects of Pain. H. Head.—p. 1.  
\*Problems Involved in Congress of Sexes in Man. A. Thomson.—p. 5.  
\*Secretion into Stomach and Duodenum; with Special Reference to Diabetes Mellitus. T. I. Bennett and E. C. Dodds.—p. 9.  
Hemiplegia in Young Child, Followed Later by Locomotor Ataxia. W. Calwell.—p. 11.  
\*Asthma and Radium Menopause. J. N. M. Ross.—p. 12.  
Treatment of Squint. H. Smith.—p. 13.  
\*Pulsatilla in Dysmenorrhea. F. C. Coley.—p. 13.  
Obstruction of Pelvic Colon by Pedicle of Ovarian Cyst. G. S. Woodman.—p. 14.  
Eruption Resembling Varicella in Lobar Pneumonia. W. S. Sharpe.—p. 14.  
Operation of Cholecystgastrostomy. G. Ralphs.—p. 14.

**Endocrine in Male Ejaculate.**—Thomson suggests that the male ejaculate contains other ingredients than those alone concerned with fertilization, perhaps some hormone or endocrine secretion, which, by rapid absorption through the tissues of the female, may set agoing, through the agency of the thyroid, the complex mechanism involved in the elaborate preparations of the sexual system to meet its reproductive obligations. Thomson says that he has been told that among musicians it is recognized that the female voice never attains to its full pitch of excellence until marital relations have been established.

**Secretion into Stomach and Duodenum.**—Bennett and Dodds assert that the variations in alveolar carbon dioxide tension after a meal depend, in a subject at rest, on the secretions of acid and alkali into the stomach and duodenum.



Confirmation of this is given by the curves of alveolar carbon dioxid pressure from subjects with varying degrees of gastric secretion, or with pancreatic insufficiency. Further confirmation is supplied by the results of experimental introduction of food direct into the duodenum. The application of atropin to the mucosa of the stomach or duodenum appears to arrest the secretion of acid or alkali into the organ to which the drug is applied. The authors believe that, like salivary and gastric secretion, pancreatic secretion must be a slow, continuous process interrupted by a more vigorous flow whenever food traverses the pylorus. The fasting level of alveolar carbon dioxid tension in any subject represents a balance between the continuous loss from the blood stream of acid via the stomach, and alkali via the pancreas and duodenum. Cases of severe diabetes frequently show a low fasting level of alveolar carbon dioxid tension even when no ketosis is present. Cases of severe diabetes investigated by the authors have, after a test meal, shown a fall of alveolar carbon dioxid tension greater than that seen in any other condition so far examined. It is suggested that this is due to a condition of hypersecretion of the pancreas analogous to the gastric hypersecretion seen in cases of Reichmann's disease (gastrosuc chorea).

**Asthma Caused by Radium Menopause.**—Ross relates the case of a woman who developed a peculiar mental condition, which was diagnosed as being due to cerebral anemia caused by excessive monthly loss of blood. The menopause was artificially induced by the introduction of radium into the uterine cavity. In ten days she was mentally quite normal and menstruation has permanently ceased. As soon as she commenced to resume partially her ordinary life a purulent secretion appeared from both antra, accompanied by exceedingly troublesome asthmatic attacks. The sputum contained large numbers of pus cells and long chain streptococci, while both nasal and antral swabs showed large numbers of streptococci and also gram-negative bacilli (probably Friedländer's). An autogenous vaccine was made, and she was given twelve progressively increasing doses. No improvement was noticed. Asthma was practically continuous; bronchitis was marked at both bases; the patient was losing weight, could get no rest by day or night, and was rapidly going downhill. Ross made exhaustive trials of practically every known medicine which had any reputation whatsoever in controlling asthmatic attacks, but none had the slightest beneficial effect. Finally, thinking that the menopause might be responsible for the patient's condition, ovarian and mammary gland extracts were administered. Immediate improvement in the patient's condition set in and under continued treatment the patient made a complete recovery.

**Pulsatilla in Dysmenorrhea.**—In cases of premenstrual pain with small loss of blood Coley has had good results from the use of tincture of pulsatilla, 10 minims, and spirits of chloroform, 5 minims, every three hours.

### China Medical Journal, Shanghai

November, 1921, 35, No. 6

- \*Case of Glioma Retinae. H. T. Pi.—p. 499.
- Collection of Chinese Embryos. P. H. Stevenson.—p. 503.
- Mastoiditis in Peking. A. M. Dunlap.—p. 521.
- \*Serum Globulin in Kala-Azar. R. H. P. Sia and Hsien Wu.—p. 527.
- Intestinal Parasites of Man in Central Yangtze Valley. E. C. Faust and C. McA. Wassell.—p. 532.
- Incidence of Vaccination and Smallpox in North China. J. M. Korn.—p. 561.
- Toxicity of Antimony in Rabbits. J. H. Korn.—p. 564.
- New Viewpoint of Pharmacology. B. E. Read.—p. 567.

**Bilateral Glioma of Retina in Child.**—Pi's patient was only 3 years of age and both eyes were affected by the disease. The child died four months after Pi first saw her.

**Serum Globulin Content of Kala-Azar Blood.**—A study was made by Sia and Hsien of Ray's so-called "hemolytic" test for kala-azar with the purpose of determining the nature of the turbidity and precipitate which forms when blood from kala-azar patient is added to distilled water. Ray's assumption that the turbidity is due to incomplete hemolysis of the red blood corpuscles resulting from some change in the kala-azar blood plasma was found to be incorrect. There was no difference observed between kala-azar serum and normal

serum in the power to protect red blood cells against hemolysis. It was found, however, that when kala-azar serum alone is mixed with distilled water a precipitate occurs. Quantitative studies of the globulin content of kala-azar blood revealed the fact that in this disease the serum globulin is not only much increased over normal but the concentration is higher than has been found in any other diseased condition. This result is in keeping with the previous finding that the test was positive only in kala-azar. It is proposed that this test be called the globulin precipitation test for kala-azar.

### Indian Journal of Medicine, Calcutta

December, 1921, 2, No. 4

- \*Fixing of Standards of Purity of Milk and Its Products. S. B. Ghose and C. L. Bose.—p. 485.
- Enlargement of Prostate. N. P. Srivastav.—p. 493.
- Modified Smith's Cataract Operation in Capsule. S. N. Mixra.—p. 502.
- Snakebite or Anaphylaxis. B. Das.—p. 505.
- Treatment of Cholera. P. Ganguly.—p. 507.
- \*Epidemic Dropsy Among Officers and Prisoners of Malda Jail. B. K. Bhowmic and S. L. Sarkar.—p. 510.
- \*Digital Dilatation of Os in Labor. R. P. Banerji.—p. 517.
- Ratbite Fever. S. K. Mukherjee.—p. 522.

**Standards for Milk Purity.**—Taking the average of the mean percentages of fat and nonfatty solids of cow's milk examined and Ghose and Bose in various parts of India, they obtain 4.67 as the figure for fat and 8.82 as that for nonfatty solids. If, therefore, 4 per cent. of fat and 8.5 per cent. of solids-not-fat are fixed as minimum standards of purity of cow's milk, it will, in their opinion, be a fair and reasonable standard. Any sample of cow's milk giving figures lower than these should be presumed to be adulterated unless the contrary is proved by the vendor.

**Epidemic Dropsy.**—The predominating symptoms in the cases of epidemic dropsy cited by Bhowmic and Sarkar were: petechial rash on the lower extremities; diarrhea; galloping rhythm; dyspnea at nights; high temperature—up to 104 F. There is strong ground for the belief that the disease spreads by intimate contact. The period of infectivity is short. The disease appears to have an incubation period of five or six days. The fact that two babies escaped suggests that those who live on milk are not liable to get this diseases though they were nursed now and then by their mothers who got the disease very badly. Possibly the seat of mischief is in the intestines. The constant formation of gas in the intestines as well as the pronounced loss of appetite and other gastrointestinal symptoms, point toward a fermentative process.

**Digital Dilatation of Os.**—Banerji uses both hands—back to back—first introducing the right index finger then the left. By slight separation of the terminal phalanges one can dilate the os at pleasure. The dilating pressure thus made is not a direct outward one against the edge of the os, which would rush and injure it, but it is downward and outward, for the finger tips are hooked within the os, and the dilation thus very closely resembles the natural one. By a slight change in the position of the fingers, to vary the direction of the pressure, the whole circumference of the part to be dilated is more or less acted on.

### Lancet, London

Jan. 7, 1922, 1, No. 5132

- Body and Mind: Origin of Dualism. F. Mott.—p. 1.
- Serum Treatment of Tuberculosis. H. Spahlinger.—p. 5.
- \*Chorionepithelioma. J. M. M. Kerr.—p. 9.
- \*Case of Venous Angioma of Cerebral Cortex. H. Campbell and C. Ballance.—p. 10.
- Case of Bilateral Interstitial Ruptured Ectopic Gestation Sacs. A. E. M. Woolf.—p. 11.
- Fixation Abscess. A. T. Todd.—p. 12.
- Significance of Digestion Leukocytosis. D. N. Paton.—p. 15.
- Obstruction of Pelvic Colon by Pedicle of an Ovarian Cyst. G. S. Woodman.—p. 16.
- Case of Anastomotic Ulcer. Following Gastro-Enterostomy Four Years Previously: Transgastric Excision and Recovery. J. W. Adams.—p. 16.
- Colloidal Manganese in Hodgkin's Disease. R. Samut.—p. 17.
- Case of Congenital Multilocular Cyst of Axilla in Baby. R. Handfield-Jones.—p. 17.

**Chorionepithelioma.**—Kerr has had eight cases of this type. Two patients died as a result of the operation; two died of metastases; two are still alive who were operated on many years ago; one who was operated on a year ago is still well;



and one is lost from sight. A permanent cure, taking early and late cases, may be expected in about 30 per cent. of cases, showing a result a little worse than in carcinoma of the uterine body. Kerr had thrice performed vaginal hysterectomy and five times the abdominal operation. It is unnecessary to do a Wertheim operation in this condition as the glands are rarely, if ever, affected. Besides, it takes a much longer time, and in all cases the shorter the duration of the operation and the less blood lost the better the chances of success.

**Venous Angioma of Cerebral Cortex.**—The first symptom noticed by the man whose case is cited by Campbell and Balance was weakness in the left arm and leg which progressively increased. Since the beginning of the weakness he suffered from fits involving the same side, generally beginning with numbness in the left toes; the numbness spread upward; when it reached the left hand the latter closed; when it reached the left temple the head turned to the left and the mouth opened. After a fit severe headache was felt. The diagnosis was a progressive lesion—neoplasm—involving the postcentral and precentral gyri. At operation a venous angioma beneath the arachnoid membrane was exposed. The most prominent part of the angioma was within the concavity formed by a bend of a large vein near the middle line and was whitish in color due to some change in the arachnoid. This corresponded to the upper part of the ascending parietal convolution.

### Medical Journal of Australia, Sydney

Dec. 17, 1921, 2, No. 25

Treatment of Hydatid Disease. B. Kilvington.—p. 555.  
Medical Organization. A. G. Butler.—p. 558.

### Sei-I-Kwai Medical Journal, Tokyo

December, 1921, 40, No. 5

Active Principles of Pituitary Body. Y. Saito.—p. 1.  
Suprarenal Tumors of Horses and Cattle. T. Kimura.—p. 3.

### South African Medical Record, Cape Town

Dec. 10, 1921, 19, No. 23

Toxic Idiopathies or Idiopathic Toxemias. E. G. Dru-Drury.—p. 451.

### Tubercle, London

January, 1922, 3, No. 4

\*Epidemiologic Studies in Human Tuberculosis. A. Distaso and A. C. Johnson.—p. 145.  
Organization Against Tuberculosis in France. L. Bernard and G. Poix.—p. 159.  
Extrapleural Pneumolysis. H. Ulrici.—p. 162.

**Epidemiology of Tuberculosis.**—An inquiry made by Distaso and Johnson in an agricultural village shows that tuberculosis has spread from two main foci of infection. From these two foci, the actual cases existing in the village and also the "contact" have arisen, with one exception which is an independent focus and is subsiding. Infection takes two lines. It spreads in the family, producing active disease; it infects also strangers or near relatives who come in less intimate contact with the infecting persons, but does not in them produce open tuberculosis. These people are relatively immune, because they are healthy adults and they do not show, up to now, the least clinical sign or symptom of active disease. The fact that offspring of these families present a negative reaction, whereas the parents present a positive reaction, has led the authors to conclude that the parents have gone through an infection but that the infection has merely led to an immunization of the individual. From this observation they have concluded that the Pirquet reaction is a reaction of immunity. Should the parents have been infectious they would have infected their children. The condition sine qua non for infectivity in tuberculosis is the existence of open foci in the lungs. The expired air is the chief vehicle of infection. Of all accessory factors for the spread of tuberculosis, overcrowding seems to be the most important. In order that immunity shall arise the contact must take place at intervals, only small quantities of virus being absorbed. Under these circumstances the human organism mobilizes its defense and can cope with the infection. Practically speaking, people in intermittent contact with open cases get only a

Pirquet "positive" but not the active disease, deriving benefit, not harm, from the small doses of bacilli to which they are exposed. On the other hand, the facts brought out through this inquiry show that when the virus is absorbed continually, as in the intimate contact of mother and child, then active tuberculosis arises.

### Bulletin de l'Académie de Médecine, Paris

Dec. 6, 1921, 86, No. 40

Systematic Reexamination in Preventive Medicine. L. Rénon.—p. 316.  
Anthropology and the Medical Sciences. R. Verneau.—p. 319.  
Epidemic of Dysentery in Seine Region. H. Violle.—p. 321.  
Three Electrode Lamp as Gage for Roentgen Rays. Guilbert.—p. 323.  
\*Plague on French War Ship. P. Barthélemy.—p. 326.

Dec. 13, 1921, 86, No. 41

Report on Prizes.—p. 329. See News Item, THE JOURNAL, p. 360.  
A Century of Annual Reviews at the Académie. C. Achard.—p. 358.  
Conditions for Prize Competition.—p. 376.

**Plague on War Vessel.**—Barthélemy traces the epidemic of plague on the Cronstadt last year to the rat cadavers left after deratization. The plague bacilli survive the fumes that kill the animals infested by them, and other rats coming on board may become infected. This warns that the rat cadavers should be burnt after deratization. In one case of plague the only symptom was fever, but plague bacilli were cultivated from the blood. The man recovered.

### Bulletin Médical, Paris

Dec. 17, 1921, 35, No. 51

\*Visual Disturbances After Loss of Blood. A. Terson.—p. 1005.  
Ultraviolet Rays in Therapeutics. L. Oppenheim.—p. 1006.

**Visual Disturbances After Loss of Blood.**—Terson has been collecting data for some time on this subject, and has found records of only 250 cases. The disturbances did not develop until from three to eight days after the loss of blood; no instance is known of an interval of over three weeks. The disturbances are of three types: a rapidly curable night blindness; hemianopia of cortical origin, the fundus of the eye normal but the gap in the field of vision permanent; weakening of vision in one or both eyes. It may progress to partial or total blindness which usually is incurable. These visual disturbances can occur at any age but are most common in women after childbirth and after repeated venesection. Sometimes the lesion is accompanied by deafness, coma, polyneuritis, oculomotor paralysis or headache, showing that other centers and nerves are suffering likewise. To ward off or relieve such accidents, the head should be kept low, the legs raised, and the blood pressure and heart action stimulated by transfusion of citrated blood or saline in emergencies. The patient should not be allowed to sit up, for any reason, and very hot compresses should be applied to the eyes. Auto-hemotherapy, turpentine fixation abscess and lumbar puncture should be studied in this connection. In tardy treatment of the atrophy of the optic nerve, he suggests subconjunctival and periocular injections for revulsion, plus phosphorus, strychnin and fibrolysin.

Dec. 31, 1921, 35, No. 53

\*Obesity in Children. G. Mouriquand.—p. 1037.  
Organotherapy in Obesity. F. Rathery.—p. 1045.  
Regulation of Lipoid Content of Blood. Schaeffer.—p. 1050.  
\*Physical Measures in Treatment of Obesity. P. Mathieu.—p. 1051.

**Obesity in Children.**—Mouriquand remarks that treatment of obesity in children should begin before they are born, before conception, the parents taking a course of physical treatment to combat their obesity, as well as dieting. The pregnant woman should refrain from fattening foods, but should not starve herself. Weill has reported the case of an obese woman who fairly starved herself during her second pregnancy, but this second child was even larger than her very large first child. Overfeeding of the infant must be guarded against with special care in families predisposed to obesity, and at weaning and later the more fattening elements must not be allowed in excess. It is sometimes advisable to get the child out of an environment with sedentary and over-eating habits. Some children eat an enormous amount of bread; by reducing this, the tendency to obesity may be averted. Respiratory exercises increase the chest measure and oxidations, and training the muscles improves the "draft."



With any tendency to myxedema, thyroid treatment may be effectual, but under other conditions it should be given very cautiously. It may increase the appetite, and thus do harm. When an endocrine origin is suspected, a combined organo-therapy might be tried, alternating thyroid and ovarian treatment for a girl at puberty, or a combination of pituitary, ovary, and suprarenal extract with a minute amount of thyroid. This associated organotherapy has to be kept up for a long time, with intervals of from two to four weeks.

**Treatment of Obesity by Physical Measures.**—Mathieu insists that muscular exercise aids in combating obesity only when the exercise is rapid and prolonged enough to use up the circulating and reserve glycogen; the liver functioning enough to transform the fat into glucose; and the food poor in carbohydrates and fats that generate glycogen anew to replace what is used up by the muscles. Recent research has shown that the lungs oxidate and consume, locally, a considerable amount of the fat reserves. A further essential is endocrine organotherapy or a course of mineral waters, according to the case. The pulse and blood pressure should be recorded before and after test exercises to learn how much the cardiovascular system can stand. Kidney functioning must also be supervised to insure that the waste products, increased by the exercise, are being duly flushed out.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Nov. 25, 1921, 45, No. 34

Case of Gangrene of Lung. Denéchau, Estève and Quartier.—p. 1534.  
Erythema Nodosum in Pneumococcus Septicemia. E. Sacquépée.—p. 1539.

"Aplastic Leukemia with Undifferentiated Cells." A. Clerc.—p. 1542.  
\*Rupture of Heart. L. Ramond, E. Baudouin and Fouché.—p. 1545.

\*Tubercular Hip Joint Disease. A. Léri and Lerond.—p. 1551.

Typhoid Perforation of Meckel's Diverticulum. Léri and Deschamps.—p. 1554.

\*Autoserotherapy of Arthritis. Dufour, Thiers and Alexewsky.—p. 1558.

\*Diuretic Action of Calcium. L. Blum, E. Aubel and R. Hausknecht.—p. 1561. Idem. L. Blum and O. Bang.—p. 1569.

**Spontaneous Rupture of the Heart.**—The rupture in the man of 67 was one of the largest of the twenty-seven cases compiled; only two others were larger, the split measuring 5 and 6 cm. The symptoms were those of traumatic slow accumulation of blood in the pericardium, but, at the time, the diagnosis had been liver colic. This was disproved by the sudden death. The first symptoms had been intense pain in the epigastrium, with vomiting and colics. The pallor, lipothymia, distress and dyspnea, the spreading of the pain to the left shoulder and arm, and signs of arteriosclerosis might have suggested the diagnosis. In another case, the colic pains had been ascribed to the digestive tract, and there was suspicion of poisoning until necropsy revealed the rupture of the heart.

**Tubercular Pseudoparaplegia.**—The woman, now 60, has been classed for twenty years as a case of paraplegia, but there is no paralysis. The impotence of the legs is the result of tubercular injury of both hip joints, with luxation of the femurs, the head and neck entirely destroyed. The whole process was painless.

**Treatment of Gonorrheal Arthritis.**—Three new cases are added to the three previously published by these writers, all testifying to the curative action of subcutaneous injection of the fluid obtained by puncture from the diseased joint. They comment on the efficacy, prompt action and harmlessness of this form of autoserotherapy. It seems to make no difference whether the fluid contains pus or gonococci. They inject from 10 to 20 c.c. and repeat this as often as puncture is required. In the total six cases, the cure was realized in from four to thirty days. Seven similar cases have been published by others, all reporting prompt success.

**Diuretic Action of Calcium Salts.**—Blum, Aubel and Hausknecht have previously explained the diuretic action of potassium salts as owing to the potassium displacing the sodium in the tissues. The sodium is then cast off, and with it the water that had been retained to balance the sodium. They here report research on calcium salts which shows they are equally effectual in inducing diuresis, and by the same mechanism. The antagonism between calcium and sodium is even more pronounced than with potassium. In one case reported,

the diffuse edema had persisted unmodified by the usual diuretics, but the weight dropped rapidly by 11 kg. when calcium salts—especially the chlorid—were administered. As soon as the calcium was suspended, the decline in weight stopped. When the woman of 58 was given a mixture of sodium chlorid and calcium chlorid, she increased in weight, and there was no diuretic action, merely three diarrhetic stools. The ascites with cirrhosis of the liver subsided likewise under calcium chlorid in three cases described. The effect is at least as pronounced as with potassium salts. The intake of salt has to be restricted, and the dose of the calcium chlorid has to be adequate. Their usual dose was 11.1 gm. of the calcium chlorid by the mouth, but they gave up to 22 gm. in some cases. They suspend the drug after five or six days, and wait for eight or ten before resuming it. They explain that the calcium seems to be eliminated by way of the bowel; the chlorin by way of the kidneys. As the chlorin is freed from the calcium, it is forced to combine with sodium, and the sodium is cast off, and with it the surplus of water.

Dec. 2, 1921, 45, No. 35

\*Rupture of Heart. A. Lemierre and R. Piédelièvre.—p. 1577.

\*Paget's Disease of Bones. Babonneix, Denoyelle and Périssou.—p. 1579.

Idem. Galliard.—p. 1583.

\*Shape of Interlobar Fissure. E. Rist and P. Ameuille.—p. 1583.

\*Plexiform Neuroma. Crouzon, H. Bouttier and R. Mathieu.—p. 1591.

Case of Facial Trophoneurosis. A. Léri.—p. 1594.

\*Diphtheric Paralysis in Adults. P. Marie and R. Mathieu.—p. 1600.

Idem. V. de Lavergne and Zoeller.—p. 1610.

**Spontaneous Rupture of the Heart.**—The laboring man of 52 had complained of pain in the epigastrium for five days, and there had been a little fever and chills, with sweats, but he had kept at work for the first day. He seemed to be improving, when death suddenly ensued. Necropsy showed a rupture of the left ventricle but no signs of hypertrophy of the heart or sclerosis of the kidneys, and the blood pressure was not high.

**Paget's Disease of the Bones.**—In a case described in an aged woman the incomplete picture of Paget's disease of the bones was of syphilitic origin, "as always." Galliard and also de Massary ascribe to Paget's disease a few other cases in which the disease was restricted to one femur or to one tibia, or the tibia and fibula in one leg.

**Change in Shape of Interlobar Fissure in Pulmonary Tuberculosis.**—Rist and Ameuille present evidence that the interlobar fissure is drawn out of shape sometimes by a tuberculous process in the lung. This tendency seems to be most pronounced when the tuberculous lesion is more of the sclerosis type. Their roentgenograms show the displacement, and they explain how to interpret it. Roentgenoscopy from the side is most instructive. A tuberculous focus at first is generally restricted to a single lobe of the lung, while a pneumococcus lesion frequently straddles the interlobar fissure. A tuberculous focus restricted to a small area often runs an abortive or attenuated course. When clinical symptoms are pronounced, the whole lobe will generally be found involved. They argue further that the initial tuberculous lesion in an adult is primarily of a pneumonia type.

**Plexiform Neuroma.**—The illustration shows the lumbar, buttocks and thigh regions the site of huge confluent tumors in the young woman. Besides these plexiform neuromas, there are neurofibromas and pigmented nevi completing the picture of Recklinghausen's disease.

**Paralysis of Diphtheric Origin in Adults.**—In the two men, 18 and 34, the paralysis seemed to be of a spinal type, and there was disturbance in speech, swallowing and accommodation, in addition to the partial impotence of arms and legs. Diphtheric paralysis in adults is rare. There have never been more than two or three cases a year in Marie's service at the Salpêtrière, but he had four cases in a recent fortnight. In the discussion that followed, Ramond stated that paralysis developed in 18 per cent. of the soldiers affected during an epidemic of diphtheria in one regiment until the practice was adopted of injecting 5 or 10 c.c. of the antitoxin intraspinally, as a supplementary measure. Marie and Mathieu are inclined to believe that the diphtheria toxin may induce merely peripheral neuritis but, when very virulent, its action is felt by the spinal cord also.



**Diphtheric Paralysis in Adults.**—The cerebrospinal fluid of 6 out of 11 men with diphtheric paralysis contained no toxin or antitoxin although antitoxin was present in the blood. In the one case of grave and persisting paralysis, no antitoxin could be found in the blood the third month. The Schick test was negative in 8 of the 11 cases.

Dec. 9, 1921, 45, No. 36

Cartilaginous Nodule in Sixth Cervical Vertebra. A. Léri and M. Laurent.—p. 1617.

Atypical Adipose-Genital Syndrome. Babonneix and Denoyelle.—p. 1619.

\*Significance of Gallop Sounds. C. Laubry and A. Mougeot.—p. 1623.

\*Case of Splenopneumonia. G. Caussade and P. Deberdt.—p. 1635.

\*Diagnostic Significance of Parkinsonism. J. A. Sicard.—p. 1647.

\*Plague at Paris. E. Joltrain and L. de Gennes.—p. 1653.

**The Gallop Sound.**—The data analyzed by Laubry and Mougeot apparently demonstrate that the mesodiastolic and protodiastolic gallop sounds are the result of atony of the ventricle. There is always some loss of conductivity and shortening of the diastole. When this is due to grave intoxication, as in uremia and asphyxia, the prognosis is grave, but with transient toxic action, heart tonics may tide the patient past the danger point. They advocate strophanthus in particular for this. Digitalis is indicated with the diastolic gallop and irregular rhythm. Under other conditions, ouabain is their main reliance; its beneficial action, the possible disappearance or transformation of the diastolic gallop under its influence, suggest new and more favorable elements for the prognosis.

**Encysted Pleurisy.**—Caussade and Deberdt explain retrospectively the case illustrated as splenopneumonia masking completely an encysted pleurisy in the middle of the horizontal fissure of the right lung of the young man. The tuberculous nature of the case is dubious.

**Parkinsonism in Retrospective Diagnosis.**—Sicard regards the development of parkinsonian symptoms as the Ariadne's thread which can guide us through the maze of symptoms for which abortive or abnormal forms of epidemic encephalitis may be responsible. He calls the latter *névrauxite épidémique*, and states that parkinsonism was pronounced in twenty-two of his sixty cases, although it developed late; in one case not until fifteen months after apparent recovery from the epidemic encephalitis.

**Plague at Paris.**—Joltrain and de Gennes relate that the recent discovery of plague infected rats at Paris, and a few isolated clinical cases of plague during the summer testify that the infection is not extinct. In the first of the three cases described, a man had been sent to the hospital with the diagnosis of strangulated inguinal hernia; in the other cases the acute symptoms first suggested typhoid or pneumonia until the discovery of buboes in groin or axilla cleared up the diagnosis in the case. In all, plague bacilli were found in the blood, and the septicemia proved fatal in from two to seven days after the first symptoms, notwithstanding early and intensive antiserum treatment. A total of ten cases were reported in Paris this summer, with five deaths, and there were a few cases at Marseilles. In conclusion they quote some city ordinances at Paris regarding the plague. One, dated 1510, ordered that a bundle of straw should be hung out of a window of a house where there had been a case of plague, and the straw kept there for two months afterward. In 1544, public gatherings were forbidden on account of danger of plague, and in 1563 closed carts to collect household refuse were sent through the streets twice a day.

Dec. 16, 1921, 45, No. 37

\*Therapeutic Pneumoserosa. P. E. Weil and Loiseleur.—p. 1661.

Appendicular Vagotonia. E. Enriquez et al.—p. 1669.

Epidemic Encephalitis. A. Gosset and R. A. Gutmann.—p. 1674.

A New Calcium Salt. L. Gaucher.—p. 1677.

**Injection of Air in Treatment of Tuberculous Peritonitis.**—Weil and Loiseleur report 3 failures and 3 apparently complete cures in 6 cases of tuberculous peritonitis treated by injection of air. They call the procedure pneumoserosa, to distinguish it from pneumothorax; the technic of the two are practically the same. The tendency to ascites was cured in all but one of the 6 cases. The failures were explained by tuberculous lesions elsewhere. The 3 successful cases have been followed for years and the cure was so complete that there

were no adhesions left. This is a special advantage of this pneumoserosa technic applied to either pleura or peritoneum. As soon as the fever has subsided and there is no further ascites, heliotherapy should be applied to supplement the pneumoserosa. They advise not to inject air to more than half the amount of the fluid withdrawn. In their cases they repeated the injection of air three or five times. After the ascites has disappeared, the injection of air causes discomfort, and the ultimate outcome was equally good in the case in which only one injection had been made. The dread of the operation and the slight pain from it seem to contraindicate the pneumoserosa for children. They had to abandon this treatment in the few cases in children in which they had attempted it.

Dec. 23, 1921, 45, No. 38

\*Bronzed Diabetes. P. Lereboullet and J. Mouzon.—p. 1681.

\*Bronzed Cirrhosis. C. Achard and A. Leblanc.—p. 1689.

\*Deviation of Trachea and Esophagus in Pulmonary Tuberculosis. P.

Armand-Delille et al.—p. 1695; p. 1705, and 1707.

Corneal Arc in Syphilis. M. Pinard and Deglaire.—p. 1710.

\*Influence of Movements on Tremor. G. Guillaud and G. Laroche.—p. 1712.

Hypertrophic Osteo-Arthropathy. Apert and Bigot.—p. 1715.

Hereditary Craniofacial Dysostosis. Idem.—p. 1717.

**Bronzed Diabetes.**—In a case of pigmented cirrhosis of the liver, diabetes developed and proved fatal in three and a half months. The bronzing and enlargement of the liver had preceded the diabetes by four years.

**Bronzed Cirrhosis of the Liver.**—Achard and Leblanc report a similar case, in a baker, 55 years old, with the exception that diabetes did not develop and that the liver showed further an adenocarcinoma. The constant element in such cases is the lesion of the liver. The bronzing and glycosuria are occasional elements.

**Displacement of the Trachea with Pulmonary Tuberculosis.**—In ten of 300 patients with chronic tuberculous processes in the lungs, the shriveling of tissue and other causes had pulled or pushed the trachea so far to one side that it was liable to be mistaken for a cavity. The esophagus and heart are generally misplaced likewise. Palpation shows the displacement of the trachea; in extreme cases the tip of the finger can be worked down to the spine. Induced pneumothorax was responsible for the displacement of the trachea in one of the cases. Laubry and Bloch report a case in which the displaced trachea was mistaken for a large cavity, and the return of conditions to normal under treatment for syphilis confirmed the syphilitic nature of the process. In another case, the shriveling of the lung had drawn the trachea out of place, and it had been mistaken for a cavity, and an artificial pneumothorax had been induced when, in reality, any further treatment of the cured lesion was unnecessary.

**Influence of Movements on Parkinsonism Tremor.**—Guillaud and Laroche report a case of unilateral tremor in a woman of 56 who has never shown any signs of epidemic encephalitis. In repose the tremor is so intense that any use of the hand seems out of the question, but during voluntary movements the tremor is suspended. She can play the piano, render a Brahms rhapsody, crochet, and thread a needle without interference from the tremor. There are occasional pains in the arm, and they remark that pain as an element in the clinical picture of Parkinson's disease is more common than generally recognized.

## Médecine, Paris

December, 1921, 3, No. 3

\*Hygiene and Infectious Diseases in 1921. L. Tanon.—p. 165.

\*Vaccination Against Cholera. A. Besredka.—p. 180.

Prophylaxis and Disinfection. F. Bordas.—p. 186.

\*Anaphylactic Shock in Infections. F. Arloing and A. Dufourt.—p. 190.

Myorhythmic Form of Epidemic Encephalitis. R. Cruchet.—p. 197.

Occupational Dermatoses from Petroleum. E. Gaujoux.—p. 200.

Intermediate Hosts of Parasites of Man. Neveu-Lemaire.—p. 204.

Experimental Dysentery. H. Violle.—p. 209.

\*Prandial Defecation. H. Cambessédès.—p. 212.

Importance of Expression of Face in Diagnosis. A. Pouget.—p. 216.

Present Status of Treatment of Acute Poliomyelitis. J. Pignot.—p. 221.

\*Prophylactic Treatment of Pre-Chancere Syphilis. A. Tzank and H. Cambessédès.—p. 227.

Diagnosis of Plague from the Blood. Riquebourg.—p. 229.

Technic for Examination of Sputum. P. Piéchaud.—p. 230.

Albumin Reaction in Sputum. P. Aris.—p. 233.



**Hygiene and Infectious Diseases in 1921.**—Tanon mentions among the various publications of the year, Trillat's statement that conditions are more favorable for the vitality of bacteria on droplets in the air than in the best culture mediums. The surface which they cover is extensive, and this spraying of the suspension of bacteria is what occurs in speaking and coughing. Wollmann has announced that flies bred in an aseptic environment do not pass pathogenic germs on from the larva to the adult fly. The treatment of diphtheria bacilli carriers with a jet of superheated air banished the diphtheria bacilli from fifty carriers in one group last year. The course took from three to five weeks. He mentions that at every one of the weekly meetings of the Société des Hôpitaux de Paris through the year, some communications on epidemic encephalitis or its sequelae were presented. Not much progress has been realized in treatment; some extol the value of atropin, others of cicutin. A few cases of plague were encountered at Paris during the year, including one of plague endocarditis.

**Vaccination Against Cholera.**—Besredka credits Ferrán with the first attempts to vaccinate against cholera. The use of sensitized living cholera vibriones for the vaccine represents great progress, he thinks. Researches in his own laboratory have confirmed the harmlessness of the vibriones after sensitization; and the experiences with it in the Tokyo epidemic, as published in 1920, were conclusive. Besredka argues that anticholera immunity, like that of typhoid, is essentially local, that is, in the intestinal wall. He says that if this proves to be the case, as he surmises, it would be more rational to give the vaccine by the mouth.

**Shock Treatment of Infections.**—Arloing and Dufour reiterate that a sound heart is absolutely indispensable for protein or other shock treatment. Young children, the aged, insufficiency of the liver, unstable and exaggerated reactions as in asthma and tuberculosis, and extreme emotional instability—these all contraindicate or call for extra caution in the colloidoclasia or shock treatment. Péhu has reported the death under it of a child with infectious purpura. In experimental pyocyaneus infection, 80 to 88 per cent. of the guinea-pigs recovered under the protein therapy, while from 76 to 100 per cent. of the controls died. There is no regularity about the effect of shock treatment but, as a rule, the smaller the first injection, the more rapid the sensitization, and the longer the interval before the shock injection is made, the severer the shock.

**Warning Sign of Diarrhea in Infants.**—Cambessédès has often noted in both infants and adults that a stool following at once after feeding testified to some irritation in the bowel, and symptoms of enteritis often followed. Postprandial defecation therefore calls for consideration.

**Abortive Treatment of Syphilis.**—This communication states that fifteen patients were given treatment at once or within two weeks after intercourse with a person known to have syphilis. Four injections of neo-arsphenamin were given, increasing from 0.15 to 0.6, with intervals of three, four and five days. Not one has developed any symptoms during the year since, reexamined every three months.

### Paris Médical

Dec. 3, 1921, 11, No. 49

\*Therapeutics in 1921. F. Rathery.—p. 425.

\*Quinidin in Auricular Fibrillation. A. Clerc and Pezzi.—p. 440.

The Colloidal Shock. A. Lumière.—p. 445.

\*Diathermy in Treatment of the Stomach. H. Bordier.—p. 450.

\*Eserin in Internal Therapeutics. F. Moutier.—p. 453.

**Therapeutics in 1921.**—The majority of the publications to which Rathery refers have been summarized in these columns as they appeared, or they appeared originally in THE JOURNAL. Methods for antianaphylaxis and desensitization, vaccines and quinidin have been the leading topics of the year, along with measures to reduce the toxic action of the arsenicals.

**Quinidin in Auricular Fibrillation.**—Clerc and Pezzi give quinidin sulphate in the dose of 0.2 gm. by the mouth the first day; then 0.4 gm. twice the second day. If this is borne well, they increase to 0.8 or even 1.2 gm. during the day, fractioned in 0.2 to 0.3 doses. This can be kept up for

five or eight days. This medication is not effectual in about half the cases; the recent cases and those with slight valvular lesions seem to respond to it best. As the drug has a paralyzing influence on the myocardium, in case of asystolia it is wise to precede it with a preparatory course of digitalis. They warn that dissociation between the auricle and ventricle contraindicates quinidin. The urine may grow scantier, and edema and dyspnea reappear during the quinidin treatment, which is not surprising as we know that the effect of quinidin is along the paralyzing line. Frey and Haas have reported severe symptoms in two and three cases after taking the quinidin, loss of consciousness, cyanosis and arrest of respiration, all yielding to stimulants. In the two fatal cases that have been published, the gravity of the insufficiency of the myocardium, rather than the drug, seems to have been responsible.

**Diathermy in Stomach Affections.**—Bordier comments on the constant and uniform stimulating action of diathermy on the chemical and motor functioning of the stomach in chronic gastritis, with either excessive or deficient acidity.

**Physostigmin in Internal Medicine.**—Moutier's experience with eserin in 120 cases has convinced him that this drug is the specific treatment for sympatheticotonia, just as atropin is the treatment for vagotonia. It acts on malaise but not on pain. It is most effectual in tachycardia, epigastric palpitation, discomfort after a meal, vertigo, nausea, in certain cases of migraine, of high blood pressure, and above all in what he calls solar plexus crises. He gives the drug by the mouth, before meals. From 30 to 80 or 100 drops a day of a mixture of 1 cg. of neutral eserin salicylate with 3.5 c.c. of glycerin (28 degrees); 1.5 c.c. of distilled water and alcohol enough to make 10 c.c. Fifty drops of this mixture equal 1 mg. of the alkaloid. A colored bottle should be used for it. There does not seem to be any cumulative action from the eserin; some of his patients have taken it for months without interruption. The sulphate can be used instead of the salicylate. Signs of intolerance are lassitude, a sensation of stiffness of the spine and neck, asthenia, dizziness and a little nausea. He has never noted intolerance except on three or four occasions, and there never was vomiting or diarrhea. Atropin is the natural antidote to eserin.

Dec. 10, 1921, 11, No. 50

\*Ulceration with Cyanotic Edges. H. Gougerot.—p. 457.

\*Nitritoid Crises and Anaphylaxis. E. Girbal.—p. 464.

Gangrene of Lung Arrested by Arsenical and Cured by Serotherapy. M. Perrin.—p. 466.

**Ulceration with Cyanotic Edges.**—Gougerot calls attention to the bad prognosis of ulcerations when the edges are cyanotic and purpuric. In the type with cyanotic ecthyma, disinfection is required, and in the type with necrosis from obliterating capillaritis, the aim should be mainly to ward off secondary infection, promote active circulation through the region, and treat the general cause for the ulceration.

**Toxic Effects of the Arsphenamins.**—Girbal thinks that we must discriminate between the nitritoid crises and the symptoms for which anaphylaxis is responsible in estimating the by-effects of arsphenamin treatment. The most practical method of warding off the anaphylaxis element is, he says, by injecting a small amount of the solution a few hours before the whole amount is injected.

### Presse Médicale, Paris

Dec. 21, 1921, 29, No. 102

\*Secondary Infections in Typhoid. A. Rodet and S. Bonnamour.—p. 1009.

**Secondary Infections in Typhoid.**—Rodet and Bonnamour were surprised at the numbers of cases of typhoid in their service at Lyons in which secondary infection was found. It modified the clinical picture and the reaction to serotherapy. Of the five with the enterococcus or streptococcus in the blood, four died and two of the eight with the staphylococcus or tetragenus, and the course in those who recovered was exceptionally long, with many complications. These and other cases testified to the direful action of secondary infection in typhoid, and explain the resistance to serotherapy. The necropsy findings suggested that only the lesions in the



small intestine are the work of the typhoid; for the ulcerations in cecum, colon and rectum, superposed infection seems to be responsible.

Dec. 24, 1921, **29**, No. 103

- \*Hemoclasia in Paroxysmal Hemoglobinuria. M. Montagnani.—p. 1017.  
\*Scalp Flaps in Reconstruction of Face. P. Moure.—p. 1021.  
Combined Riva-Rocci and Pachon Sphygmograph. A. Dubus.—p. 1022.  
Cicutin in Therapeutics. L. Cheinisse.—p. 1023.

**Paroxysmal Hemoglobinuria.**—Among the points emphasized by Montagnani in his study of a typical case in a woman of 27, are the connection with syphilis; the improvement under specific treatment; the paroxysmal destruction of the erythrocytes within the vessels under the action of sudden chilling alone, and the chill, malaise, pains in joints, rapid drop in blood pressure, extreme leukopenia and change in the coagulation process—all phenomena testifying to anaphylaxis. In fact, he adds, the autoanaphylactic phenomena precede the hemolytic.

**Plastic Operations on the Face with Scalp Flap.**—The special feature of Moure's scalp flap is that it is cut very long, extending from the ear far past the median line. When twisted around to reconstruct the side of the chin, for instance, the flap thus has a very long and broad pedicle. This insures its nourishment until healing is complete. Then the pedicle can be severed close to its suture to the skin, and the pedicle can be replaced in its natural bed on the scalp. This bed is kept covered with an oil compress as long as it is kept open. The article is illustrated.

Dec. 28, 1921, **29**, No. 104.

- \*Cystic Disease of Bartholin's Gland. Bérard and Dunet.—p. 1029.  
\*Fever in Syphilis. M. Chiray and A. Coury.—p. 1031.

**Cystic Disease of Bartholin's Gland.**—Bérard and Dunet describe a case of a benign cystic tumor in Bartholin's gland, analogous in every respect to cystic disease of the mammary gland.

**Syphilitic Fever.**—Chiray and Coury comment on the frequent exceptions to the rule that syphilis runs its entire course without fever. They add that both arsenic and mercury tend to reduce the temperature of the body. Fever during neo-arsphenamin treatment has never been observed, they say, except in the syphilitic or with trypanosomiasis, and a meningeal reaction to this drug is common in the syphilitic and is never noted in nonsyphilitics. Nearly every one presenting the so-called reinjection fever shows signs otherwise of neurosyphilis. The fever should not be labeled toxic under these conditions; it is more a focal reactivation phenomenon. The experiences related confirm anew that syphilis at any stage may develop fever.

### Progrès Médical, Paris

Oct. 1, 1921, **36**, No. 40

- \*Nuclein and Arsenic in General Paresis. P. Pregowski (Warsaw).—p. 461.  
\*Varices. Delbet.—p. 463.

**Nuclein and Arsenic in Treatment of General Paresis.**—Pregowski reports four years of this treatment in a total of 111 patients with general paresis. Of the 63 treated by 15 subcutaneous injections of nuclein, 27 per cent. seemed to improve, as also from 12 to 60 per cent. of those treated with arsenic in some form; 4 died in the nuclein group and 6 in the arsenic group.

**Varices.**—Delbet is inclined to believe that the tendency to varices develops early although they may not attract attention until middle life. The incompetency of the valves is primary, and for about fourteen years there is no varicose enlargement except toward night. The nourishment of the walls suffers at last, and they stretch. When the limb is raised to expel the blood, there is a depression instead of the former protrusion of the vein; the walls are so flabby they sink in from the atmospheric pressure when emptied of blood. Under a constricting band applied, reclining, to the thigh, not tight enough to arrest the arterial blood, the veins do not enlarge again as the subject stands. The valves then permit the passage of the blood from the superficial into the deep veins, the constriction, and likewise muscular exercise, favoring this. Hence walking has a favorable influence on varicose

veins. The walls of the veins may retain their elasticity for a time after the valves have become incompetent, and a varicose ulcer may develop before the veins show signs of stretching. The ulcer improves when the subject reclines, with his leg raised. Treatment of the tendency to varices should be applied during this occult stage of the varices, before chronic edema, etc., have become installed.

Oct. 15, 1921, **36**, No. 42

- \*Functional Signs of Pulmonary Tuberculosis. E. Sergent.—p. 483.  
Medicolegal Aspect of Crimes Against Decency. Laignel-Lavastine.—p. 486.

**The Functional Signs of Pulmonary Tuberculosis.**—Sergent refers to adults alone, and recalls that pain on pressure of the apex region is instructive, and above all, pain on pressure of the inner portion of the supraspinous fossa, especially when unilateral. Neuritis of the phrenic nerve, a painful point in the epigastrium from displacement of the lower ribs by emphysema, and mydriasis on the diseased side, are all instructive signs of tuberculosis. The mydriasis with incipient tuberculosis may be latent, but it may be induced artificially. As the disease progressed, he found that the mydriasis yielded to myosis as the nerve fibers became paralyzed. Unrecognized whooping cough and hyperthyroidism may be mistaken for tuberculosis, and hematemesis for hemoptysis. A menstrual hemoptysis is by no means always symptomatic of congestion in a tuberculous lesion. One healthy nurse wounded in the lung by a scrap of shell had vicarious hemorrhage from the lungs each month and none from the uterus. Hemoptysis from high blood pressure alone was mistaken for tuberculosis in several cases, and the subjects sent to a mountain climate which merely aggravated their hypertension. On return to sea level, with proper treatment, there was no further hemoptysis. The dyspnea in tuberculosis seems to be proportional to the degree of toxic action rather than to the extent of the lesions. The dyspnea may be latent, but may be rendered manifest by tests of respiratory function under roentgenoscopic control or spirometry. The resistance of the heart to effort is instructive, but it has to be estimated with an eye to the respiratory capacity, or it may prove misleading.

Nov. 12, 1921, **36**, No. 46

- Radium Treatment of Vascular Nevi. S. Laborde.—p. 531.  
Neurofibromatosis. Sainton.—p. 533.  
\*Umbilical Discoloration with Internal Hemorrhage. Chifoliau.—p. 534.

**Umbilical Ecchymosis with Intra-Abdominal Hemorrhage.**—Chifoliau reports two cases in which discoloration of the navel region was observed in connection with extravasation of blood in the abdomen. In one of the women it accompanied an encysted retro-uterine hematoma from rupture of the tube. There had been metrorrhagia for three weeks although menstruation had been regular, and there had been no sharp pain. The other patient was a woman of 54 with torsion of an ovarian cyst, with some blood in the cyst and abdominal cavity.

Nov. 19, 1921, **36**, No. 47

- \*True and False Pigmented Syphilids in Neck. Gougerot.—p. 541.  
Device to Locate Foreign Bodies. G. Paturet.—p. 543.  
\*The Surgical Menopause. Dalché.—p. 545.

**Pigmented Syphilids in the Neck.**—Gougerot insists that the conditions in the neck which resemble pigmented syphilids are not always due to syphilis. A patch of keratosis, for instance, may keep the skin from tanning, and as the keratosis subsides a whitish or brownish area is left.

**The Surgical Menopause.**—Dalché emphasizes the difference in the symptoms that follow castration, according to the age. In young women, castration entails atrophy of the vulva, uterus and nipples, and the sudden surgical menopause reduces the resisting forces of other organs. In one girl of 18, there was headache after the castration; he ascribes this to congestion in the pituitary in connection with ovarian disturbance. Another developed symptoms suggesting suprarenal insufficiency. He has noted that the symptoms of the menopause are liable to return at the age of the natural menopause, or hyperthyroidism may develop, but they are liable to be ascribed to a nervous origin. He cites examples from his own practice of symptoms from liver, stomach, heart, aorta, etc., which he ascribes to the function-depressing influence of the castration, and which right themselves spontaneously in



time. Valvular and other disturbances at the menopause need not always be taken very seriously. After surgical castration, general hygiene should be enforced with special care, and organotherapy given as indicated.

### Revue Franç. de Gynécologie et d'Obstét., Paris

November, 1921, 16, No. 11

- Torsion of Large Hydrosalpinx. J. Mouchotte and A. Perrilliat.—p. 577.  
\*Uterine Myomas. E. Essen-Moeller.—p. 594.  
Is the Surgical Era Closed in Gynecology? L. M. Pierra.—p. 597.

**Experiences with Uterine Myomas.**—This is a summary review of the uterine myomas treated between 1899 and 1921 at the women's clinic of the university of Lund. Of the total 1,633 cases, operative measures were applied in 700. There was malignant degeneration after the operation in 22 cases, including 14 in which no signs of cancer had been discovered at the operation. No reduction of the myoma was noted in 20 of the 103 cases treated with radium, but in 50 the uterus returned to normal size under it, and in 10 others nearly to this. In 32 of the total cases the ultimate outcome is not known.

### Revue de Médecine, Paris

July, 1921, 38, No. 7-8

- \*Serodiagnosis of Plague. E. Joltrain.—p. 383.  
Vascular Hypertension. C. Trunczek (Prague).—p. 403. Cont'n.

**Serodiagnosis of Plague.**—Joltrain expatiates on the value of the fixation of complement test for the detection of abortive and ambulant cases of plague, as well as in cases with an abnormally protracted course of the disease.

### Schweizer Archiv f. Neurol. u. Psychiatrie, Zurich

1921, 9, No. 1

- Regeneration in the Nervous System. E. Hedinger.—p. 3.  
\*Clinical and Anatomic Study of Apraxia. R. Brun.—p. 29.  
\*Pathogenesis of Tabes. H. Richter.—p. 65.  
Study of Sense Perceptions. H. Doebeli.—p. 75.  
\*Electrodiagnosis of Tetany. P. Farbargue-Vail.—p. 91.  
\*Adiposis Dolorosa. F. Kaufmann.—p. 108.  
Lethargic Encephalitis. L. Redalié.—p. 125.

**Apraxia.**—Brun relates that the Zurich institute for study of the brain contains serial sections of twelve apraxia brains, and of a number of other brains showing apparently identical conditions but there had been no or briefly transient symptoms of apraxia during life. He compares this material with clinical cases of apraxia. The article, which is in German, is to be continued.

**Pathogenesis of Tabes.**—Richter describes (in French) the primary settling of the spirochetes in the poorly vascularized sheath of the root of the spinal nerve. The tissues react with granulation to the irritation from the spirochetes, and the nerve suffers from the formation of this pathologic tissue, the lesions in the nerve always corresponding to these granulous elements.

**Electrodiagnosis in Tetany.**—Vail declares that decalcification, rachitis, tuberculosis, osteomalacia and senile changes do not modify the formula of the electric excitability of nerves in the tetany sense. It is absolutely pathognomonic of tetany.

**Adiposis Dolorosa.**—Kaufmann reports a case in a neuropathic woman and a second case in which a tendency to obesity could be traced in the female line for three generations. The adiposis was more diffuse in the first case, beginning at 19. In both cases the pains were not spontaneous, but occurred only on deep pressure of the fatty swellings. General weakness of body and of mental impressions became evident in both in the course of the disease. A hemorrhagic tendency was also manifest. General improvement followed thyroid treatment, but the essential adiposis dolorosa did not seem to be modified by it.

### Schweizerische medizinische Wochenschrift, Basel

Nov. 24, 1921, 51, No. 47

- \*Roentgen-Ray Treatment in Internal Medicine. M. Lüdin.—p. 1081.  
\*Pregnancy After Roentgen Exposures of Uterus. M. Steiger.—p. 1084.  
\*Pernicious Anemia Not An Independent Disease. I. Zadek.—p. 1087.  
\*Tests of Gastric Functioning. J. Custer.—p. 1091. Conc'n No. 48, p. 1115.

**Roentgen-Ray Treatment in Internal Medicine.**—Lüdin has had opportunity to apply roentgen exposures in 600 nonsur-

gical cases. The effect was amazingly good in the 6 cases of erysipelas. In each case the fever promptly subsided and the erysipelas ceased to spread and soon disappeared. With inoperable internal cancer, he obtained results with no recurrence for up to two years to date only with malignant goiter, sarcoma of the tonsils, and in one case of a retronasal tumor. A favorable influence was evident in certain cases of exophthalmic goiter; the earning capacity was restored even though some of the symptoms persisted. In 5 cases requiring operative measures later, tough adhesions were found in 2, but no adhesions in the others. Tuberculous peritonitis responded very favorably; roentgenotherapy is an excellent means of treating this form of tuberculosis, with or without ascites. Preliminary tapping is not necessary. Active pulmonary tuberculosis is a contraindication; all died of the 7 with this complication. The outcome was negative or an aggravation in pernicious anemia, chlorosis, pulmonary tuberculosis, Banti's disease, acute myeloid leukemia, chloroma and myeloma. Excellent results were obtained in chronic myeloid leukemia, persisting up to four years, with earning capacity restored; also, to a lesser degree, in chronic lymphatic leukemia. Necropsy in some cases of malignant granuloma confirmed the complete cure of the rayed lesions. By systematic exposures of all the foci from which the lymphogranuloma tissue may proliferate, it may be possible to eradicate the disease entirely; he has now made it the routine practice to apply the rays not only to the enlarged glands but to all the glands.

**Pregnancy After Roentgen Exposures.**—Steiger's verdict from the evidence presented by the literature and his own experience is that with a single exposure, even with a dose large enough to bring amenorrhea, no injury need be apprehended on the ovum developing later from a follicle that has escaped the action of the rays. No injury need be apprehended if the exposure is made toward the end of a pregnancy, but there are grounds for fearing malformations in the fetus if conception has already occurred at the time of an intensive exposure.

**The Blood Findings During Remissions of Pernicious Anemia.**—Zadek trephined the tibia and scooped out a little of the marrow under local anesthesia, plus a whiff or two of ethyl chlorid. This procedure, repeated on eight patients with pernicious anemia, showed practically normal conditions in the bone marrow during periods of remission of the symptoms. The blood picture varied in the same way. This testifies, he asserts, that pernicious anemia is not a specific primary disease of the bone marrow, but is merely the effect of the action of some toxin, and fluctuates with the varying intensity of the toxic action.

**Investigation of Conditions in the Stomach Without the Stomach Tube.**—Custer deplors that so little use is made of the tests of stomach functioning which do not require the stomach tube. The general practitioner misses very valuable aid in estimation of stomach disturbances when he neglects these functional tests. Since 1905, Custer has been applying systematically the methylene blue, the iodoform and the salol tests, in addition to the desmoid test, under roentgen and clinical control, and expatiates here on the light they throw on the secretory and motor functioning of the stomach as the blue and the salol appear in the urine afterward. A pill of 0.05 gm. methylene blue, weighted with a little bismuth, is taken at the beginning of dinner. The dissolved 1 gm. of salol is sipped throughout the dinner. Its appearance in the urine is heralded by a violet tint when ferric chlorid solution is dropped in. He gives minute details of the tests and interpretation of the findings.

Dec. 1, 1921, 51, No. 48

- \*Biology of Syphilis. Dind.—p. 1105.  
Action of Carbonated Baths at St. Moritz. G. Liljestrand and R. Magnus.—p. 1109.  
Erythema Nodosum and Tuberculosis. Demiéville.—p. 1110.  
Pathogenesis of Malignant Syphilis. M. Umansky.—p. 1112.

**Biology of Syphilis.**—Dind points to the variable length of the period of incubation, the fact that there are absolutely no symptoms during this phase, and the fact of the extremely rapid development of the chancre to its full and stationary state. These and other data cited confirm, he says, that the



chancre is not the work of the parasites, but is the allergic reaction to the invasion of the spirochetes. The larger the chancre, the more pronounced the skin lesions, the stronger the defensive reaction, and hence the milder the course of the syphilis. It has always been his experience that the graver cases of syphilis were those with small chancres and few manifestations in the skin. The gravity of neurosyphilis may be due to the fact that the organic defense in the nervous system is inferior to that which the skin can offer.

Dec. 15, 1921, 51, No. 50

\*The Goiter Question. G. Hotz.—p. 1153.

Adaptation of Parasites. III. B. Galli-Valerio.—p. 1155.

\*Tuberculous Myocarditis. R. Massini.—p. 1156.

\*Idem. W. Lüscher.—p. 1158.

**The Goiter Question.**—Hotz knows of goiter families in which some of the children are of the cretin type and others of the exophthalmic goiter type, and the thyroid in all shows apparently identical pathologic anatomic changes. This testifies, he says, that cretin degeneration may be a consequence of excessive thyroid function. It is evidence that the functioning is perverted. Removal of the thyroid and ligation of the larger arteries improved conditions in the cretin children as well as in the exophthalmic goiter children.

**Tuberculous Myocarditis.**—Massini found tubercle bacilli in the myocardium of a woman of 68 who had exhibited symptoms of chronic myocarditis for some time, but never anything to suggest tuberculosis in any form otherwise, not even at necropsy. Lüscher found evidences of tuberculous myocarditis in the cadaver of a man of 30 and woman of 45, and guinea-pigs inoculated from these hearts not only developed tuberculosis but showed signs of slight myocarditis as if some special heart-attacking strain was involved. In the male cadaver no manifestations of tuberculosis could be discovered outside of the heart.

Dec. 29, 1921, 51, No. 52

\*Gallstone Disease. L. Michaud.—p. 1201.

\*Surgery of Biliary Passages. G. Hotz.—p. 1214. Idem. K. Henschen. p. 1222.

History of Idem. E. Veillon.—p. 1240.

Electric Accidents. H. Jaeger.—p. 1250.

Antethoracic Artificial Esophagus. Fonio.—p. 1261.

Autograft After Resection of Humerus. A. Jentzer.—p. 1261.

Malformations of Patella. W. Odermatt.—p. 1263.

Latent Bilateral Pleural Empyema. R. Schweizer.—p. 1264.

Fracture of Humerus. H. Paschoud.—p. 1265.

Huge Ovarian Cysts. E. Baumann.—p. 1272.

**Gallstone Disease.**—Michaud, as professor of clinical medicine, was asked to address the recent Swiss surgical congress on cholelithiasis from the internist standpoint. He declares that the gallstones are only one symptom and often not the most important symptom of cholelithiasis. In his service at Lausanne the cholesterol content of the blood was found abnormally high in many cases of cholelithiasis, jaundice and chronic nephritis, but it was also found high in many other conditions, in arteriosclerosis, chronic myocarditis, etc., and cannot be depended on even to distinguish between a gastric ulcer and gallstone disturbance. He presents evidence to sustain the assumption that the liver is the source of the secretion of the cholesterol in the blood. Hypercholesterinemia is an adjuvant factor in production of gallstones, but other multiple conditions are involved besides this and besides infection, stagnation of bile, and inflammation, although these are the main factors. Tests of liver functioning must therefore aim to show the status of the different functions of the liver involved; knowledge of its "global functional capacity" is not very instructive. Fibrin, a product of inflammation, is an irreversible colloid. The calculi from inflammation will thus contain irreversible colloids, and hence it is problematic whether any measures will be able to dissolve such concretions. There is evidence on hand, however, of arrosion of the surface of certain gallstones, and resorption of the dissolved fragments. Hence combating inflammation aids in warding off production of insoluble gallstones, and in rendering conditions more favorable for resorption, if this is possible, which many with the largest experience still deny. A mixed diet is the best of all cholagogues, he adds, and this is possible even with foods tending to check production of cholesterol (fatless meat, skimmed milk, cereals, green vege-

tables and fruits). The clinical and empiric benefit from a course of Vichy or Karlsbad waters at the spa or at home is well established, but science cannot explain their mode of action. Our aim is to reduce stasis, infection and hypercholesterinemia, and tranquilize the gallbladder, not to expel the gallstones. Operative treatment is indicated in the acute and chronic cases rebellious to internal measures.

**Surgery of the Biliary Passages.**—Hotz' charts show the outcome in 1,856 operations for cholecystitis or cholelithiasis in the last ten years by forty-two Swiss surgeons, with 192 for tumors or other causes. His conclusions are all in favor of early operating, without wasting too much time on internal measures in otherwise healthy persons, especially the young. After 40 the chances for a successful operation grow less. Henschen emphasizes the recent trend to early operating, refraining from draining, and the increasing preponderance of cholecystectomies over conservative operations. He discusses the diagnosis from the functional, bacteriologic and radiologic standpoints, with a clinical and physiologic study of operative procedures. Five large plates accompany his article, showing the anatomy, etc., of the region. He says that he has never found any evidence of development of biliary cirrhosis of the liver after ectomy, but when the pancreas is involved, a cyst may develop in the pancreas. Hence, in these pancreas cases, drainage of the common bile duct may be exceptionally indicated to prevent this. Postoperative peritonitis from various causes was responsible for 58 of the total 199 deaths in the 1,856 cases studied; cholemic hemorrhage for 11, and heart failure in 30. For the latter, injury from the anesthetic; extreme drop in blood pressure during the operation from chilling of the abdomen or too brusque manipulation of the common bile duct or portal vein, were responsible, or else embolism in the right heart from pressure on the liver during the operation, or fat embolism in the heart vessels when fat tissue was crushed. Absorption from necrotic tissues or blood clots may induce death as also absorption of toxins from bacteria migrating into a focus of necrosis. The psychologic imponderables may likewise turn the scale. Among the prophylactic measures advocated is the prevention of harmful reflex action by procaining the hepatoduodenal ligament; control of the blood pressure while operating, and not allowing latent insufficiency of the heart to escape detection beforehand. Postoperative pneumonia was responsible for 28 of the 199 deaths. It is evident, he says, that direct migration of the bacteria through diaphragm and pleura is responsible in some cases. In others, septic, fat and parenchyma cells are evidently swept to the lungs by the blood. In 9.5 per cent. (11 cases) no cause could be discovered for the sudden death, but it is possible that an acidosis might have resulted from the sudden loss of alkali reserves. Sodium bicarbonate given systematically beforehand has seemed to ward this off in his experience.

### Annali d'Igiene, Rome

September, 1921, 31, No. 9

\*Microscopy in Epidemic Encephalitis. G. Volpino and G. Graziadei.—p. 533.

\*Isolation of Trypanosomes from Blood. L. Sani.—p. 536.

Metachromatic Granules of Diphtheria Bacillus. Racchiusa.—p. 545.

Tellurium and Selenium as Bactericides. A. Cavazzuti.—p. 551.

\*Reactions of Culture Mediums. V. Puntoni.—p. 555.

**Microscopic Findings in Epidemic Encephalitis.**—Volpino and Graziadei give a few illustrations of granulated bodies which they have found numerous close to the capillary walls in cases of epidemic encephalitis. They take stains differently from the natural bodies which they resemble, as they describe.

**Isolation of Trypanosomes from the Blood.**—Sani was unable to obtain the trypanosomes by physical or chemical procedures, in a state suitable for use as an antigen. He therefore inoculated dogs with the trypanosomes, and from their blood obtained trypanosomes, an antiserum, and erythrocytes for the hemolysis test.

**Adjusting the Reaction of Culture Mediums.**—Puntoni describes the various means for modifying the reactions of the mediums in bacteriology, and compares their efficacy, especially for the micro-organisms which are the most exigent.



**Archivio per le Scienze Mediche, Turin**

1921, 44, No. 1-2

Origin and Significance of Starchy Bodies Found in Nervous System. C. Gamna.—p. 1.

\*Cell Count in Wound Secretions. L. Torracca and M. Cotellessa.—p. 21.

\*Primary Carcinoma of Cystic Duct. G. Satta.—p. 32.

\*Histologic Findings in Frogs After Extirpation of Liver. V. Ronca.—p. 45.

\*Salivary Secretion at High Altitudes. A. Aggazzotti.—p. 60. Idem.—p. 84.

**Cell Count in Wound Secretions.**—As it is rare to encounter wounds healing by second intention in modern clinics, Torracca and Cotellessa give details of their research on ten guinea-pigs. The polynuclear leukocytes formed from 85 to 93 per cent. of the total at first, but gradually yielded to the mononuclears which finally formed from 16 to 27 per cent. both in the wounds healing naturally and those irrigated with Dakin's solution. In wounds exposed to sunlight, they reached 33 or 34 per cent. The bacteria did not disappear, ten or more micro-organisms being found in each microscopic field to the very last. They did not seem to interfere with the healing process, so they must have been more or less non-virulent.

**Primary Cancer of Cystic Duct.**—In the ten cases compiled by Satta, all the patients were women except two, including the case in a man of 44 which he describes here. In about 50 per cent. there was a history of gallstone colics. In his case the glands in the left supraclavicular fossa were enlarged, and there was no jaundice, but jaundice was pronounced in all the other cases on record except one.

**Histologic Changes After Extirpation of Liver.**—Ronca gives a plate of photomicrograms from the viscera, nervous system, etc. of frogs. The action of the toxins, which normally are neutralized by the liver, was least evident in the intestines and most pronounced in the kidneys.

**The Salivary Secretion at High Altitudes.**—In the first article Aggazzotti describes his findings in regard to the activity of secretion of saliva and its concentration during exercise in the mountains. In the second he discusses the viscosity and the reaction of mixed saliva under the same circumstances, and cites fifty-seven publications on the physiology of secretion at high altitudes.

**Pediatria, Naples**

Dec. 1, 1921, 29, No. 23

Cholesterin in Cerebrospinal Fluid. S. Fabris.—p. 1057.

Variations in Temperature of Infants' Skin. F. Fonzo.—p. 1065.

\*Myatonia Congenita with Inherited Syphilis. M. Flamini.—p. 1081.

**Congenital Myatonia.**—Flamini compares a case of Oppenheim's disease in a new-born syphilitic infant with the literature on the subject. Several photomicrograms show the important lesions in the cerebellum, brain and spinal cord.

**Policlinico, Rome**

Dec. 12, 1921, 28, No. 50

\*Technic for Exclusion of Pylorus. G. Caminiti-Vinci.—p. 1683.

\*Pancreatitis Consecutive to Gastric Ulcer. B. Masci.—p. 1685.

Atony of Laryngeal Muscle in Malaria. G. Pansini.—p. 1688.

Present Status of Treatment of Diabetes. G. Aiello.—p. 1689.

**Exclusion of Pylorus for Gastropyloric Cancer.**—Vinci confirms that, when gastrectomy is contraindicated, surprisingly good results may follow gastro-enterostomy plus exclusion of the pylorus. He extols Parlavecchio's method as the best for this, and relates that in five cases of gastropyloric cancer treated in this way, one woman of 63 survived in good health for nearly five years. Then the tumor began to cause symptoms again and she died five and a half years after the operation. The interval in two other cases is four years and fourteen months to date, and both patients are apparently in the best of health. The others have been lost track of. The pylorus is tied off with a piece of tape (*nastro*) 15 mm. wide, passed through small openings in the greater and lesser omentum to encircle the stomach above the mass of the tumor. The tape is drawn just tight enough to close the lumen without arresting the circulation. The ends are not tied together but are sutured with silk, and serosa and muscle are drawn up over it. The whole takes less than five minutes, and the latest roentgenograms confirm that the passage into the

pylorus is absolutely and permanently closed. In all his cases the cancer mass became progressively reduced in size thereafter.

**Pancreatitis Consecutive to Gastric Ulcer.**—A perforated duodenal ulcer had been sutured in the man of 29 but six months later he returned with a gastric ulcer which was treated by gastro-enterostomy and ligation of the pylorus with a strip of periosteum from the tibia. He returned to the hospital after a few years of clinical health presenting symptoms of acute pancreas insufficiency, and necropsy showed that the stomach ulcer had spread to involve the adjacent head of the pancreas, causing sclerosis in this limited region.

Nov. 1, 1921, 28, Medical Section No. 11

\*Temperature Sense and Trophic Lesions. P. Albertoni.—p. 457.

\*Tumors in Temporal Lobe. F. Costantini.—p. 468.

\*Parkinsonism. L. De Lisi.—p. 484.

**Temperature Sense, Etc., in Syringomyelia, Etc.**—Albertoni's research in Raynaud's disease has been supplemented by a similar study of syringomyelia, scleroderma and lateral amyotrophic sclerosis, as he describes here. His tests were made with heat and cold applied to different points in the skin, and compared with similar findings in the healthy.

**Tumors in the Temporal Lobe.**—Constantini concludes from two cases reported in detail that general symptoms occur early with a tumor in the temporal lobe, especially mental disturbances, which may vary widely from case to case. Not one of the focal symptoms is constant, and there may even be nothing to call attention to the temporal lobe as the seat of the process. The more important of the focal symptoms is aphasia in its various forms.

**Parkinsonism.**—De Lisi tabulates the details of ten cases of parkinsonism following epidemic encephalitis in recent years. The ages ranged from 13 to 39, and the parkinsonism had developed after a period of apparent convalescence. As autumn approached the parkinsonism became installed and has been slowly progressive or stationary since. Only one of the patients has shown any tendency to improvement of the condition. This is a young woman and there is now only a persisting diffuse rigidity. There is general tremor only in one of the ten cases but tremor of the tongue and catalepsy are common. The disturbances are strictly motor, not sensory, but sialorrhea is profuse.

Nov. 15, 1921, 28, Surgical Section No. 11

\*Hematuria with Hydronephrosis. G. Baggio.—p. 465.

\*Chronic Traumatic Hygroma. C. F. Bianchetti.—p. 485.

\*Mesentery Cyst. M. Novi.—p. 503.

\*Decompressive Craniectomy. B. Merlino.—p. 515.

**Hematuria in Hydronephrosis.**—Baggio's review of the literature and personal experience has shown that hematuria is by no means rare with hydronephrosis, and is readily explained by the hampering of the local circulation. It is not enough to draw the urine; the condition must be remedied to remove so far as possible the factors impeding the free flow of blood. The hematuria may precede, accompany or follow the hydronephrosis attack, and there may be a caput medusae. The obstacle to the circulation is generally, he thinks, to be sought in some compression or kinking of or traction on the renal veins, and this is not affected by mere nephrotomy.

**Traumatic Hygroma.**—Bianchetti discusses the clinical features, pathologic anatomy and treatment of chronic traumatic hygroma.

**Cyst in the Mesentery.**—Novi successfully removed the large cyst in the mesentery of the woman of 47. The diagnosis had been ovarian cyst. The stem of the cyst was as large as a thumb.

**Decompressive Craniectomy.**—Merlino expatiates on the advantages of Parlavecchio's technic which does not require an opening larger than 3 by 3 cm. A horse-shoe flap is first cut down to the bone and turned back toward the neck. A square gap is then cut in the skull, and through this a crucial incision is made in the dura. Each one of the four flaps resulting from the X incision is turned back over the edge of one side of the opening in the skull, and each flap is sutured to the pericranium around. This prevents irregular growth of bone at the edges of the gap, while the dura flaps can be replaced and sutured at any moment.



**Riforma Medica, Naples**Nov. 19, 1921, **37**, No. 47

- Malformation of Urethra and Testicle. L. Torraca.—p. 1093.  
 \*Cholesterin Content of Blood. C. Alessandri.—p. 1095.  
 Experiences with Wassermann Test. C. Martelli.—p. 1099.  
 \*Action of Lymph Gland Extract. A. Mazzarella.—p. 1103.  
 Technic for Appendicectomy. O. Cignozzi.—p. 1104.

**Cholesterinemia.**—Alessandri reports the findings in twenty-two patients with various diseases in regard to the cholesterin content of the blood and its fluctuation under different conditions. He gives a table of the findings also in ten cases half an hour after epinephrin had been injected subcutaneously or by the vein. The epinephrin seemed to mobilize the cholesterin deposits.

**Action of Lymph Gland Extract.**—Mazzarella states that an extract of lymph glands taken from different parts of the body and from different animals displays an action antagonistic to that of epinephrin. Injected into the peritoneum of white mice, rabbits and guinea-pigs, it induced constantly an increase in the numbers of lymphocytes and of eosinophils. The eosinophilia occurs more promptly, is more intense, and does not last so long as the eosinophilia which follows stimulating the vagus with pilocarpin. The gland extract thus seems to have a hormone action, depressing the sympathetic system.

Dec. 3, 1921, **37**, No. 49

- \*Hygiene of the Mind. L. Bianchi.—p. 1141.  
 \*Isolation of Pneumococcus and Enterococcus. N. Pane.—p. 1147.  
 Toxic Action of Vinilamin. R. Luzzatto and A. Levi.—p. 1148.  
 Recent Literature on Surgery of Bones. Aievoli.—p. 1150.

**Hygiene of the Mind.**—In this opening lecture of the course on nervous and mental diseases, Bianchi emphasized among other things the stabilizing effect of work on the mind, and deplored the prevailing conception that the fewer hours we have to work the better off we are. "This is the view which politicians and labor leaders—to promote their own selfish interests—are impressing on the public. The result is that the shortening of the hours of labor, instead of giving leisure for home duties and family life, is deteriorating character and mental health as the free hours are devoted to loafing. Work—the great stabilizer of the nervous system—is abhorred and shirked more and more—a sad perversion of the ideal aimed at in the early agitation for the eight hour day." Nervous disease is becoming more and more prevalent, and the number of the insane has trebled in the last twenty years. Physicians should be on the lookout for anomalies in character as well as in the blood or tissues. He says that his forty years of practice have demonstrated that anomalies in character in children can be effectually combated by wise management and hygiene, either in the home or with some wise and patient teacher. Those children that failed to get this favorable environment or were sent to a large school where all were treated alike, had their abnormal traits intensified, and grew up to be candidates for the reform school or asylum.

**Differentiation of the Pneumococcus and Enterococcus.**—Pane states that the enterococcus is the only bacterium in specimens of stools that survives desiccation in the incubator at 37 or 38 C. for up to twenty days. Pneumococci in sputum also resist desiccation in this way for several days, but never more than ten. When taken from the incubator, both these germs develop well in bouillon with 1 per cent. glucose.

**Rivista Critica di Clinica Medica, Florence**Sept. 25, 1921, **22**, No. 27

- \*Tests of Vegetative System in Typhoid. C. Alessandri.—p. 313. Cont'n.  
 Activation and Attenuation Methods in Treatment of Pulmonary Tuberculosis. G. Brecchia.—p. 319. Cont'n.

**Drug Tests of Vegetative Nervous System in Typhoid.**—Alessandri injected tentatively atropin, pilocarpin, physostigmin (eserin), or suprarenal, thyroid or pituitary extract on different days during typhoid in six cases. Epinephrin was the only substance that elicited a similar response in all, although it was less pronounced the higher the temperature and the later in the disease. The response to atropin and the other drugs differed widely in the different patients, as he describes in detail, with theoretical deductions.

Oct. 15, 1921, **22**, No. 29

Protein Content of Exudates. Natali.—p. 337. Conc'n No. 30, p. 349.

Nov. 5, 1921, **22**, No. 31

Serologic Tests in Syphilis of the Third Stage. C. Sestini.—p. 361.

Nov. 15, 1921, **22**, No. 32

\*Fever with Otherwise Latent Tuberculosis. C. Cantieri.—p. 373.

**Paroxysmal Fever in Latent Tuberculosis.**—Cantieri cites instances of prolonged fever without distinct physical signs, and necropsy shows some circumscribed focus in the glands, the apices normal. Or there may be a miliary diffusion of lesions detectable only by the roentgen ray. Or there may be some slight physical findings at the apex which are not explained by the necropsy. Or a focus in a bronchial gland may force an opening into the air passages, with tubercle bacilli to be found constantly in the sputum thereafter. Many of these cases of prolonged fever are mistaken for intestinal disease, and drag along for months and years with treatment exactly the reverse of what is needed. Some ascribe importance to discovery of enlarged glands, especially in the axilla on the same side. Persisting anorexia is also instructive, as also loss in weight, spleen of normal size, tachycardia, orthostatic albuminuria, and leukocytosis, exclusion of other diseases, discovery of a source for tuberculosis in the environment, possibly in some elderly relative with chronic bronchitis never suspected of tuberculosis.

Mere suspicion of latent tuberculosis should guide treatment, instead of treating for the imaginary intestinal affection. Inadequate nourishment in the tuberculous may increase the fever. Mya teaches that the autophagism—which goes on when sufficient nourishment is not being provided from without—adds to the production of toxic waste, disturbing heat production and radiation. The temperature may rise a little on change from a fluid to a semisolid diet, but this is only transient. The fever with latent tuberculosis may occur only occasionally and last only a day or two or several days. In one young girl there were periods of fever up to 39 or 40 C. remittent or intermittent, for several months, with no other findings except endometritis, until finally an apical process became manifest, and the girl did not survive many months. This girl's sister developed later a similar series of waves of fever at intervals of two or three weeks, but they gradually grew less frequent and less severe. One boy of 11 had a period of fever ascribed to digestive disturbance. The fever returned later and some error in diet was incriminated. The boy was frail, and notwithstanding the most careful diet the waves of fever returned, each lasting for one or two days. Finally signs of pleurisy and pericarditis were discovered, but the condition has been improving of late. He cites a number of other examples of this paroxysmal febrile cryptotuberculosis.

**Archivos Españoles de Pediatría, Madrid**October, 1921, **5**, No. 10

- \*Early Diagnosis of Inherited Syphilis. G. Sisto.—p. 577.  
 Access Through Rectum to Appendiceal Abscess. V. Juaristi.—p. 592.  
 Hemisection for Astragalectomy. Idem.—p. 593.

**Early Diagnosis of Inherited Syphilis.**—Sisto reiterates that inherited syphilis is almost certain when a young infant cries incessantly. Often incessant crying may be the only symptom of the disease. He ascribes it to the pain in the bones; they are tender on pressure and the pain is increased by movements, and nothing except specific treatment for syphilis will quiet the child.

**Brazil-Medico, Rio de Janeiro**Nov. 5, 1921, **2**, No. 17

- \*Uncinariasis in Southern Brazil. W. G. Smillie.—p. 239. Conc'n in No. 18, p. 261.  
 Stomach Disease from Practitioner's Standpoint. O. Clark.—p. 244.

**Hookworm in Southern Brazil.**—This is the fourth communication on this subject by the director of the Hygiene Institute at S. Paulo. Some of the tables given here confirm anew the influence of bare feet on hookworm infestation. In one family, for instance only 40 specimens of hookworm were found on an average in the 6 members who wore shoes while 226 was the average in the 4 barefoot children. In a group of workmen, 148 barefoot workers averaged 255 hookworms while the 29 that wore shoes averaged less than 50.



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## URETERAL OBSTRUCTION

FAILURE TO RECOGNIZE THE CONDITION AS A  
FREQUENT CAUSE OF UNNECESSARY  
OPERATION

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Ureteral obstruction, though commonly encountered, is frequently overlooked. Its disturbances, therefore, are frequently misinterpreted and improperly treated. Here are three illustrative cases:

### REPORT OF CASES

CASE 1.—Miss B., aged 21, admitted to the Western Pennsylvania Hospital, Aug. 10, 1921, for the past five years had been subject to attacks of pain in the right lumbar region, radiating to the front of the abdomen and bladder. No urinary disturbances accompanied the attacks. For these attacks an appendectomy had been performed three and one-half years before. As the attacks recurred, she was operated on eight months later, a stump of the appendix left from the previous operation was removed, and a plastic operation for Lane's kink was done. No relief followed the second operation.

A year later the patient was subjected to a third operation, this time for "obstructing adhesions." As the patient failed to get relief, a fourth operation, also for adhesions, was undertaken a year before admission. The clinical data obtained by us from the patient suggested an investigation of the urinary tract. Repeated exploration of the right ureter disclosed an obstruction 4 cm. (1½ inches) above the right ureteral meatus, which was finally passed. The urine obtained from the kidney showed a few leukocytes; otherwise it was normal. A pyelo-ureterogram was taken which demonstrated a dilatation of the ureter above the site of obstruction. A diagnosis of stricture of the ureter was made.

CASE 2.—Mrs. B., aged 25, admitted to the hospital, Dec. 4, 1919, for nine years had been suffering from a constant dull pain in the right lumbar region, with frequent acute exacerbations requiring morphin. The pain, when severe, radiated to the right iliac fossa and down the thigh. She complained of frequent urination, nocturia and, at times, hematuria. For this, six years before, an appendectomy and a right salpingo-oophorectomy were performed. No improvement followed. A roentgen-ray examination three years before disclosed a right-sided renal shadow, and an operation for nephrolithiasis was undertaken. No stone, however, was found. Her condition remained unchanged except for added chills and fever. On admission, the urine contained pus, but cystoscopy did not reveal a pathologic condition of the bladder. Repeated catheterization of the right ureter demonstrated an obstruction about 10 cm. (4 inches) above the ureteral ostium, which was finally passed. The specimen of urine was loaded with pus. A ureteropyelogram revealed a dilated, kinked ureter and a large renal pelvis with obliterated major and minor calices. A diagnosis of a right ureteral kink with a pyonephrosis was made.

CASE 3.—Mrs. S., aged 28, after the delivery of her first child, six years before, developed a lumbar backache, worse on the right side. During her next pregnancy, four years later, the backache somewhat improved, but, after the delivery, the symptoms became worse than ever. As the complaint was attributed to a laceration of the perineum and cervix, a perineorrhaphy and trachelorrhaphy were done two and a half years before admission. The pain, however, continued to get gradually worse. Six months later, in addition to the backache, she developed a pain in the right groin, which annoyed her so much that she consented to a second operation. The uterus was fixed and the appendix was removed. No relief followed. Her symptoms became worse. Chills and fever began to accompany the attacks of right lumbar pain.

She was admitted to the hospital, May 3, 1917. The urine contained many red and white blood cells. On catheterization of the right ureter, its upper third was found blocked. Repeated attempts to pass the obstruction failed. A specimen of urine from the right kidney showed pus. A roentgenogram of the right urinary tract demonstrated a stone at the tip of the catheter, and a ureteropyelogram disclosed a dilatation of the ureter below the obstruction. Dilatation above the obstruction could not be demonstrated because the impacted calculus interfered with the upward passage of the opaque fluid. A right ureteronephrectomy, May 28, confirmed the diagnosis of an obstructing ureteral calculus with pyonephrosis.

### CAUSES OF DIAGNOSTIC ERRORS IN URETERAL OBSTRUCTION

The failure to recognize ureteral obstruction is to a great extent explained by (1) the variety of its causative factors and secondary urologic changes, and (2) the anatomic relations of the ureter to its adjacent organs. Disturbances of ureteral obstruction are for these reasons frequently ascribed to a nonexisting or coexisting pathologic condition in the neighboring structures; and not infrequently, after an operation for the coexisting pathologic condition in the adjacent organs, the persisting ureteral symptoms are attributed to postoperative adhesions.

Of all the abdominal organs, the appendix, in our observation, is most commonly involved in such diagnostic errors. The ureter is situated immediately to the inner side of the appendix, and, in some cases, crossed by it. One can, therefore, easily see how, for instance, an acute right-sided pain from an impaction of a calculus at the middle ureteral constriction may be interpreted as an appendical pain; how a ureteral inflammation, resulting from extension of an appendical inflammatory process, may be entirely overlooked and how the symptoms of ureteritis or ureteral strictures after an appendectomy may be ascribed to postoperative adhesions.

The pelvic organs in the female are next in frequency involved in such diagnostic errors. The intimate relation of the ureter to the pelvic organs, and



the not uncommon exacerbation of ureteral disturbances during menstrual periods, lead us often to ascribe the symptoms of ureteral obstruction to non-existing disease of the generative organs, and, as after an appendectomy, to attribute the ureteral symptoms persisting after the pelvic operations to postoperative adhesions.

For similar reasons, disturbances caused by ureteral obstructions are incorrectly attributed to disease of the rectum, colon, ileum, seminal vesicles, etc.

#### DIAGNOSTIC MEASURES IN URETERAL OBSTRUCTION

Good clinical histories, physical examination of the urinary tract and organs adjacent to the ureter, careful urinalysis and investigation of the urinary tract with the aid of cystoscopy and urography will lead, in the majority of cases, to a correct interpretation of disturbances resulting from a ureteral obstruction.

*Clinical Histories.*—In carefully taken clinical histories, cases of ureteral obstruction always give data indicating a pathologic condition in the urinary tract. With the great variety of locations, etiologic factors and complications of ureteral obstruction, one cannot expect definitely characteristic symptoms; but in a good history one can always find data that suggest an investigation of the urinary tract, and such investigation, if carefully conducted, must lead, in the great majority of cases, to a correct diagnosis. Such data include: (1) continuous ache or pain localized at some definite part of the urinary tract; (2) intermittent attacks of pain in the lumbar or ureteral region, usually radiating downward toward the bladder or thigh (such attacks may be accompanied by gastric disturbances, chills and fever); (3) urinary disturbances, such as frequency, dysuria and urgency (amounting at times to incontinence), which may be continuous, or intermittent, occurring only during acute attacks.

*Physical Examination.*—Such clinical data naturally suggest a physical examination (percussion, pressure and palpation) of kidney and ureter. By fist percussion over the kidney region and by bimanual pressure over the lumbar and hypochondriac regions, we look for enlargement and tenderness of the kidney. By pressure and palpation at the ureteropelvic junction and at the brim of the pelvis, especially in thin and relaxed persons, we attempt to map out a thickened or dilated ureter. By the aid of rectal or vaginal palpation of the lower 3 inches (7.5 cm.) of the ureter, we search for a calculus or an inflammatory thickening. To facilitate the interpretation of the physical findings, we investigate the pelvic and abdominal organs, particularly the appendix and genitalia, because of their important anatomic and pathologic relationship to the ureter.

*Urinalysis.*—With the suggestive history and physical findings, an examination of the urine is, of course, made. In females, a catheterized specimen of urine must be used to avoid the admixture of vaginal discharges. The finding of pus or blood cells in the urine, especially in absence of dysuria, is of unquestionable diagnostic value. Negative microscopic findings, however, by no means exclude ureteral disease for (1) obstruction may be present for some time without inducing any changes in the kidney, and (2) the obstruction may be so complete during the acute attack as to interfere with the flow of the abnormal urine from the affected side (the voided specimen then presenting only the secretion of the healthy kidney).

Having obtained information justifying the suspicion of obstruction in the ureter, we proceed to define, with the aid of the cystoscope, ureteral catheter and urography, the location and nature of the obstruction.

*Cystoscopy.*—With the cystoscope in the bladder, we carefully inspect the ureteral orifices for evidences of obstruction. We may see a stone at the orifice; we may notice an edematous, congested meatus, suggestive of a calculus immediately above it; we may notice a stenosed, prolapsed, dilated or ulcerated ostium, or we may find the meatus encroached on by a tumor (papillomatous, carcinomatous, etc.) and, in bad cystocele cases, by folds of vesical mucous membrane.

*Catheterization of Ureter.*—After the careful inspection of the orifices, we take up the investigation of the suspicious ureter with the aid of a graduated roentgen-ray renal catheter. The catheter is introduced as far as possible into the ureter, preceded by ureteral meatotomy if necessary. A specimen of urine is collected for chemical, microscopic and cultural examination, and in suspected tuberculous cases for guinea-pig injection.<sup>1</sup> We then proceed to examine the ureteral canal for obstruction. By the number of centimeters shown on the graduated catheter at the ostium of the ureter we may tell how high the catheter passed up into the ureter. If the catheter is found to have stopped below the ureteropelvic junction, and, on repeated examinations, the catheter is found to be arrested at the same distance from the ostium, an obstruction may be strongly suspected. I say "suspected" because, whether we succeed or fail in passing the catheter into the kidney, the question of presence or absence of obstruction should not be definitely settled; for, on the one hand, obstructing factors, such as ureteral calculi, angulations, strictures or constrictions (from external pressure), may be present, and yet the catheter may pass up into the kidney without difficulty; on the other hand, in absence of obstruction, the catheter may be prevented from passing up into the kidney, if its tip be caught in a small diverticulum, valve, or wall of a freely movable ureter. There are conditions, however, in which the catheter may give us definite information. If, for instance, on failure to meet an obstruction, a catheter of a larger size than the one used is stopped, on repeated examinations, at a certain point, a moderate obstruction may be definitely diagnosed; if a so-called "hang" is felt on the withdrawal of the catheter, a stricture may be strongly suspected; if scratch marks are found on a wax tipped catheter, a diagnosis of ureteral calculus can be decided on.

*Roentgenogram with Opaque Catheter.*—Additional valuable information may be obtained if a roentgenogram is taken with the roentgen-ray catheter in its position. Not uncommonly the catheter curls on itself at the point of obstruction, and without the aid of the roentgen ray one may get the impression that the obstruction is higher than it really is. Only the roentgenogram can demonstrate this coiled condition of the catheter and enable us to avoid the error. The value

1. Occasionally it happens that no flow of urine follows the insertion of the catheter. This may be due to a clogging of the catheter on its passage through the ureteral canal. To exclude this, about 5 c.c. of sterile water is injected into the catheter, and if a flow of urine is not established through the catheter, we have an anuria which may be pathologic or functional. Usually it is functional and is caused by reflex irritation resulting from presence of the catheter in the ureter. No importance, however, should be attached to an anuria on a single examination. An attempt should be made to obtain a specimen at a later sitting; and, if the anuria is not pathologic, it will not, as a rule, be repeated on the second examination.



of a roentgenogram is especially seen in renal calculi. An opaque catheter on a roentgenogram, even if not waxed, not only differentiates the stone from the other shadows, but also demonstrates its position and size.

**Urography.**—The most valuable aid, however, in the diagnosis of ureteral obstruction is given by urography. The opaque fluid injected into the kidney and ureter gives us roentgenographic shadows, which if properly interpreted supply us with valuable information that cannot be obtained by any other means. It settles definitely the question of presence of obstruction by demonstrating the dilated ureter above it; it pictures the various pathologic changes caused by the obstruction; it shows up obstructing kinks and strictures; it discovers the narrowing of the ureter from extra-ureteral causes; it demonstrates such a diagnostically difficult obstructing factor as an anomalous renal vessel (by the pear-shaped pyelogram); it distinguishes the simple inflammatory dilated ureter from the tuberculous, and both from the noninflammatory; and also it not infrequently suggests the prognosis and the treatment of the obstructed ureter.

Objections are raised to urography as a diagnostic procedure, on account of its technical difficulties and the pain and injuries it may cause the patient; but this is true, more or less, of many other diagnostic and therapeutic procedures. In our opinion, based on several thousands of such examinations, the unpleasant and injurious effects may be almost entirely avoided by using small sized catheters, by injecting only small quantities of the opaque medium, and by draining away the fluid before removal of the catheter.

If studies as outlined above were conducted in doubtful urologic cases, many a patient could be saved the trouble of unnecessary treatments and operations, and many more could have the pathologic condition corrected before it becomes irreparable. The unfortunate results of the neglect of such investigations are seen in almost every clinic. True, such an investigation requires a great deal of effort. It demands a carefully taken history, a complete urinalysis, an examination of the abdominal and pelvic organs, a cystoscopic inspection, a catheterization of one or both kidneys and a roentgen-ray study not only of the urinary tract, but not infrequently also of such abdominal organs as the gallbladder, colon, stomach and duodenum. Such a study is time consuming and expensive, and requires close cooperation between the cystoscopic, pathologic and roentgenologic departments. All this is true, but the difficulties of early diagnosis of ureteral obstruction are so great and the consequences of the diagnostic errors are so serious that no measures, however difficult and unpleasant, should be set aside if they are found essential to the clearing up of the diagnosis of ureteral obstruction.

Jenkins Building.

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**Organized Medical Service Shops.**—Before we can claim to be developing or even protecting health, we must know the sum and character of human sickness. Our first and best, and perhaps our last, source of information will be the organized medical service shops, the hospitals, and dispensaries, the sanatoria, convalescent homes and domiciles of the insane, of children, of paupers, and those great institutions now infiltrated throughout the community, the visiting nurse associations, whose experience and records offer often a greater range and bulk of material than the larger hospitals of a city or state all combined.—H. Emerson, *Hosp. Soc. Service* 4:273 (Nov.). 1921.

## THE DIAGNOSTIC VALUE OF VOLUME RATIO DETERMINATIONS OF DAY TO NIGHT URINE\*

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PHILADELPHIA

Nocturnal polyuria may be an early evidence of chronic nephritis, a source of annoyance to the patient, and a cause of complaint. Normally, the kidneys exhibit lessened activity during the night period. Throughout the day, also, renal glomeruli are alternately resting and working. Aside from this intermittent activity, however, the entire kidney functions at a lower level during the night; consequently, the night volume of urine is less than that of the day.

In order to determine the ratio existing between the volume of day and night urine, investigations have been carried on with a large number of patients. It was first necessary to determine the normal ratio; for this purpose, patients in whom no evidence of nephritis was demonstrable were used. Coincidentally, similar studies were made in cases of nephritis of different types and severity. As a result of these investigations, we have been able to determine the normal ratio between day and night urine, and to demonstrate departures from this normal in nephritis.

### FACTORS INFLUENCING FLUID OUTPUT

In interpreting the volume ratio of normal persons, several factors influencing results should be taken into consideration, such as the amount and time of fluid intake; the air temperature, the diet, and the intelligence with which the patient cooperates in the determination. The amount of fluid intake is an important factor, and, more particularly, the time at which fluid is taken. Water ingested in large amounts at bedtime increases the night volume. An accurate study is furthered, therefore, by the ingestion of fluid only throughout the day period. On cold days, more urine is excreted than on hot days, bearing an inverse ratio to skin activity. The influence of the skin, however, has more bearing on the total volume, and day urine, than on the nocturnal secretion.

For the purposes of accurate determination of kidney function, a high protein diet should be avoided, as more urine is excreted on a high than on a low protein diet, provided the fluid intake remains constant; a high protein diet seems especially to increase the night urine.

Cooperation of the patient is essential; directions as to the collection and measurement of the specimens must be carefully given and intelligently carried out. Many data may have to be rejected if the patient fails to understand or to carry out instructions.

### TECHNIC

In making observations on the secretion of day and night urine, a definite procedure has been followed: The patient is placed on a total fluid intake of 1,800 c.c., as a matter of convenience, since this amount is the same as that used in the two-hour fixation test. This amount includes the fluid taken with meals. All urine excreted is collected in two periods, the first, from 8 a. m. to 8 p. m.; the second, from 8 p. m. to 8 a. m. These two periods were chosen because Mosen-

\* Read before the College of Physicians of Philadelphia, May 30, 1921.

\* From the Medical Department of the Jefferson Medical College Hospital.



thal<sup>1</sup> has shown that three hours must elapse before the stimulating effects of food and fluid taken at a meal have disappeared. Therefore, the night period should begin three hours after the evening meal, and no food or fluid should be taken during that time.

#### NORMAL RATIO

Approximately two thirds of all fluid ingested is excreted by the kidneys; the remaining third is elimi-

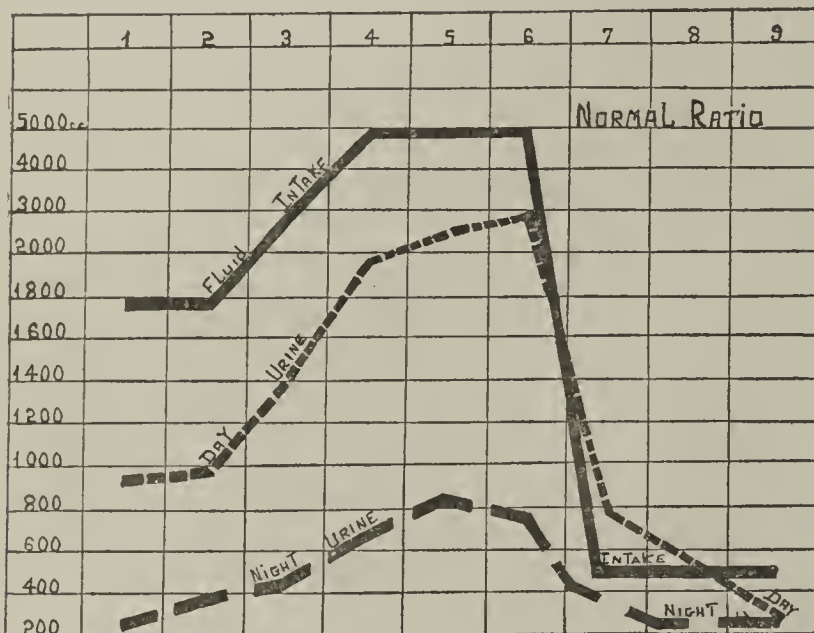


Chart 1.—Normal cases; ratio is fairly constant with fluid intake at varying levels; note change in ratio when output is low.

nated by the skin, lungs and intestine. The day volume is three or four times larger than that of the night urine. For example, if the day volume is 1,000 c.c., the night volume will amount to 200 or 300 c.c., being a ratio of 3:1 or 4:1. Occasionally the night urine is as much as half the amount of the day urine, but a ratio as high as 2:1 was present in only six of the normal individuals studied.

#### INFLUENCE OF FLUID INTAKE

Similar patients ingesting different amounts of fluid present almost identical ratios. In the cases that were studied, the fluid was variously placed in different persons at a daily intake of 500, 1,000, 1,800, 3,000, 4,000 and 5,000 c.c., the ratios determined in each case and found to be uninfluenced by the amount of fluid. The normal ratio remained fixed within narrow limits, 4:1 or 3:1, with the exception that, with an intake as low as 500 c.c., and consequent low output, the normal volume ratio previously given was lost, and in some instances was 1:1. Occasionally no urine whatever was voided during the night period, or only small amounts, varying from 50 to 100 c.c. When the total daily urine output is 500 c.c. or less, the normal ratio is disturbed, and the volume ratio estimation is of little value (Chart 1).

#### THE CAUSES OF NOCTURNAL POLYURIA

The causes of the nocturnal polyuria of nephritis are still in question. Some observers believe that kidneys unable to concentrate the urine must, of necessity, excrete more water in order to eliminate an amount of solids necessary to prevent their accumulation in the blood above normal levels, and, therefore, more work is done during the normal rest period. This belief is supported by the fact that the thirst, which is often

present in nephritis, is relieved when the patient is placed on a low or protein free diet, thereby decreasing the amount of solids that the kidneys are called on to excrete, and lowering fluid output.

#### INFLUENCE OF LOW PROTEIN DIET

The theory just given is also further supported by the fact that the normal ratio tends to be restored in patients placed on a low or protein free diet, under which circumstances, the blood nitrogen falls to normal or nearly normal (Chart 4).

#### THE NIGHT-DAY VOLUME RATIO IN NEPHRITIS

In 1918, during a study of the two-hour fixation test in war nephritis, the relation between the volumes of night and day urine was observed. Frequently the night volume exceeded the day volume by one-half, and in many cases they were equal, or nearly so. A study of normal persons was also made, and the ratio mentioned above was found to be almost constant in them. Cottet<sup>2</sup> has made similar studies in France, and placed the normal ratio at 1:1/4 or 1:1/2. This ratio places the night volume at a somewhat higher amount than our findings indicated; in only six of our normal studies was the ratio as high as one-half. Cottet's findings in nephritis, however, are similar to those reported in this paper.

In chronic contracted nephritis the disturbed ratio is most marked. Some of these cases showed a reversed ratio between the amount of night and day urine. In less severe disturbances, the volumes are likely to be equal. For example, the day volume may be 900 c.c. (Chart 2), and that of the night 700 c.c., or both day and night volume 600 c.c. each.

In many instances, coincident with clinical improvement, there was partial or complete restoration of the normal ratio (Chart 3). Even when other functional

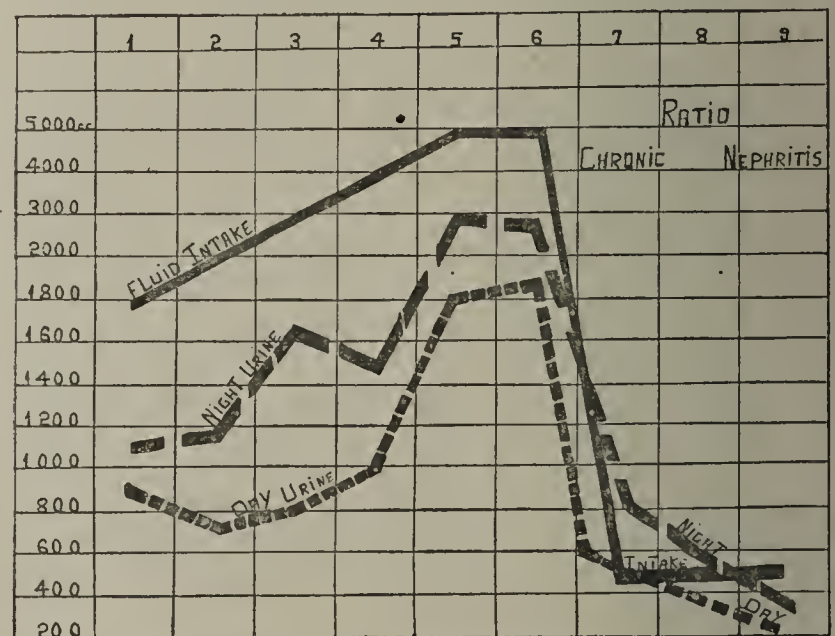


Chart 2.—Nephritic cases; ratio is disturbed; night urine high in amount; the change in volume intake does not materially alter abnormal relation of day to night urine; when output is low, the volumes are nearly equal.

tests failed to show an evident symptomatic improvement, the return to the normal ratio denoted the change.

The amount of fluid intake had very little effect on the deranged ratio; even when amounts of fluid as high as 5,000 c.c. were ingested, the ratio remained practically unchanged.

1. Mosenthal, H. O.: Renal Function as Measured by the Elimination of Fluids, Salt and Nitrogen, and the Specific Gravity of the Urine, Arch. Int. Med. 16:733 (Nov.) 1915; Renal Function, ibid. 22:770 (Dec.) 1918. Mosenthal, H. O., and Lewis, D. S.: A Comparative Study of Tests for Renal Function, J. A. M. A. 67:933 (Sept. 23) 1916.

2. Cottet, J.: Paris méd. 10:513 (June 26) 1920.



In chronic diffuse nephritis with diminished urinary secretion, the deranged ratio is not so constant. One patient exhibited a total output of 800 c.c., of which 500 c.c. was night urine, and 300 c.c. day urine. Another patient with an output of 500 c.c. showed a night volume of 200 c.c. and a day urine of 300 c.c. As in normal persons, when the total output was 500 c.c. or less, the separate amounts of day and night urine became more nearly equal. The ratio has much less

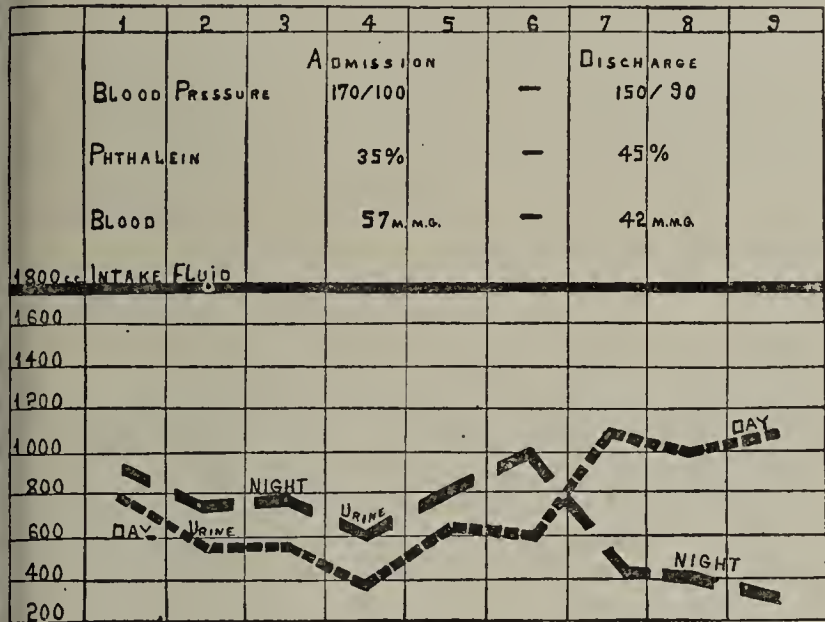


Chart 3.—Male with acute exacerbation of chronic nephritis following acute tonsillitis. Note the resumption of normal relation between day and night urine coincident with functional improvement.

significance, therefore, if the total urinary output is of small amount.

VALUE OF THE RATIO IN THE TWO-HOUR  
FIXATION TEST

Mosenthal, in the development of the two-hour fixation test, first fixed the normal volume of night urine at 400 c.c., and later at 750 c.c. Normal persons may occasionally total a night volume of 750 c.c., or even more. Still more often, cases of nephritis with volumes well under that mark are encountered. In many instances in which the night volume in itself does not correctly indicate the status of the kidney, a consideration of the ratio of the volume of the day to night urine will give a more satisfactory estimate of existing renal damage.

Nocturnal polyuria and nocturnal frequency are symptoms which may be confused; a determination of the ratio of night to day urine affords a means of distinguishing between them, since in cases in which the nocturnal micturation is produced by an extrarenal factor, as cystitis or prostatitis, the normal ratio remains unaltered.

THE RATIO IN NIGHT WORKERS, NORMAL  
AND NEPHRITIC

After establishing the normal ratio of day and night urine for those working during the day and sleeping at night, it was suggested that similar studies be made of those who worked at night and slept during the day. Considerable difficulty was encountered in finding persons with chronic nephritis who were engaged in night work. Eventually we were able to study eight normal persons and two others who evidenced rather marked renal damage. The same routine was observed as in our other studies with regard to the collection of the specimens and the fluid intake. In the eight normal persons, no urine was passed during the day sleeping

period; whereas, during the night work period, they passed urine frequently. The volume ratio in repeated examinations conformed to normal findings with a reversal of the ratio of day to night urine, being  $\frac{1}{4}$ :1 or  $\frac{1}{3}$ :1.

Both cases of nephritis were of the interstitial variety, with phenolsulphonephthalein outputs of between 30 and 40 per cent. Both the patients were night watchmen. Some difficulty was experienced in securing proper collection of the urine, but we were finally able to get satisfactory cooperation. In both patients, the volume of the day urine, during the period of their rest, was greater than the night work period; in one case, the ratio was 1:1½; and in the other 1:1. The volume output in the first case was 1,000 c.c. in the night work period, and from 1,500 to 1,600 c.c. in the day rest period.

SUMMARY OF OBSERVATIONS AND CONCLUSIONS

The normal ratio of day to night urine is 1:¼ or 1:⅓, occasionally 1:½.

The ingestion of large amounts of fluid does not materially alter the ratio, or the value of the test.

On a low fluid intake, with a total output of 500 c.c. or less, the volumes are nearly equal, and the ratio is of less significance.

In chronic contracted kidney, the normal ratio is often reversed, i. e., the night urine is greater in amount than that of the day. Frequently, the night and day volumes are nearly equal.

In nephritis, the ingestion of a large amount of fluid does not alter the ratio to any marked degree.

In chronic parenchymatous nephritis, if the output is small, the ratio determination has less value.

On a protein-free diet, with clinical improvement, the normal ratio is reestablished in many cases.

The determination of the volume ratio of the night to day urine in the two-hour specific gravity fixation

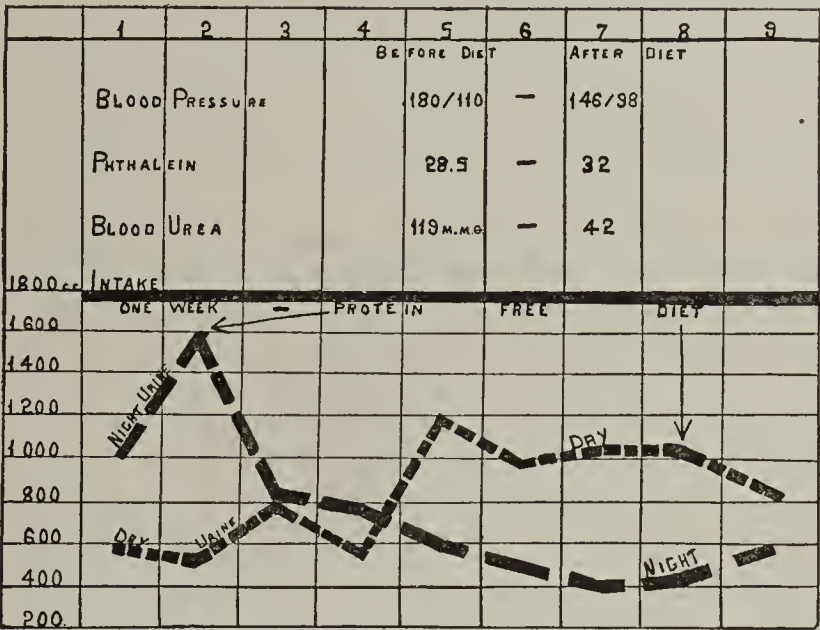


Chart 4.—Man with chronic nephritis. Note the resumption of normal relation between day and night urine and functional improvement after one week protein-free diet. This was a case of war nephritis.

test is a more reliable index than the measurement of the night volume alone. The determination of the ratio is of value in differentiating between nocturnal polyuria and nocturnal frequency.

In normal persons who work at night, the ratio of the work period to the rest period remains unaltered; the work period volume is three or four times that of the rest period.



In patients with chronic nephritis who work at night, the volume of the day or rest period is greater or equal to that of the night or work period.

The alteration in the normal ratio is one of the earliest signs of functional impairment in the kidney.

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## HEMATOGENOUS STAPHYLOCOCCUS INFECTIONS SECONDARY TO FOCI IN THE SKIN

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The interest shown in this country during recent years in foci of infection, from which micro-organisms gain entrance into the circulation and produce remote lesions in various locations, has centered mainly about those occurring in the mouth and nasopharynx. The organism that has received the greatest consideration has been the streptococcus, and the lesions which have either been shown to be due to it or been attributed to it have concerned almost every tissue in the body. As a result of this activity, much has been learned about the pathogenesis of certain infections and considerable advance has been made toward their prevention and cure. On the other hand, in an attempt to apply this information clinically, many mistakes have been made, which fall chiefly into two classes: in (1) regarding noninfectious lesions as of infectious nature, and (2) considering infectious lesions as secondary to foci in the teeth or tonsils, when the organisms entered through another portal. Thus, cases of primary or secondary malignancy of bones are not infrequently diagnosed early as arthritis or neuritis, and infections, such as certain cases of osteomyelitis, are loosely considered as secondary to foci in the mouth or nasopharynx, when careful inquiry would show that the organism entered elsewhere. In such instances teeth or tonsils have sometimes been removed when they had no connection with the disease.

During this period of interest in the streptococcus, the portal of entry of the staphylococcus has not received proportionate attention, but there has been a growing tendency to consider it also as the nasopharynx or mouth in nearly all cases. Thus, Billings<sup>1</sup> says that there can be no question that staphylococci producing acute osteomyelitis gain entrance into the blood stream from foci in the head or lymph nodes, and that, rationally, this etiologic focus should be removed coincidentally with the surgical treatment of the bone infection. He mentions no other portal of entry. This concentration of attention on the mouth and nasopharynx has led to negligence in the consideration of other regions as possible portals of entry, of which there is no better example than the skin. The chief habitat of staphylococci is the skin, in most infections of which they are usually found, either as the exciting cause or as secondary invaders. It is an old observation that staphylococci not infrequently enter the blood stream from skin foci and produce inflammation in various structures of the body. The most important of these skin lesions are boils and carbuncles, which are practically always due to staphylococci, infected wounds, paronychia, acne pustules, folliculitis, impetigo, eczema, dermatitis, blisters arising from friction, burns, freezing, vaccination, smallpox, chicken-

pox, and excoriations from scratching in various itching lesions.

That skin foci are important as a source of hematogenous staphylococcus lesions is illustrated by nineteen cases, briefly summarized and grouped according to the structures involved, which I have observed, with two exceptions, in connection with various services of the Presbyterian Hospital in the twenty months previous to September, 1921. In all instances the staphylococcus, usually *Staphylococcus aureus* but the variety was not always stated, was the only organism in cultures from the pus obtained at operation. In a few cases it was obtained in cultures from the skin focus, but usually the skin lesion was healed before the patient entered the hospital. The only definite focus of infection for entrance of the organism was in the skin, and there was no history of a recent focus in another region, except in one case as mentioned.

### REPORT OF CASES

There were eight cases of osteomyelitis:

CASE 1.—A girl, aged 11 years, received a stab wound of the foot, which became infected and was opened. On the eighth day, acute osteomyelitis of the body and right lateral mass of the fifth lumbar vertebra developed. Twenty-four days later, the paravertebral abscess was drained. *Staphylococcus albus* was recovered in cultures from the pus and also from the blood. Nine small foci developed in other bones during the following year, without demonstrable involvement of other organs, showing the tendency of this organism to bony localization.

CASE 2.—A boy, aged 14 years, had a boil on the right leg, which was almost healed at the end of about ten days, when the patient developed extensive osteomyelitis of the entire shaft of the left tibia and upper half of the shaft of the right tibia. Arthritis followed in both knee joints and in the left ankle and superior tibiofibular joints. Amputation through the lower third of the left thigh became necessary. The organism found was *Staphylococcus aureus*.

CASE 3.—A boy, aged 16 years, had a series of boils on the arms for five weeks, when acute osteomyelitis developed in the lower three fifths of the shaft of the left femur. Operation was performed six weeks later for drainage of osteomyelitis. *Staphylococcus albus* was found in cultures from the pus.

CASE 4.—A girl, aged 3 years, had an extensive third degree burn involving the anterior surface of the chest, abdomen and upper portion of both thighs. On the eighth day there was osteomyelitis of the proximal end of the first phalanx of the left great toe, with secondary arthritis of the metatarsophalangeal joint. Incision twenty-four hours later yielded pus, from cultures of which *Staphylococcus aureus* was obtained.

CASE 5.—A boy, aged 7 weeks, when 2 weeks old had a cold which lasted three days. He had had small pustules on the skin of the abdomen since soon after birth. There had been symptoms of osteomyelitis of the lower end of the right femur for two weeks before admission. Operation yielded pus from the medullary cavity and about the cortex, from cultures of which the staphylococcus was obtained. There is the possibility that the atrium was the nasopharynx, but the only active lesions at the time of onset of the osteomyelitis were the pustules in the skin.

CASE 6.—A boy, aged 19 years, had osteomyelitis of the left ilium and lower end of the left femur of five years' standing. There had been recent recurrence of the process in the ilium, with abscess formation due to the staphylococcus. When asked whether he was well at the onset of the primary osteomyelitis, he replied in the affirmative, except that he had been having boils for some time previously.

CASE 7.—A girl, aged 17 years, had severe acne of the face; two of the lesions had recently become aggravated and developed into small boils. While they were active, acute osteo-

1. Billings: Focal Infection, New York; D. Appleton & Co., 1916.



myelitis developed in the upper end of the shaft of the left radius. At operation nine days after onset, subperiosteal pus was found, which yielded *Staphylococcus aureus*.

Case 8, seen in another hospital, belongs to the same group:

CASE 8.—A boy, aged 12 years, developed infection in the heel from friction of a shoe. The lesion was incised and drained. Six days after the onset, osteomyelitis began in the upper ends of the right humerus and left tibia. When the lesions were drained, four months later, the staphylococcus was found in cultures from the pus.

Since bacteriologic studies have shown that about 90 per cent. of cases of hematogenous osteomyelitis are due to the staphylococcus, and since the skin is the chief habitat of that organism, it is not surprising that the portal of entry is a skin lesion in a certain percentage of cases.

There were two cases of multiple renal abscesses:

CASE 9.—A woman, aged 35, had an infection of the distal end of the right thumb. Drainage was followed by discharge of necrotic bone. Six weeks after the onset and before the finger was healed, there were symptoms of infection in the left kidney. Pus and staphylococci were discharged in urine from the left kidney. After six months of a mild septic course, the kidney was removed by Dr. Kretschmer and found to be the seat of multiple confluent abscesses resembling a carbuncle. *Staphylococcus aureus* was found in the pus.

CASE 10.—A man, aged 35, had a carbuncle on the back of the neck. Six weeks after the onset but before the carbuncle was healed, there were symptoms of infection of the right kidney. There was pus in urine from the right kidney. Nephrectomy by Dr. Kretschmer, two months after the onset, revealed a large area of confluent abscesses in the middle of the kidney, resembling a carbuncle. *Staphylococcus aureus* was found in cultures from the carbuncle, the urine of the right kidney, and the abscess in the kidney.

There were three cases of perinephritic abscess:

CASE 11.—A man, aged 22, had a badly infected ingrown nail on the left great toe, which was operated on at the end of a week. A few days later and before the toe had healed, there were symptoms and signs of a right perinephritic abscess. Operation was performed six weeks later, and a large abscess drained. *Staphylococcus aureus* was found in cultures from the pus. Ten days later symptoms developed in the region of the left kidney, but soon subsided, only to reappear three weeks later. Three days after the latter appearance, the left perinephritic abscess was drained. *Staphylococcus aureus* was found in cultures from the pus. There was no pyuria at any time. Prompt recovery ensued.

CASE 12.—A man, aged 35, had a boil 1 inch above the right heel, followed by a subcutaneous abscess. It was drained twice. Three weeks after the onset and before healing was complete, there were symptoms of a left perinephritic abscess, which was drained ten days later. Pus of both the boil and the perinephritic abscess yielded *Staphylococcus aureus*. There was no pyuria. Prompt recovery ensued.

CASE 13.—A boy, aged 9 years, had paronychia of the finger lasting two weeks. At the end of this time, there was slight pain in the right renal region, and the condition of the patient was mildly septic for two months, when a right perinephritic abscess was diagnosed and drained. Pus yielded *Staphylococcus aureus*. There was no pyuria. Recovery was prompt.

Another patient, a man, aged 29, was recently operated on for staphylococcus perinephritic abscess of five weeks' standing. There was no history or sign of a lesion anywhere that might have served as a portal of entry. Examination revealed two small recent pustules, which had not been noticed by the patient, in the skin of the left thigh. It is possible that a similar earlier lesion served as the atrium.

Israel<sup>2</sup> reported confluent abscesses of the kidney secondary to carbuncles of the neck, and named the condition kidney carbuncle. Barth<sup>3</sup> has recently reported four cases under that title. Brewer<sup>4</sup> recognized the relation between skin lesions and the disease. The rôle of skin foci in the development of both nephritic and perinephritic abscesses is illustrated by the twelve cases reported by Jordan<sup>5</sup> in which they were the portal of entry in eleven, as follows: boils, five cases; paronychia, three cases; suppurative wounds, two cases; phlegmonous abscess, one case. The staphylococcus has been found in most cases of perinephritic abscess that were not the result of direct extension from organs other than the kidney. McKenzie<sup>6</sup> found it nineteen times in twenty-one cases, and in all but three there was a history of previous infection, mainly in the skin. In most cases the perinephritic abscess arises from rupture of a small abscess in the cortex of the kidney, but in others the lesion seems to be a primary infection in the perinephritic fat.

There were four cases of myositis:

CASE 14.—A man, aged 28, had a boil of six days' standing on the extensor surface of the right forearm when he severely bruised the right quadriceps femoris muscle while working. Eighteen hours later there was onset of infection in the traumatized region and also in the muscles of the right forearm opposite the boil. Fourteen days later, abscesses in the quadriceps femoris muscle and in the flexor muscles of the forearm were drained. Pus yielded the staphylococcus.

CASE 15.—A girl, aged 7 years, fell, producing an abraded wound of scalp. One week later fever developed, with swelling and pain in the muscles of the left lumbar region. Two weeks later, an abscess in the longitudinal muscles of the left lumbar region was drained. It had no connection with the bone or other structures. Roentgen-ray examination was negative. *Staphylococcus aureus* was discovered in cultures from the pus. There was little inflammatory reaction in the scalp wound, but it was the only lesion present at the onset. Recovery was prompt.

CASE 16.—A woman, aged 37, had a 'boil of six days' standing on the right side of the face when symptoms and signs of infection appeared in the left iliopsoas region. Three weeks later, Dr. Speed drained several ounces of pus from the left iliopsoas muscle. The pus yielded *Staphylococcus aureus*. Roentgen-ray examination was negative for bone change. Urinalyses were negative. Recovery was prompt.

CASE 17.—A man, aged 26, had had boils on the thighs and perineum for six months. On admission there were symptoms and signs of ten days' standing of retroperitoneal infection in the right iliac region. Few boils were present on the perineum. Extraperitoneal operation revealed an abscess in the iliac portion of the right iliopsoas muscle; there was no connection with the bone. Pus yielded *Staphylococcus aureus*. Recovery was prompt.

Another patient, a man, aged 30, had a boil on the right forearm, and on the fourth day developed rather severe symptoms of infection in the region of the left iliopsoas muscle. On admission to the hospital, six weeks later, these had greatly subsided, although the left thigh was flexed to an angle of 45 degrees by the contracted iliopsoas muscle. *Staphylococcus aureus* was obtained from cultures taken from the remnant of the boil. The condition gradually cleared up without operation, but evidence pointed to a hematogenous infection of the iliopsoas muscle from the boil.

Hematogenous staphylococcus abscesses in the muscles have occasionally been reported, and in some cases, as those of Gauch and Gray,<sup>7</sup> the lesions have been

2. Israel: Chirurgische Klinik der Nierenkrankheiten, Berlin, A. Hirschwald, 1901, p. 580.

3. Barth: Arch. f. klin. Chir. **114**: 477, 1920.

4. Brewer: Surg., Gynec. & Obst. **2**: 485, 1906.

5. Jordan: Verhandl. d. deutsch. Gesellsch. f. Chir. **34**: 18, 1905.

6. McKenzie: Canadian M. A. J. **11**: 714, 1921.

7. Gauch, W., and Gray, J. W.: Am. J. Surg. **34**: 110 (April) 1920.



multiple. The localization may be in any muscle, especially when it occurs at the site of trauma, but the iliopsoas, pectoralis major, and thigh and calf muscles have been the ones most frequently involved when it was spontaneous. Billroth<sup>8</sup> stated that acute pyogenic myositis was most often seen in the iliopsoas muscle, and the observation of three cases in this series would lend support to the statement. There have also been two cases in the service of Dr. Lewis, one due to the staphylococcus with the portal of entry unknown, and another secondary to operation on the nasal septum four days before the onset of symptoms.

There were two cases of arthritis:

CASE 18.—A man, aged 45, had had eczema of the left calf and popliteal regions for two years, and small boils repeatedly in the involved skin. While the eczema was marked but boils were absent, he contused the left knee, and on the following day developed an acute arthritis of that joint. Twenty-six days later, bilateral arthrotomy was performed for drainage of the joint after aspiration of thin purulent fluid. Cultures showed *Staphylococcus albus*. The eczema was the only known lesion, and may have been the portal of entry, which view is strengthened by the fact that the involved region had repeatedly been the seat of boils.

An outside patient, L. C., a boy, aged 14 years, had an active boil on the right forearm, when he sprained the left ankle. Fifteen hours later there was arthritis of the left ankle. Drainage of the joint on the fourth day yielded pus from which *Staphylococcus aureus* was grown.

Lesions may occur in many other structures, as bursae, tendon sheaths, pleurae, the pericardium and the endocardium. They may be either single or multiple as a part of the picture of sepsis. Kretschmer<sup>9</sup> and others have reported abscesses of the prostate secondary to skin lesions, as carbuncle of the neck.

#### ANIMAL EXPERIMENTS

There is a close resemblance between these lesions in man and those produced in animals by intravenous injection of virulent staphylococci, as shown by the experiments of Rodet,<sup>10</sup> Lannelongue and Achard,<sup>11</sup> Lexer<sup>12</sup> and others. The results varied according to the age of the animal and the number of bacteria injected. In young rabbits large doses, from 1 to 2 c.c. of fresh bouillon culture of *Staphylococcus aureus*, produced either rapid death without special localization, or abscesses in various organs of the body. From 0.5 to 1 c.c. produced the picture of sepsis and usually death in a few days. At necropsy, multiple abscesses were found in the ends of the shafts of the bones, in the cortex of the kidneys, and to some extent in the muscles and other tissues. Smaller doses produced multiple small foci of osteomyelitis and subperiosteal exudate, with occasional arthritis and abscesses in the kidneys and muscles. In adult rabbits, small doses of from 0.1 to 0.2 c.c. frequently produced arthritis, but practically never osteomyelitis. Traumatism to the bones, either extensive contusion or fracture, immediately preceding the injection, nearly always led to localization at the point of injury. Brewer<sup>4</sup> showed that traumatism to the kidney previous to bacterial injection practically always leads to localization in that organ. Other experiments have shown that traumatism of various tissues preceding the bacterial injection predisposes to localization at the point of injury.

Little work has been done on elective localization of the staphylococcus, but there is some evidence in favor of the view that certain strains, regardless of their virulence or portal of entry, possess special power for attacking certain tissues. Schmitz<sup>13</sup> injected rabbits with staphylococci obtained from a human case of acute polymyositis, and found a striking tendency for localization in the muscles. This was not changed when the virulence of the organism was increased by animal passage. A similar tendency to the production of muscle lesions was shown by staphylococci cultivated from kidney and spleen abscesses by Marinotti,<sup>14</sup> and from the throat by Rosenow and Ashby.<sup>15</sup> In human osteomyelitis, if a subsequent hematogenous focus develops, it is usually in another bone, and Case 1 of this series, with nine bony localizations without foci in other organs, shows that the organism may possess this localizing tendency when the primary infection is in the skin.

The occurrence of a skin lesion giving rise to hematogenous infection may easily be overlooked, especially when it is slight or is not mentioned by the patient, who fails to associate it with the more serious condition to which it has given rise. Also the lesion is frequently healed by the time the patient is seen with the complication. Occasionally there is a latent period between the date of healing of the skin lesion and the onset of the symptoms of the complications, as noted by Jordan<sup>5</sup> in cases of nephritic and perinephritic abscesses.

In cases of hematogenous staphylococcus infections in which the portal of entry cannot be located by the most careful search, it has been contended by Roth<sup>16</sup> and others that the organism may have penetrated the intact skin without producing a local lesion. This seems improbable, but some support is lent to the theory by the experiments of Garré<sup>17</sup> and Schimmelbusch,<sup>18</sup> in which cultures of *Staphylococcus pyogenes-aureus* were rubbed through normal skin without abrasion, producing local boils and subcutaneous abscesses.

#### STAPHYLOCOCCI ENTERING THROUGH NASOPHARYNX AND MOUTH

The nasopharynx undoubtedly serves as an important portal of entry for the staphylococcus, but there are as yet insufficient data concerning the exact seat and duration of the lesions from which the organisms gain entrance. It has been considered the most likely portal of entry in those cases which give no history of a local infection preceding the onset of the hematogenous lesion. The distribution of staphylococci here is different from that of the pathogenic streptococci, which, according to Davis and Pilot,<sup>19</sup> are found in greatest numbers and almost constantly in the tonsils and pharynx, whether normal or the seat of disease. Staphylococci, according to Bloomfield<sup>20</sup> and others, are found constantly in the nose, but infrequently and usually in small numbers in the pharynx, tonsils and mouth, where they probably do not normally live and grow. *Staphylococcus pyogenes-albus* is much commoner than *Staphylococcus pyogenes-aureus*. They are present in a high percentage of infections of the

8. Billroth: Die allgemeine chirurgische Pathologie und Therapie, Vienna, 1884.

9. Kretschmer, H. L.: Surg., Gynec. & Obst. **32**: 259, 1921.

10. Rodet: Rev. de chir. **5**: 272, 636, 1885.

11. Lannelongue and Achard: Ann. de l'Inst. Pasteur **5**: 209, 1891.

12. Lexer: Arch. f. klin. Chir. **48**: 181, 1894; **53**: 266, 1896.

13. Schmitz: Centralbl. f. Bakteriologie, **65**: 259, 1912.

14. Marinotti: Centralbl. f. Bakteriologie, **23**: 877, 1898.

15. Rosenow, E. C., and Ashby, Winifred: Focal Infection and Elective Localization in the Etiology of Myositis, Arch. Int. Med. **28**: 274 (Sept.) 1921.

16. Roth: Ztschr. f. Hyg. **4**, 1888.

17. Garré: Fortschr. d. Med. **3**: 165, 1885.

18. Schimmelbusch: Arch. f. Ohrenh. **27**: 252, 1888-1889.

19. Davis, D. J., and Pilot, Isadore: J. Infect. Dis. **23**: 562 (Dec.) 1908; **24**: 386 (April) 1919.

20. Bloomfield, A. L.: Bull. Johns Hopkins Hosp. **32**: 290, 1921.



nose, as shown by the investigations of Floyd<sup>21</sup> and Tunnicliff.<sup>22</sup> They are also present in acute and chronic infections of the accessory nasal sinuses, according to Smith,<sup>23</sup> but data on this point are incomplete. Lesions of the nose and accessory nasal sinuses are for these reasons probably an important source of hematogenous staphylococcus infections, and clinical observations substantiate this view.

Infections of the tonsils, pharynx and teeth, according to Gilmer and Moody,<sup>24</sup> and Rosenow,<sup>25</sup> only occasionally show staphylococci in sufficiently large numbers to suggest that they are the primary and most important cause. Whether they enter the general circulation as secondary invaders through streptococcus lesions of the tonsils and teeth is a point which is uncertain. There is as yet little proof that chronic staphylococcus infections in the teeth or tonsils are both the source of, and responsible for the continuance of hematogenous lesions as chronic osteomyelitis. Therefore, removal of teeth and tonsils for the cure of known hematogenous staphylococcus lesions should not be done indiscriminately until a more definite causative relationship has been established between them.

## A DIETARY CONSIDERATION OF ECZEMA IN YOUNGER CHILDREN \*

EDWARD SCOTT O'KEEFE, M.D.

BOSTON

Eczema is more and more considered to be not entirely a skin disease or, on the other hand, entirely a medical condition; rather a systemic condition whose chief manifestation is cutaneous. Consequently, at the Massachusetts General Hospital the disease is treated by the skin department and the pediatric department working in conjunction. Children with eczema are admitted to the dermatologic outpatient department, where they are assigned to a special sub-clinic. Here they receive external treatment and are placed under the supervision of a special nurse and social worker of that department. From here they are sent to the children's medical outpatient department, where they are assigned to a subclinic devoted solely to the dietary treatment of eczema.

The dietary treatment of eczema has in recent years assumed a position of greater and greater importance. There has been, of course, for a long time a certain amount of recognition of the part played by foods in the causation, or at least in the aggravation, of eczema. This recognition has at times taken the form of limitation of fats in the diet; carbohydrates at other times have been considered the main factor. The proteins, until recently, were the only food element to escape suspicion. It is the proteins, as an etiologic factor, to which I wish to direct attention.

The fats are a factor in a certain proportion of cases of eczema, and the carbohydrates also are to be reckoned with, but the proteins seem to be the essential element in the causation of the great majority of these cases in infants and children.

In the last two years of work in this clinic, each patient has had the routine history and physical examination, with especial attention to the examination of the stools. In about 20 per cent. of the cases there appeared a lowered fat digestion, shown either in the form of free fat or as a definite excess of soap in the stools. In about half this number, or 10 per cent., there has been evidence, clinical or laboratory, of a carbohydrate indigestion. All patients are subjected to protein skin tests. In considering the results of these protein sensitization tests, the patients are divided into (1) the breast fed and (2) the bottle fed and older children.

Among 131 cases of the second class there occurred forty-five instances, or 35 per cent., showing sensitization to one or more of the common food proteins. This is in striking contrast to the percentage of protein sensitization occurring among normal children, in whom Baker<sup>1</sup> reports the incidence of protein sensitization to be an almost negligible factor. The foods showing a positive reaction in the foregoing series are, in order of frequency, egg, milk, potato, wheat and oat, with an occasional reaction among other foods.

The aim of treatment in these cases has been to eliminate, when possible, the offending protein. When this is not practicable, as in the bottle fed baby, the aim has been to secure as thorough a gastric digestion of the protein as is possible. This was sought by careful regulation of the diet in order that it might be proper for the child's age and digestive powers. Any factor in the diet which interfered with thorough and complete digestion of the protein was eliminated.

In this relation, let us consider fat or carbohydrate indigestion. Each of these conditions was found in this series more frequently than would occur in an unselected group of cases. Are these two food elements causative factors in eczema, or are they only predisposing factors? Do they merely make protein sensitization more likely to occur, and in this manner produce an eczema?

When the series is limited to the exclusively breast fed, many cases are eliminated; when it is specified that these exclusively breast fed babies shall have eczema, the hunt becomes difficult. I have, however, gathered data from the clinic in forty-one such cases. Here the problem presents itself in apparently its simplest form. The patient is taking, and has taken, nothing but breast milk. If one of the food elements causes eczema, it is apparently simple to determine what food element it is.

Earlier in the work I did protein skin tests on these breast fed infants merely as a routine measure. The results were surprising. More than 60 per cent. showed protein sensitization. Though exclusively breast fed, 40 per cent. showed a positive reaction to egg proteins, 39 per cent. to cow's milk proteins, 5 per cent. to oat, and about 2 per cent. to wheat. Fourteen per cent. responded to both egg and milk protein. I found no patient showing sensitization to human milk proteins, nor did I find any mother showing a skin reaction to the protein to which her child responded. The obvious conclusion seems to be that the breast milk in these cases contains a foreign protein which the child has ingested and absorbed unbroken, and sensitization has finally resulted. Of this sensitization the eczema is a manifestation.

1. Baker, H. M.: Incidence of Protein Sensitization in the Normal Child, *Am. J. Dis. Child.* **19**: 114-118 (Feb.) 1920.

21. Floyd, C.: *Boston M. & S. J.* **182**: 389 (April 15) 1920.  
22. Tunnicliff, Ruth: *Infect. Dis.* **16**: 493, 1915.  
23. Smith, Harrison: *New York M. J.* **105**: 721 (April 21) 1917.  
24. Gilmer, T. L., and Moody, A. M.: A Study of the Bacteriology of Alveolar Abscess and Infected Root Canals, *J. A. M. A.* **63**: 2023 (Dec. 5) 1914.  
25. Rosenow: *J. Dent. Res.* **1**: 205, 1919.  
\* From the Children's Medical Department of the Massachusetts General Hospital.



Shannon,<sup>2</sup> by anaphylactic experimentation on guinea-pigs, has recently demonstrated that foreign proteins do at times occur in human milk.

None of these breast fed babies gave any evidence of a fat or a carbohydrate indigestion. Sixty per cent. of them did give evidence of a protein indigestion as manifested in the positive cutaneous reaction.

#### TREATMENT

Breast milk is, of course, to be continued. The obvious thing is to take out of the mother's diet the food to which the nursling was sensitized, and that is what has been done. Whenever eggs or milk were omitted or limited in the maternal diet, cod liver oil and green vegetables were prescribed in order that no vitamin deficiency should arise in the breast milk. Meat proteins were used to supplement or replace the milk proteins of the maternal diet.

An analysis of the results of this treatment, combined with external remedies, shows that seventeen of the forty-one patients have been relieved of their condition entirely. In fourteen of this seventeen, the time elapsing between the beginning of treatment and the clearing of the skin could be definitely determined. The average time under treatment, for this group of fourteen, was one and two-thirds months. Nine of the remaining patients showed definite improvement after an average of one and seven-tenths months' treatment. Four patients did not seem to be improved after an average of one and one-half months' treatment. Seven came only once, and their progress has not been determined. The remaining four patients came too recently under treatment to allow conclusions to be drawn.

In these exclusively breast fed infants, we have apparent cure in about 40 per cent., and definite improvement in about 20 per cent. more following the omission or limitation of certain articles of food in the maternal diet.

With bottle fed babies and the older children, the aim has been to limit the assumed absorption of undigested protein molecules. To do this the protein has been eliminated when possible. In other cases the aim has been to improve the digestive function in order that complete digestion of protein may occur in a normal digestive tract. Such complete digestion of protein in a normal digestive tract does not occur in the presence of a fat or a carbohydrate indigestion. Hence, indigestion from either of these food elements must be corrected; otherwise it remains as an obstacle to the proper digestion of the protein.

Regarding the cases of fat indigestion, it would seem unwise to reduce the protein percentage of a formula, and at the same time reduce the fat; but, practically, if the fat is brought within the infant's digestive tolerance, the protein will be sufficiently well digested so that the eczema will often be relieved or cured. The same is true regarding the well defined carbohydrate indigestions.

The results of treatment in 100 bottle fed and young children were shown by the records for a period of about a year previous to April, 1921. At this date, 45 per cent. are entirely free from eczema; 24 per cent. are much improved; 13 per cent. are definitely improved; 6 per cent. show slight improvement. In 12 per cent. there has been no report, the patient not having returned, or no reply having been received to letters sent.

#### SUMMARY

Faulty digestion of protein, with consequent absorption in an undigested state, is the most striking common feature of these cases of eczema.

The aim of treatment should be to secure complete digestion of ingested protein, either by improving the digestive function or by limiting the intake of offending proteins.

Sensitization of the nursling apparently does occur through foreign proteins ingested with breast milk.

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### CORPUS LUTEUM EXTRACT IN THE TREATMENT OF THE VOMIT- ING OF PREGNANCY\*

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The etiologic factors responsible for the severer cases of vomiting of pregnancy are still undetermined. Some cases are of reflex origin and are easily relieved; others are distinctly neurotic. A goodly proportion, however, must be ascribed to an unknown toxic agent. Williams, De Lee and others believe that a toxemia is an underlying factor in all varieties. It is probable that the ordinary, or so-called "physiologic," nausea and vomiting of early pregnancy and the severer types of the same condition have a common etiology and differ in degree, not in kind.

Hirst<sup>1</sup> believes that the nonabsorption of corpus luteum in early pregnancy is responsible for this distressing ailment. He says:

Every woman, during the period of sexual activity, is constantly absorbing corpus luteum. No sooner is the corpus luteum of one menstruation disposed of than another appears to take its place. With the advent of pregnancy, this absorption ceases.

He asserts that the corpus luteum of pregnancy begins to be absorbed and to diminish in size at the third month, at which time the nausea begins to subside. Thus:

There is sufficient absorption from the corpus luteum of pregnancy to account for the disappearance of the nausea, especially when one realizes that the nausea begins to diminish at the time the corpus luteum has reached its acme of development.

In advancing this theory, however, Hirst apparently fails to bear in mind two points of importance: 1. Nausea and vomiting, even including the mild "morning nausea," are not encountered in more than 50 per cent. of pregnant women. 2. Vomiting has never been noted as one of the cardinal symptoms of the artificial menopause. Thousands of women lose their ovaries yearly in the course of necessary surgical intervention on the pelvic organs; were Hirst's theory correct, these women, suddenly deprived of their corpus luteum and its source, should almost as a routine develop nausea and vomiting.

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1. Hirst, J. C.: Corpus Luteum Extract in the Nausea of Pregnancy, J. A. M. A. **66**: 645 (Feb. 26) 1916; The Control of the Nausea and Vomiting of Pregnancy, *ibid.* **67**: 1848 (Dec. 16) 1916; The Intravenous Use of Corpus Luteum Extract in Nausea of Pregnancy, *ibid.* **76**: 772 (March 19) 1921; The Control of the Nausea and Vomiting of Pregnancy by Intramuscular Injections of Corpus Luteum Extract, Am. J. Obst. **79**: 327, 1919.

2. Shannon, W. R.: Demonstration of Food Proteins in Human Breast Milk by Anaphylactic Experiments on Guinea-Pigs, Am. J. Dis. Child. **22**: 223 (Sept.) 1921



Hirst has been using extract of corpus luteum in the treatment of this condition for several years, and has reported encouraging results. At first he used 1 c.c. daily, given intramuscularly; later he increased this dose, and in his latest paper he advocates its use intravenously, 2 c.c. at a time, the injections varying in frequency from one every other day to one or two a day, depending on the severity of the case. He has reported results as follows: February, 1916, five cases, with four cures; December, 1916, thirty-six cases, with thirty-two cures; 1919, 111 private cases, varying in severity from the very mild form to the pernicious type, of which sixty-five patients were cured, thirty-four greatly improved, eight were not improved, and four were made worse (all four had goiter). Of these 111 cases, eleven were of the pernicious type; five of these failed to respond to corpus luteum treatment, and in two of these five it was necessary to interrupt pregnancy; the other six were completely relieved. Two of the above-mentioned failures were of especial interest; one patient developed urticaria and one a severe headache, which symptoms the author ascribed to anaphylaxis. He is of the opinion that, theoretically, extract of corpus luteum should at times cause abortion, but he has observed no such tendency clinically. Thus, of his series of 111 cases, four patients aborted, which number the author considers below the average.

Quigley<sup>2</sup> reported seventeen cases of varying degrees of severity. Permanent benefit resulted in twelve, or 70 per cent.; four were improved, but relapsed (the relapse was ascribed by the author to insufficient dosage); one case resulted in complete failure, and therapeutic abortion was performed. One case of pruritus was unsuccessfully treated by the corpus luteum extract.

We began to employ this treatment in the obstetric service of Dr. C. Jeff Miller at the Charity Hospital shortly after Hirst published his first paper. We have noticed that, in the indoor services of this institution, only the severer types of the vomiting of pregnancy come under observation; hence our results with any line of treatment would naturally be less favorable than the results obtained in treating such a series as the one of 111 cases (Hirst) previously discussed. From Jan. 1, 1916, to Dec. 1, 1921, fifty-one cases diagnosed as vomiting of pregnancy were treated in the wards of the Charity Hospital, thirty-three in our obstetric service and eighteen in other wards. Two of our patients were really suffering from Korsakoff's psychosis, with incidental vomiting, and should be eliminated. Of the thirty-one patients remaining, three died; of the eighteen treated in other services, two died.

Of the corrected total of forty-nine cases, twelve were treated with extract of corpus luteum; ten of these received corpus luteum only, while two received ovarian extract also. Nine were treated with ovarian extract alone. Twenty-eight patients received the usual treatment of sedatives, gastric lavage, colonic irrigations of sodium bicarbonate solution, forced fluids, glucose, etc.; two of this group were also given horse serum, with negative results. Extreme conservatism was practiced in the management of these cases, and many very ill patients were carried safely through and were later delivered normally. As noted above, five patients died. Of these, one aborted spontaneously and died soon after; one was aborted by vaginal

hysterotomy; abortion by catheter was unsuccessfully attempted in one case; one patient treated along conservative lines died undelivered; the other patient received thirty-six doses of corpus luteum by mouth, twenty-one doses of ovarian extract by mouth, and fluids, sedatives, etc., in addition. Two of these five patients were given corpus luteum; the other three did not receive this treatment.

Of the twelve cases in which corpus luteum was given, five were of the mild form, and were all cured, as follows: One patient was cured after six doses of the extract; one received the same treatment; also six doses of ovarian extract (orally); one received five doses of corpus luteum; one was given six tablets of corpus luteum extract, as well as five of ovarian extract, with no benefit, after this spontaneous abortion occurred, with recovery; the fifth patient received six doses of the corpus luteum extract, as well as drips, sedatives, cocaine by mouth, etc. Four patients received nineteen, sixteen, twenty-four and thirty-six doses of the corpus luteum extract, respectively. In the first three cases it was given intramuscularly; in the last one, intravenously. The results were not satisfactory, and the treatment was changed to sedatives, drips, etc., with steady improvement and eventual cure. One patient received twenty-six doses of corpus luteum extract intramuscularly and sixty-seven doses of ovarian extract by mouth; also drips, morphin, bromids, etc., and was finally cured. Another patient (not in our service) received corpus luteum extract, 4 grains (0.26 gm.) orally, six doses; then "desiccated ovary" by mouth for six doses; then corpus luteum extract by mouth three times a day for ten days; then "desiccated ovary" three times a day for five days; also fluids, drips, sedatives, etc. This patient had a positive Wassermann reaction and some physical signs suggestive of pulmonary tuberculosis, but the sputum was negative. She died undelivered. The twelfth patient received five doses of ovarian extract, then six doses of extract corpus luteum, intramuscularly, and was discharged improved. She returned in three weeks, and was given nine doses of ovarian extract, followed by seven doses of corpus luteum extract. She grew steadily worse, and abortion was attempted by the use of a catheter. She died undelivered that night. Thus, in four mild cases the patients recovered quickly; one aborted spontaneously and recovered; five patients receiving sixteen or more doses were not benefited and were cured by other means, and two patients died. Certainly these results do not seem to prove that the corpus luteum was particularly efficient.

Nine cases were treated by ovarian extract alone, given orally in 5 grain (0.324 gm.) tablets. One patient received eleven doses and was cured after the first tablet; another vomited no more after the fourth dose; two others were well after eighteen doses. The five other patients received 20, 25, 51, 71 and 108 doses, respectively, with slow improvement and eventual cure, but there was no conclusive evidence that the ovarian extract was of any value whatever.

Of the twenty-eight cases treated by sedatives, drips, etc., the percentage of mild and severe cases was about the same as in the groups already considered. Three of these patients died; one undelivered (not in our service), one shortly after spontaneous abortion, and one several hours after evacuation of the uterus by vaginal hysterotomy. It is possible that the employment of more radical measures in the management of these cases would have lessened this mortality; on the

2. Quigley, J. K.: Corpus Luteum Extract in the Vomiting of Pregnancy, with Report of Cases, *Am. J. Obst.* 80: 183 (Aug.) 1919.



other hand, some unnecessary abortions would have been performed on some of the very ill patients that were tided over to later successful delivery.

From the foregoing, it will be seen that I cannot share Hirst's enthusiasm over the corpus luteum treatment. True, some mild cases were cured, but the same can be said of any line of treatment. Two of the severer cases, as noted above, were at first temporarily improved, but later failed to respond to corpus luteum. I noticed in one of these cases that the first twelve ampules (which seemed to benefit the patient) contained a clear solution, but that in other ampules purchased subsequently from another pharmacy the contents were brownish. It seemed that this was not as efficient as the clear solution, but the manufacturers assured me that this change did not affect the potency of the drug. We have also found that ovarian extract, horse serum, thyroid extract and epinephrin do not measure up to the expectations aroused by some articles in the literature. It is my opinion that the best results are obtained by the use of sedatives, colonic irrigations of sodium bicarbonate solution, forced fluids, glucose, etc., and we have reached the conclusion that therapeutic abortion should not be too long delayed in refractory cases. Pinard's dictum that we should abort when the pulse is persistently above 100, while, in my opinion, unduly radical, is a good guide, especially when considered in connection with the general condition of the patient and the laboratory studies of the blood and of the urine.

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## EMPYEMA OF THE ANTRUM OF HIGHMORE SECONDARY TO EXTRACTION OF TEETH

### A STUDY OF ONE HUNDRED CASES\*

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Cases of infection of the antrum of Highmore secondary to the extraction of teeth that have penetrated into the antrum may be divided into three groups:

Group 1. Dental roots lying within the antrum and which, by their extraction, establish an avenue of infection from the mouth through the fistula thus produced. This condition is comparatively rare and, of course, unavoidable. It is far more rare than one would judge from reading a series of dental roentgenograms. The angle at which the rays strike the teeth and the shadow cast often indicate that a root is projecting into the antrum, whereas this appearance is due to the angle at which the picture is taken. The infrequency with which roots are found projecting into an antrum, in radical external operations for chronic empyema, and also in museum specimens, bears out this fact.

Group 2. The very few cases in which the root extends to, and not through, the periosteum and mucosa of the antrum. After the extraction of the root the soft tissues become infected and suppurate, and a probe, inserted for diagnostic purposes, accidentally penetrates into the cavity of the antrum. This again is a comparatively infrequent accident.

Group 3. Cases in which the wall and lining of the antrum are penetrated in the extraction of the tooth. In this group is classified the largest number of

patients. The penetration occurs, first, as a result of the rocking movement of extraction, which tears into the antrum at the point immediately above and in contact with the root, and, secondly, failure to extract all of the root, and in attempting to place forceps around the remaining fragment pressure is made for the purpose of pushing aside the soft parts, thus dislocating the root upward and penetrating the antrum. The condition is also commonly found following the older method of simple extraction, in contradistinction to the newer methods in which the soft parts are incised and the tooth lifted from its socket. As a matter of record, it was observed that the greater number of the patients in this group had had simple extraction of teeth, instead of a modified open operation.

### FISTULAS

Empyema and fistulas do not result in all cases in which roots extend into the antrum, for two reasons: The soft parts fall together in close proximity and heal by primary union, or the parts may be sutured together. If the passage between the mouth and the antrum closes unaided, or is closed by suture so that a dead space does not form in the soft parts, a fistula seldom occurs. The fact that food is continually forced into such an opening retards the immediate healing of the wound, because the particles work in between the line of union and force the edges apart mechanically.

The tendency of fistulous tracts is to close early; but, if they are allowed to remain open, or are kept open by packing, rubber tubes, and so forth, they become lined by epithelium, and a permanent fistula, which cannot be eliminated by simple curettement, is the result. It is, therefore, an important surgical principle to use measures early which will aid in closing the tract.

In some cases the fistula may close by primary union, without aid or by suture, but an empyema of the antrum develops which pathologically is a small cell infiltration of the periosteum and mucosa with a serous discharge. This later becomes purulent, the mucosa becomes edematous, and the ordinary cycle of an inflammatory process results. The only difference (but an important one when treatment is considered) between an ordinary inflammatory process and an inflammation of the mucosa of the antrum is the fact that the epithelium of the latter is ciliated, and the active motion of these cilia is toward the normal ostium. Again, an important point is the fact that a fistula resulting from the extraction of a tooth is located at the lowest point of the antrum, and is, therefore, the easiest avenue for drainage from the antrum. This works against early closure of the opening because the drainage of the antrum is accomplished by gravity through it.

### ANALYSIS OF CASES

The data were obtained from the records of the Mayo Clinic and from the answers to questionnaires sent to 100 patients in the summer of 1921.

The average duration of the infections with fistulas was 349 days, the shortest was three days, and the longest ten years, thus showing that for the most part the cases were relatively long standing and chronic.

The average time of treatment before the patients came to the clinic, as estimated by them, was 170 days. This not only indicates that the cases were relatively long standing, but that the condition was probably incorrectly treated.

The various forms of previous treatment are interesting features of the study of these cases, and show a

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lack of understanding with regard to the pathologic condition and the surgical principles involved in cure.

Sixteen per cent. of the patients were treated entirely by the dentist. This percentage is undoubtedly low because, in many of the cases, no mention was made of a physician in charge. The methods of previous treatment are, briefly: (1) rubber tube through fistula with alveolar irrigation of antrum; (2) curettement of fistula with alveolar irrigation of antrum; (3) alveolar irrigation of antrum; (4) alveolar irrigation of antrum with alveolar packing with gauze; (5) intranasal Krause window resection, alveolar operation, and alveolar gauze packing; (6) alveolar operation and alveolar gauze packing, and (7) alveolar gauze packing.

In most cases, 18 per cent., the treatment consisted of irrigation of the antrum through the fistula. Curettement of the fistula and alveolar irrigation, and alveolar irrigation and gauze packing, were resorted to in 6 per cent. of the cases. Irrigations were carried out through a rubber tube sewed into the fistula in 4 per cent. In general, most forms of treatment were instituted through the fistulas, and in themselves stimulated the formation of an epithelial lining in the tract, thus making it a permanent opening. For the most part an occasional irrigation by the intranasal route was all that was attempted, and in only one case had even a modified Krause window resection been performed. In other words, all the treatment instituted to cure the empyema and close the fistula was wrong in principle.

#### TREATMENT AND RESULTS

Two general principles of empyema of the antrum have been mentioned, namely, drainage of the cavity at its most dependent part by the fistula, and the active motion of the cilia lining the antrum toward the median line. With these as basic principles, the exact treatment depends on the duration of the infection, its previous treatment, and the amount of alveolar necrosis.

In acute cases, the majority of antrum infections secondary to a dental root extraction will clear up with a modified Krause window resection in the inferior meatus, and suction and occasional lavage through this opening. The fistula, if small and slitlike, should be curetted gently; if large, it should be curetted gently and closed by sutures. Too active or too frequent lavage should be avoided, since suction will remove all fluid from the antrum. If lavage is used daily it may waterlog the membrane. The motion of the cilia tends to produce drainage through the nose. The kind of fluid used in lavage seems not to be important because its chief effect is simply the mechanical cleansing of the cavity and the stimulation of the membrane, which produces temporarily a somewhat richer blood supply.

In subacute cases, the same principles of treatment are carried out. The chief difference between the subacute and the acute cases is that infection of the antrum is of longer duration; the fistulous tract probably has become lined with epithelium, and therefore will not close by simple means. Lavage may be used more often than in acute cases, and the modified Krause resection should be made large and as low as possible. The fistula should be thoroughly curetted in order to give it an opportunity to close. A surprising number of subacute cases clear up by these simple measures. If the fistula does not close, three measures are available: (1) simple suture of the opening after excising the lining of the tract; (2) a radical plastic operation, and (3) the use of a temporary denture, if the tract is very small.

In the plastic closure, the operation may consist simply of trimming the edges for a short distance in all directions, curetting any underlying necrosed bone, and closing by sutures over soft sterile rubber tubing to prevent the suture from cutting. If the tract is large, a more radical plastic operation may be necessary. Since in such a case the soft tissue over the hard palate is available, an incision near the middle line of the hard palate will allow that entire side to be elevated and brought over the fistulous opening, which has been excised and curetted. Closure may be made as described. A denture is made in acute and subacute cases in an attempt to keep the food particles out of the fistula. The denture is fitted as perfectly as possible, and should be removable so that it may be kept clean. It is attached to the teeth on each side of the opening and, of course, is not made with a projection into the fistula. As a rule, such a denture is difficult to make because, if food and liquids escape into the area of the fistula, its purpose is not accomplished.

In chronic cases, the same procedure is carried out. These uses are characterized by the presence of chronic infection of the antrum, and the epithelium-lined fistulous tract. Here, again, by relatively simple means the antrum often clears up rapidly and the fistula closes. It is, therefore, advisable to employ the conservative measures for some time before attempting the more radical.

In protracted cases in which treatment is resisted, a radical external operation on the antrum, with excision of the fistulous tract and radical plastic closure, may be necessary.

In all of the cases studied, with eight exceptions, the condition cleared up by simple means. A radical plastic closure of the fistula was necessary in four cases, a Denker operation was required in one; dentures were used to keep food from the tract in two, and the condition rapidly cleared after an adjacent infected tooth had been extracted and the alveolar necrosis curetted in one. The rubber tubes sutured into the antrum through the fistulas were, of course, removed; in one case a long strip of gauze was also removed.

The average course of treatment in the clinic was twenty-six days; the shortest was four days, and the longest three months and ten days. The ultimate result, that is, if the antrum remained clear, or if the fistula remained closed, was judged from the answers to the questionnaires, which showed that the fistula is patent in eight of the patients. On first thought this might appear to be a high percentage of failures; but, on the other hand, since only four plastic operations were performed, it illustrates the fact that even longstanding chronic cases of empyema of the antrum with fistula can be cured by relatively simple means. Undoubtedly, some of these eight patients with failures might have been cured by simple plastic operations. The results indicate the wisdom of the modified Krause window operation, followed by simple measures, and the folly of irrigation and treatment through the fistula.

#### CONCLUSIONS

1. Treatment of infection of the antrum through an alveolar fistula does not seem advisable.
2. If the antrum has become infected, adequate intranasal drainage gives infinitely better results.
3. Care should be taken to avoid the formation of a permanent alveolar fistula.
4. An alveolar fistula may be closed after treatment has cleared up the empyema of the antrum.



## OUTBREAK OF EPIDEMIC JAUNDICE AMONG COLLEGE STUDENTS

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Although outbreaks of jaundice have been known for years in this country, occurring in families, institutions and communities, information as to the epidemiology of the disease is meager. Evidence has been presented<sup>1</sup> which suggests that direct contact may have been a factor in transmitting jaundice among college students at Hanover, N. H. (Gill, 1908), and at Ann Arbor, Mich. (Cummings, 1915). Da Costa<sup>2</sup> and others have assembled data which "indicate that epidemics of jaundice closely simulating those now known to be caused by *Spirochaeta icterohaemorrhagiae* have occasionally appeared in this country, and that they were possibly due to this parasite." This author has also found, from a study of reports of several outbreaks, that very few cases occur in summer as compared with the fall and winter seasons. In 1920, Blumer<sup>3</sup> described several cases which had come to his attention in the New Haven Hospital, and suggested that all cases of catarrhal jaundice should be regarded as infectious.

The recent occurrence of an epidemic of jaundice among the students of Yale University presented an opportunity for studying the symptomatology and epidemiology of this disease in a group of sixty-nine cases, sixty-three of them having an onset within a period of fifteen days.

Of the sixty-nine cases considered in this study, fifty-seven came under our direct supervision through the Department of University Health, and gave fairly complete histories. Several of the students became sick about the time of the Thanksgiving recess, and were treated by their family physicians.

The duration of the disease is usually from ten days to three weeks. In some instances it has been difficult to determine the date of onset, as the prodromes were mild and the existence of the disease was not recognized until the appearance of the jaundice itself.

The first symptom noted was generally weakness, all the patients reporting that they felt unduly tired, and twenty-six, or 45 per cent., reporting headaches, among other symptoms. Twenty-two patients, or 32 per cent., noted a loss of appetite early in the course of the disease, and this became universal as the disease advanced. Nausea was reported in eleven instances, and fainting

in one. Chills were noticeable in only fourteen cases, or 20 per cent. In but twelve instances was the temperature above normal at the time the patients were first examined. The pulse was normal in most instances. Thirteen men stated that it pained them to move their eyes from side to side. Several had pains in the back or side. The bowels were irregular in most instances, and the stools lacked normal color. In general, we may say that the only universal symptoms were weakness, so pronounced that almost all patients had eventually to go to bed, loss of appetite, and the characteristic jaundice. Some of the men who were taken sick before the Princeton and Harvard football games endeavored "to stick it out" until after the festivities were over, but these men were eventually obliged to go to bed like the rest. Seventy-six per cent. of the urines examined showed bile and but few showed albumin. A few specimens of urine examined for spirochetes gave negative results. None of the cases were fatal.

At the outset, it is interesting to note that the outbreak was confined to the university, and that 52 per cent. of the cases occurred in the freshman class; of these, 4.2 per cent. had jaundice, as contrasted with only 1.8 per cent. for the whole student body. Seventy-two per cent. of the cases in the first week of the out-

break were from the freshman class, the first of these being that of a freshman, November 6. We have a record of one case in college earlier in the year, that of a sophomore who was sick from October 3 to 18. The freshmen have a greater tendency to associate with men of their own class than do

the other classes, and this is a probable factor in the high incidence in this group of men.

Chart 1 shows the curve for the epidemic, and indicates the relationship between the total cases and those among the men in the freshman class. Three peaks are noted in the course of the outbreak, November 11, 14 and 21. Thirty-seven of the sixty-eight cases shown in the graph had an onset between the 8th and the 14th, the third peak with eight cases coming a week later. The disease in the last group of cases, as a rule, was milder than that in the first group.

The men who were sick were questioned as to any close friends who had been sick with jaundice, and their replies were compared with our records. In this way we found that forty-seven of the men had a total of seventy-four friends who had jaundice (some of the names were mentioned more than once). Ten of the friends were taken sick on the same day as the men questioned, while there was a difference in onset of from one to three days for twenty-six cases, from four to fourteen days for thirty-six cases, and over fourteen days for two cases. Twenty-two patients developed jaundice between three and nineteen days after the time their friends were taken sick, the mode being 5 days and the mean 7.2 days.

In order to determine whether or not a miscellaneous group of students would give a history of "friends with jaundice" similar to the foregoing, we prepared a series of questions for an equally large number of men

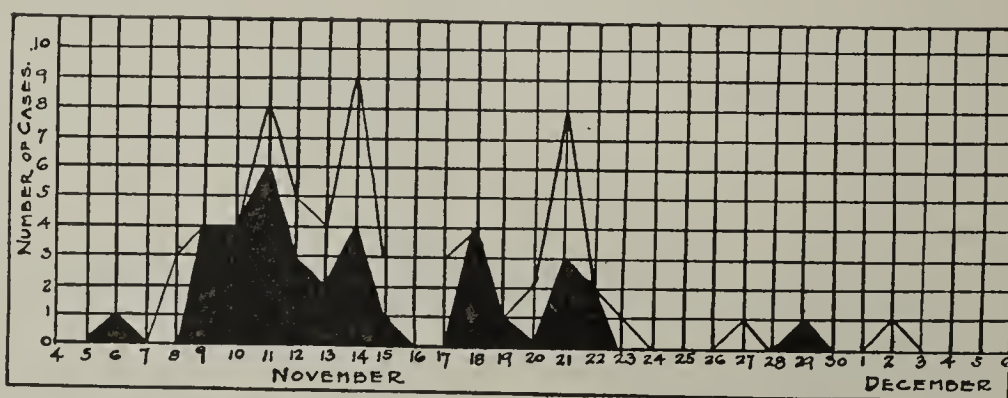


Chart 1.—Cases of jaundice, by days of onset, for the college and for the class of 1925.

1. Da Costa, J. C.: Handbook of Medical Treatment, Philadelphia, F. A. Davis Company, 1920, p. 884.

2. Da Costa, J. C.: Handbook of Medical Treatment, pp. 881-890.

3. Blumer, George: Remarks on Infectious Jaundice, Tr. Connecticut State M. S., 1920.



appearing daily at the Department of University Health for one cause or another. With two exceptions these men reported practically no friends sick from the disease.

We have at least five interesting examples of close personal contact: 1. One man developed jaundice ten days after his roommate was taken sick. 2. Two men in a small rooming house developed jaundice, one five

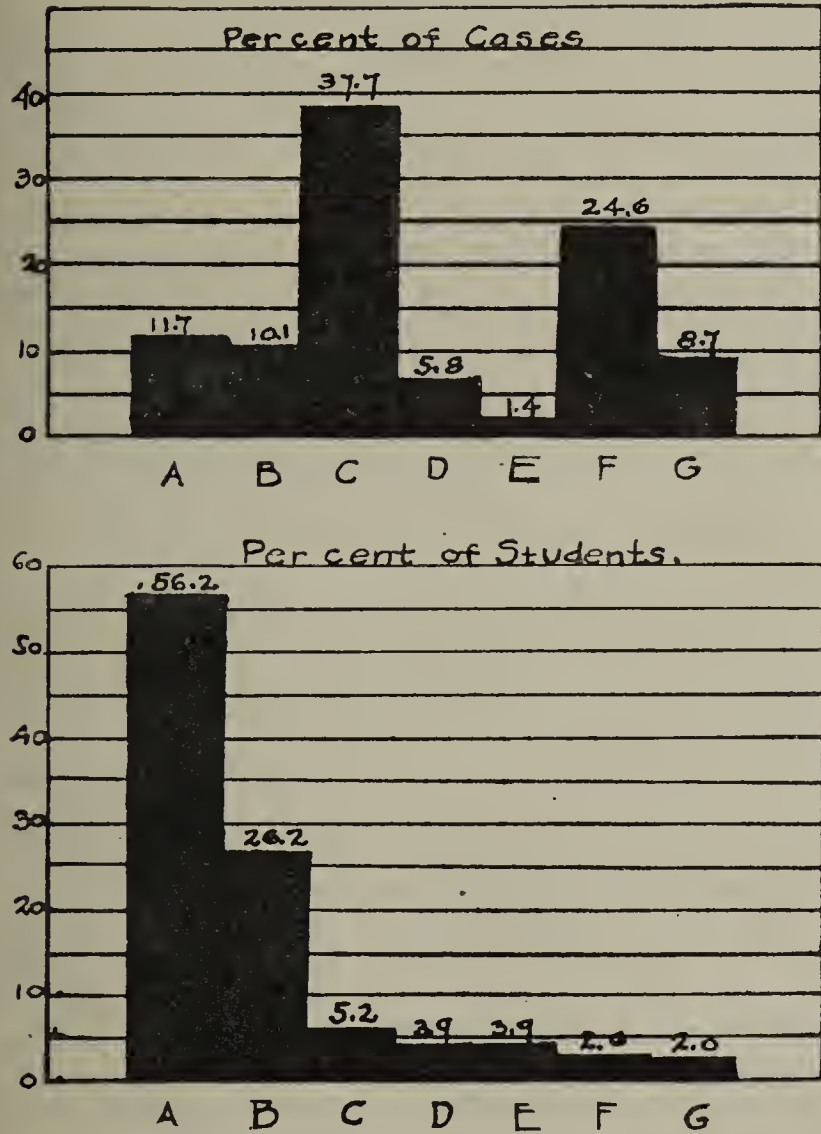


Chart 2.—Classification of eating clubs by percentage of cases of jaundice and by percentage of students eating in the different clubs, A, B, C, D, E, F and G.

and the other seven days after one of their friends in the same house went to the infirmary with the disease. 3. One of our first patients lived in a small rooming house; two of his friends in the same house developed jaundice five and ten days, respectively, after he did. 4. Two roommates, both intimate friends of a third man, developed jaundice eight days after he was taken sick. 5. A freshman went home with jaundice and was nursed by his mother, who two weeks later developed icterus herself. She called in one of the university physicians, who stated that her case was similar to those in college.

More striking than the class or dormitory association is that of the high incidence in two small eating clubs, C and F, and the few cases among the patrons of the commons, B, which feeds about one fourth of the student body. This relationship is shown in Chart 2.

Sixty-two per cent. of the cases occurred in eating clubs C and F, which feed only 7.8 per cent. of the men in college, while an additional 8.7 per cent. of the cases occurred in club G, which feeds only 2 per cent. of the men in college. The first case in G appeared in a man who was a friend and lived near a diner of club C, who had jaundice at least five days before. Two other

patients from G club were friends of this first G patient, and developed jaundice ten days after he was taken sick.

Of the nineteen cases occurring in patients eating at clubs other than C, F and G, nine were intimate friends of one or more men at these clubs. One of the ten men who was eating at a club other than those mentioned above had jaundice, November 8, and three of his friends, also in this miscellaneous group, developed jaundice four, five and six days afterward.

At first we thought that this high incidence in these three eating clubs might be connected with a spread of the disease through some form of local contamination, perhaps by rodents, whose agency has proved important in other types of infectious jaundice. It was reported to us that mice and rats were not uncommon, and traps were set with the result that several mice but no rats were caught. Examination of these animals both culturally and microscopically by Dr. Hickson of the Department of University Health yielded negative results. A more careful study of the time and place relations of the epidemic as indicated in Chart 3 convinced us that the eating houses were probably merely foci for human contact. It will be noted from the data presented in Chart 3 that the incidence was not high for any particular eating club or any particular date, and that the epidemic began quite as early or earlier in the miscellaneous group of eating houses A, D, and E, as in the two clubs which were later most markedly affected, F and C. A careful inspection of eating clubs C, F and B was made, and the cooks and other servants were carefully questioned. We found no evidence of sickness except in the person of one waiter and three of the student checkers who stand at the door and

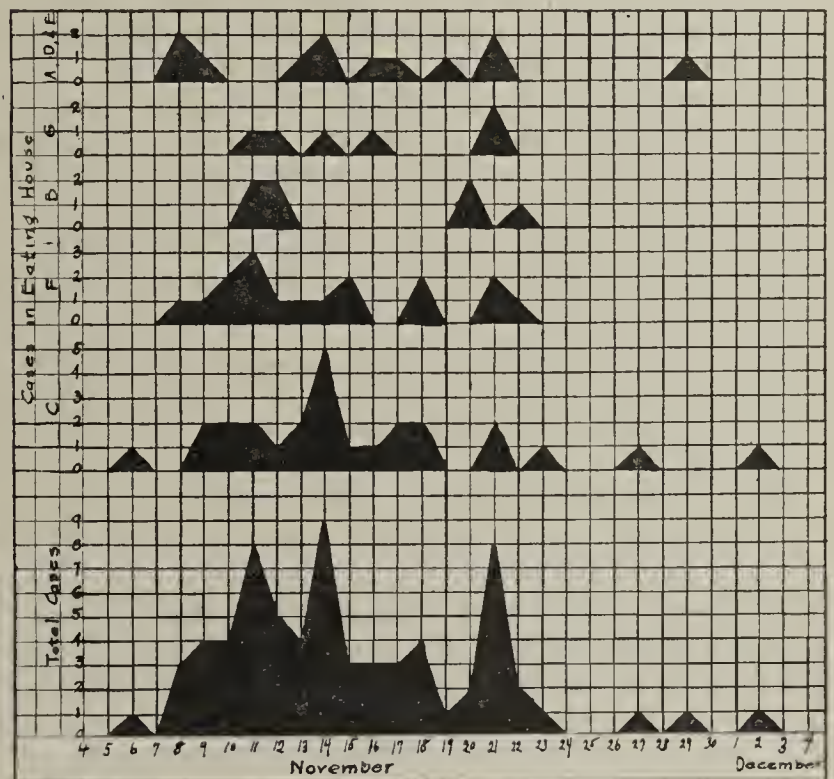


Chart 3.—Cases of jaundice by days of onset for the college and for different eating clubs, 1921.

check the men as they come in for meals. Checkers in clubs C, F and G were all affected during the early course of the epidemic, and may have formed foci of infection in the case of later instances. Clubs C and F are located in old houses, and when the dining rooms are filled there is much crowding. The dishes are washed at sinks with hot running water, but the temperature of this wash water depends entirely on the judgment of the dishwashers, no mechanical washers



being used in these two houses. We could find no evidence that articles of food from any common source played any part in the spread of the outbreak.

#### SUMMARY

We have reported here an epidemic of sixty-nine cases of infectious jaundice, all but six of which occurred within a period of fifteen days. The most prominent symptoms were pronounced weakness, loss of appetite and the appearance of the jaundice itself. It appears from our study that the majority of the sixty-nine cases reported originated in contact infection either by direct transfer from person to person or in some instances perhaps by infection of eating utensils at two eating clubs patronized by the majority of the students affected.

### THE SCHICK TEST

#### STANDARDIZATION OF DIPHTHERIA TOXIN FOR THE TEST AND OF HEATED DIPHTHERIA TOXIN FOR THE CONTROL; METHODS OF DILUTING THE TOXIN

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The great value of the Schick reaction and its rapidly increasing popularity have created a demand for the material to be used for the Schick test and for the control test. Nearly every manufacturing laboratory of biologic products is at present supplying the toxin for the Schick test in some form. Some of these resemble the outfit suggested by me<sup>1</sup> in 1915, and since that time supplied by the Bureau of Laboratories of the New York City Department of Health. This outfit consists of a glass capillary tube containing 1.5 minimal lethal dose (1.25 M. L. D. + 0.25 M. L. D. excess to allow for some deterioration of the toxin on standing) of a well ripened diphtheria toxin, a small rubber bulb for expelling the toxin, and a 10 c.c. bottle of sterile salt solution as a diluent. The test dose is 0.2 c.c. and represents 1/40 minimal lethal dose (actually between 1/33 and 1/40 minimal lethal dose) of toxin. The outfit is sufficient for testing about thirty-five to forty-five children.

Other laboratories supply a Schick outfit consisting of a small vial, which is apparently empty but contains the toxin that has spread in the form of a thin film, and a second vial which contains the saline diluent. The toxin in the vial is either the original filtered broth culture alone, or the broth culture diluted with glycerin. The directions with some of these outfits are to use a syringe for withdrawing a small amount of the diluent, and to rinse out with this the vial containing the toxin. The diluted toxin is then added to the remainder of the diluent, which is shaken and ready for use. In other outfits the bottle containing the toxin is of the same size as that containing the diluent, and the directions are to empty the diluent by means of a syringe into the toxin bottle.

In still other outfits the undiluted toxin is supplied in a small vial, with a capillary measuring pipet and a larger bottle of saline diluent. The directions are to

add with the small pipet a certain number of drops or a certain definite amount of the undiluted toxin.

Some of the laboratories direct that after the Schick test has been made, the remainder of the diluted toxin be heated and used for the control test.

The outfits supplied by the different commercial laboratories vary in size. Some are sufficient for the testing of ten individuals, others for the testing of twenty, fifty, 100, etc.

A comparative examination of a number of these commercial preparations was carried out by me<sup>2</sup> about two years ago to determine their strength and reliability. I found in several instances that the toxic strength of the dilution was considerably below that of a standard dilution of toxin.

A recent experience also at the Bureau of Laboratories has shown us with what care Schick outfits have to be prepared. A certain lot number of the outfits were found to contain only about one third of the toxin content they were supposed to have. Careful investigation by Park and Banzhaf revealed the interesting fact that the capillary glass tubes in a certain shipment were quite alkaline. This alkalinity of the wall of the capillary tubes was sufficient to destroy in a short time a considerable amount of the toxin that was put into them.

The danger of using an outfit which contains an insufficient amount of toxin is apparent. This danger consists in giving false ideas of the immunity of the tested individuals. Many children who give a negative Schick reaction with such a weak dilution of toxin would have shown a positive reaction with a stronger dilution, which was of standard strength. Under certain conditions some of these children might later develop diphtheria, and the presence of the disease in a Schick negative child would be naturally taken by the physician as proof of the unreliability of the Schick test. It is, therefore, always a good point to remember that the absence of positive Schick reactions in any considerable group of tested individuals should make one suspicious and lead to a careful investigation of the dilutions of toxin that were used.

For these reasons it is becoming more and more important that physicians who wish to carry out the Schick test in their private practice, in schools, in institutions or in hospitals with which they are connected should have a thorough knowledge of the material they use for the test. Otherwise they are simply working with dilutions of unknown strength, and the results they obtain are likely to lead them into serious error. The confidence of these physicians will soon be shaken in the accuracy of the different results which they obtain, and ultimately also in the reliability of the Schick test.

In a paper<sup>3</sup> published in 1916 and entitled "Methods of Using Diphtheria Toxin for the Schick Test and of Controlling the Reaction," I suggested that the toxin for the test could be conveniently distributed and used in one of two ways:

(a) For a small number of tests: an outfit similar to the one I described.

(b) For a large number of tests: a vial of the undiluted bulk toxin, to be diluted by the physician according to the given directions.

2. Zingher, Abraham: Accuracy of the Schick Reaction: Influence of Variations in Diphtheria Toxin Content in Schick Outfits, *J. A. M. A.* 75: 1333 (Nov. 13) 1920.

3. Zingher, Abraham: Methods of Using Diphtheria Toxin in the Schick Test and of Controlling the Reaction, *Am. J. Dis. Child.* 11: 269 (April) 1916.

1. Zingher, Abraham: A Simple Outfit for the Distribution of Diphtheria Toxin for the Schick Test, *J. A. M. A.* 65: 329 (July 24) 1915.



## THE SCHICK TEST OUTFIT

It is of special importance that the outfit for the Schick test and for the control test shall be of such standard strength that the reactions obtained with them will be reliable in indicating the susceptibility or immunity to diphtheria of the tested individuals. The various forms in which these outfits are obtainable from different manufacturing and health department laboratories, and the uncertain results which many physicians have noted in using these preparations, indicate strongly the urgent necessity of official standardization of these outfits.

The experience of various physicians, as conveyed to me in written and verbal communications from different parts of the country, have convinced me that outfits for a small number of Schick tests are not always satisfactory. Diphtheria toxin, as usually supplied, is a very potent solution, and the amount that has to be measured at the laboratory into the capillary or vial is very small. For the five or ten test outfits the amount of toxin is so minute that it becomes very difficult to measure it out with accuracy unless the toxin has been previously diluted.

It is important that the physician should realize, first, that it is better to make one Schick test and to discard the diluted toxin of the larger outfit, which is more likely to be accurate in strength, than to trust to the varying strengths of the smaller outfits; and, secondly, that the expense to the manufacturing laboratories in putting up the larger outfits is only slightly greater than that incurred by them in putting up the smaller outfits.

It is for these reasons that the following standardization of Schick and control outfits is recommended to the different manufacturing laboratories, so that physicians using their preparations will be able to have confidence in the reactions they obtain. It is hoped that a centralized official bureau will be able to require and enforce these or similar standards, that can be controlled by animal test, of all manufacturing laboratories shipping their products in interstate traffic. Such an official standard would be of great importance in controlling the reliability and accuracy of the different Schick outfits.

In standardizing these outfits, we must have a maximum and a minimum allowable variation in the amount of toxin. The maximum amount should be one that will be safe for use in human beings. By safety is meant a strength of toxin dilution that will give a well pronounced positive reaction but will not produce necrosis of the skin in individuals who have not even a trace of antitoxin. The minimum amount should be one that will still give a typical positive reaction in a nonimmune individual.

We have found that 1/40 minimal lethal dose in 0.2 c.c. is the equivalent of the dilution recommended by Schick (1/50 minimal lethal dose in 0.1 c.c.) in showing susceptibility or immunity to diphtheria. The relatively stronger dilution of toxin recommended by Schick often gives severe positive reactions and even superficial vesiculation and necrosis in those who have no antitoxin in their circulating blood. The dilution of toxin containing 1/40 minimal lethal dose in 0.2 c.c. gives more clearly defined positive reactions in susceptible individuals than the one previously recommended, which contained 1/50 minimal lethal dose in 0.2 c.c.

*Standards for the Schick Test Outfit.*—It is suggested that the outfit of diphtheria toxin for the Schick

test shall contain the following maximum and minimum contents of diphtheria toxin:

1. If the directions on the outfit call for 0.2 c.c. as the dose for the Schick test, the toxin content shall be no more than 1.5 M. L. D. and no less than 1.25 M. L. D. to each 10 c.c. of diluent; 0.2 c.c. of the diluted toxin shall, therefore, represent no more than  $\frac{1}{33}$  M. L. D. and no less than  $\frac{1}{40}$  M. L. D. for a 250 gram guinea-pig.

2. If the directions on the outfit call for 0.1 c.c. as the dose for the Schick test, the toxin content shall be no more than 2.5 M. L. D. and no less than 2.0 M. L. D. to each 10 c.c. of diluent; 0.1 c.c. of the diluted toxin shall, therefore, represent no more than  $\frac{1}{40}$  M. L. D. and no less than  $\frac{1}{50}$  M. L. D. for a 250 gram guinea-pig.

When this stronger dilution of toxin is used, the directions on the outfit shall caution against injecting more than 0.1 c.c. Otherwise the positive reactions are likely to be quite severe in the individuals who have not even a trace of diphtheria antitoxin in their circulating blood.

To allow an official standardization and also an individual check on these outfits, it is suggested that no single outfit for the Schick test shall contain less than one minimal lethal dose of diphtheria toxin. Outfits containing one minimal lethal dose of toxin could be easily tested for potency in guinea-pigs. Such outfits would be sufficient for from thirty-five to forty-five Schick tests.

The minimal lethal dose of diphtheria toxin, as defined by the Hygienic Laboratory, is the smallest amount of toxin that will kill the average guinea-pig weighing 250 gm. in less than four days. This varies with individual guinea-pigs, some of the animals dying on the third, others on the fourth day.

*Standard for the Control Test Outfit.*—The control test with heated toxin is important in assisting the observer in the more careful and accurate interpretation of the Schick reaction, and especially in reading the negative-pseudo and positive-combined reactions in children over 6 years of age. The pseudo element in these reactions is produced in a large degree by the autolyzed protein of the diphtheria bacillus, which is present in the culture fluid. Heating to 75 C. for ten minutes a preparation of diphtheria toxin culture fluid destroys the soluble toxin but affects only slightly the autolyzed protein. By using the same preparation of toxin for the control test as we do for the Schick test, we make certain that an almost equal amount of such autolyzed protein is injected in the control test.

In heating the culture fluid to destroy the toxin, a slight deterioration of the autolyzed protein takes place. This difficulty can be overcome by adding a 20 per cent. excess of heated toxin in the control test, as compared with the unheated toxin supplied for the Schick test.

## THE UNDILUTED BULK TOXIN

Accumulating experience<sup>4</sup> with the Schick test has shown us that the careful and accurate dilution of undiluted bulk toxin is the most reliable and expedient way for the testing of large numbers of individuals. The testing on a large scale generally has to be carried out in schools, institutions, hospitals, clinics, etc. Physicians who handle such bulk toxin must realize that there are certain distinct dangers connected with its use. An error in the making of the dilution and the injection of too large an amount of concentrated toxin dilution may result in necrosis, sloughing arms and

4. Zingher, Abraham: Diphtheria Prevention Work in the Public Schools of New York City, J. A. M. A. 77:835 (Sept. 10) 1921.



even loss of life. An intelligent appreciation of the proper methods of diluting such toxin will easily avoid these dangers, and enable us to obtain accurate, dependable and uniform results in the testing of large groups of individuals. As a rule, such work will fall in the hands of physicians who are connected with municipal, state or federal departments of health, or with institutions and schools. Centralized instruction through the departments of health will help a great deal in making the Schick test a uniform and safe procedure.

The following procedure is recommended for making the dilutions from bulk toxin:

A. *Dilutions of Bulk Toxin for the Schick Test* (compare accompanying table).—1. The primary Schick dilution is first made from the undiluted bulk toxin. The amount of salt solution to be used for a certain amount of toxin depends on the strength of the toxin, as stated on the label by the M. L. D. This should always be given accurately. The primary Schick dilution is always made so that 1 c.c. contains 10 M. L. D. The following examples are given to facilitate the calculations:

(a) Toxin with an M. L. D. of  $\frac{1}{100}$  c.c. Each cubic centimeter of toxin contains 100 M. L. D. Primary Schick Dilution is made by adding 1 c.c. of undiluted bulk toxin to 9 c.c. of salt solution.

METHOD OF DILUTION OF UNHEATED AND HEATED DIPHTHERIA TOXIN

M. L. D. of Toxin	Primary Schick Dilution or Primary Control Dilution				Final Schick Dilution				Final Control Dilution		
	Amount of Undiluted Toxin,	Amount of Salt Solution,	Total Primary Dilution,	Number M. L. D. in Each C.e. of P. S. D.	Amount of Primary Schick	Amount of Salt Solution,	Total Final Dilution,	Amount of Toxin in 0.2 C.e.	Amount of Primary Control Dilution,	Amount of Salt Solution,	Total Final Dilution,
	C.e.	C.e.	C.e.	P. S. D.	C.e.	C.e.	C.e.	M. L. D.	C.e.	C.e.	C.e.
1/150	1.0	14.0	15.0	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25
1/125	1.0	11.5	12.5	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25
1/100	1.0	9.0	10.0	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25
1/90	1.0	8.0	9.0	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25
1/75	1.0	6.5	7.5	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25
1/60	1.0	5.4	6.0	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25
1/50	1.0	4.0	5.0	10	1.0	79.0	80.0	1/40	1.25	79.0	80.25

(b) Toxin with an M. L. D. of  $\frac{1}{75}$  c.c. Each cubic centimeter of toxin contains 75 M. L. D. Primary Schick dilution is made by adding 1 c.c. of undiluted bulk toxin to 6.5 c.c. of salt solution.

(c) Toxin with an M. L. D. of  $\frac{1}{125}$  c.c. Each cubic centimeter of toxin contains 125 M. L. D. Primary Schick dilution is made by adding 1 c.c. of undiluted bulk toxin to 11.5 c.c. of salt solution.

2. The final Schick dilution of toxin, which is actually used in the test is made as follows:

One cubic centimeter of primary Schick dilution added to 79 c.c. of salt solution gives a final dilution of such strength that 0.2 c.c. represents  $\frac{1}{40}$  M. L. D., the amount used in making the test. The calculations are as follows:

One cubic centimeter of primary Schick dilution, which contains 10 M. L. D., added to 79 c.c. of salt solution, gives a dilution of toxin, of which 8 c.c. contains 1 M. L. D., 1 c.c. contains  $\frac{1}{8}$  M. L. D., and 0.2 c.c. contains  $\frac{1}{40}$  M. L. D.

The primary and final Schick dilutions can be quickly and accurately prepared in field work by means of the imported "original" 1 c.c. record syringes. I have carefully examined against a standard 1 c.c. pipet two dozen of the "original" record syringes and have found less than 3 per cent. error in them. For safety, however, the individual syringes used for this purpose should always be carefully tested. No laboratory pipet will then be necessary for making the dilutions of the toxin. Any amount can thus be quickly prepared with the syringes, and the physician handling the toxin dilution will have the assurance that the test fluid he uses is very accurate.

A package which contains (a) a vial with 2.5 c.c. of undiluted bulk toxin, (b) a small bottle with the necessary amount of salt solution for the primary Schick dilution and (c) a larger bottle with 79 c.c. of salt solution for the final Schick

dilution will be found very convenient for this purpose. To make the primary Schick dilution, add, with the 1 c.c. record syringe, 1 c.c. of undiluted bulk toxin to the small bottle of diluent. Rinse the syringe out in this dilution and then add 1 c.c. of primary Schick dilution to the larger bottle containing the 79 c.c. of salt solution. Now rinse the syringe in the final dilution, which will then be ready for use.

For testing more than 300 individuals, have on hand several bottles, each containing 79 c.c. of salt solution, so that additional amounts of final Schick dilution can be prepared. The ordinary 3 ounce bottle, obtainable in drug stores, will serve this purpose very well. A sufficient amount of final Schick dilution can thus be made from 1 c.c. of undiluted toxin to test about 3,000 individuals. The cost of this amount of diluted toxin will be less than 50 cents.

B. *Dilutions of Heated Bulk Toxin for the Control Test.*—1. The primary control dilution is made in exactly the same way as the primary Schick dilution by using undiluted heated bulk toxin. For the reasons stated under standardization of Schick outfits, it is strongly advisable to use the same preparation of heated toxin in making the control dilutions that is being used unheated for the Schick test dilutions. We will thus assure ourselves of a similar amount of autolyzed protein in both the test and the control fluid.

2. The final control dilution is made by adding 1.25 c.c. of the primary control dilution to 79 c.c. of salt solution. We use 1.25 c.c. in making the final control dilution instead of 1 c.c. which is used in making the final Schick dilutions from

the primary Schick dilution. This 20 per cent. excess allows for any slight deterioration in the autolyzed protein that may have taken place during the process of heating the toxin, and assures practically an equal amount of the reacting protein in the test and control fluids. This factor is important in that it helps us to distinguish the negative-pseudo from the positive-combined reaction.

A package similar to the one suggested for the Schick test will be found convenient also for the control test. If the unheated and the heated undiluted toxin are supplied for convenience in the same package, then the two vials should be distinctly labeled so as to diminish to a minimum the possibility of error.

A red label marked "Poison" might be used as a mark of distinction on the unheated toxin vial, so as to indicate the necessity of caution in the making of the dilutions. The Bureau of Laboratories supplies a package containing 2 c.c. of undiluted toxin with this distinctive label.

It is not advisable that the primary dilution shall be used after three days. The final dilutions should be prepared on the day on which they are to be used.

#### METHOD OF MAKING FINAL SCHICK AND CONTROL DILUTIONS DIRECTLY FROM UNDILUTED BULK TOXIN

The most convenient method for quickly and accurately making the final dilutions is to add the unheated and the heated undiluted bulk toxin directly to the larger bottles of salt solution by means of a carefully standardized  $\frac{1}{4}$  c.c. syringe, or a  $\frac{1}{4}$  c.c. attachable measuring pipet.

For some time I have used a  $\frac{1}{4}$  c.c. imported "original" record syringe, the so-called Barthelémy syringe. It is divided into fifteen subdivisions, each subdivision representing  $\frac{1}{60}$  c.c.



The toxin that I have used had an M. L. D. of  $\frac{1}{80}$  c.c. By adding nine subdivisions of toxin to 100 c.c. of salt solution, I quickly prepared the final Schick dilution (0.2 c.c. =  $\frac{1}{40}$  M. L. D.). For the final control dilution I used eleven subdivisions of heated toxin to 100 c.c. of salt solution.

In making the dilutions in this way it is only necessary to determine accurately for a certain toxin preparation, the minimal lethal dose of which is known, the number of syringe subdivisions of unheated toxin that have to be added to the large bottle of salt solution. Two additional subdivisions should be added in making the final control dilution from the heated toxin.

One of the large manufacturing firms is supplying at my suggestion in one container a set of two 1 c.c. record type "master" syringes and a small glass measuring pipet attachable to the syringe called a "precision adapter," as illustrated herewith. This is a  $\frac{1}{4}$  c.c. glass pipet, which is accurately divided into twenty-five subdivisions. Each subdivision represents 0.01 c.c.

An accurate  $\frac{1}{4}$  c.c. syringe which is subdivided into twenty-five parts will also serve the purpose very well.

The calculations for the unheated toxin to be added to the salt solution to make the final Schick dilution is quite simple. Divide 1,000 by the number of minimal lethal doses in each cubic centimeter of the toxin on hand, and the number obtained will represent the number of pipet or syringe subdivisions of toxin to be used to 80 c.c. of salt solution.

This can be expressed in the following formula:

1000:  $x$  (number M. L. D. in each c.c. toxin) =  $y$  (number of pipet or syringe subdivisions of toxin for 80 c.c. salt solution)

Examples: (a) Diphtheria toxin. M. L. D. 0.01 c.c.; 1,000 divided by 100 gives 10. Ten subdivisions on the syringe will represent 10 M. L. D. This amount added to bottles of salt solution containing 80 c.c. of salt solution gives a final Schick dilution of toxin, of which 0.2 c.c. =  $\frac{1}{40}$  M. L. D.

(b) Diphtheria toxin. M. L. D.  $\frac{1}{80}$  c.c.; 1,000 divided by 80 gives 12.5. Twelve and a half subdivisions on the syringe will represent 10 M. L. D., etc.

(c) Diphtheria toxin. M. L. D. =  $\frac{1}{125}$ ; 1,000 divided by 125 gives 8. Eight subdivisions on the syringe will represent 10 M. L. D., etc.

To make the final control dilution, add two more subdivisions of heated toxin as compared with the unheated toxin used for the final Schick dilution. A more accurate way would be to calculate exactly 20 per cent. excess of heated toxin, which is added to make the final control dilution.

The final dilutions made in this direct way are very conveniently prepared and very accurate. No undiluted toxin is wasted, and the simplification of the procedure is very helpful and saves time in making the dilutions.

#### SUMMARY

1. Standards for official control of Schick outfits are strongly advisable.

2. Careful standardization of Schick outfits in guinea-pigs necessitates that there should be at least one minimal lethal dose in each individual outfit. Such an outfit would be sufficient for from thirty-five to forty-five tests.

3. Outfits for the Schick test sufficient to make five or ten tests cannot be tested for accuracy except in the human being.

4. Undiluted bulk toxin, accurately and carefully diluted, is most suitable for the testing of large numbers of individuals in schools, institutions, hospitals, clinics, etc.

5. Two methods are given for the dilution of bulk toxin.

6. The dose of toxin for the Schick test is  $\frac{1}{40}$  minimal lethal dose in 0.2 c.c. This amount has been found to be the equivalent of  $\frac{1}{50}$  minimal lethal dose

in 0.1 c.c. The larger amount of the more diluted toxin is easier to inject, and the results are more likely to be accurate. The positive Schick reactions also in susceptible individuals who have not even a trace of antitoxin are not likely to be so severe and show the superficial necrosis of the skin noted with the more concentrated dilution recommended by Schick.

7. The dose of heated toxin for the control test has, in addition, a 20 per cent. excess to allow for slight deterioration by heating of the reacting autolyzed protein.

8. Too much emphasis cannot be laid on the accurate dilutions of the toxin for the Schick test and for the control test. Such dilutions represent the very foundation for any successful attempt in using the Schick test in the control of diphtheria.

#### POSTMORTEM FINDINGS IN TWELVE CASES OF PLAGUE\*

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Our purpose in this communication is to summarize the postmortem findings in twelve cases of plague, eleven of the bubonic and one of the pneumonic type, which occurred during the recent outbreak of the disease in Galveston. It is noteworthy that the first intimation of the presence of plague either in man or in rodent in the Gulf Coast cities of Texas was the discovery of a human case in this city. The disease



Precision adapter for accurate measurement of undiluted bulk toxin.

was diagnosed clinically and confirmed by bacteriologic examination and by the typical findings at necropsy. From that time on, necropsies were held on the bodies of all patients dying in the hospital who were diagnosed as having or suspected of having plague, and on all persons dying in the city whose cause of death was suspicious. The necropsy findings in the latter bodies were verified by bacteriologic examination after death. Though our observations do not differ essentially from those reported by Herzog and by Crowell, there are pathologic changes which should be emphasized, in view of their importance in the recognition of the early stages of the disease.

In our series, which covers the period from June 16, 1920, to Nov. 14, 1920, there were six males and six females; one Italian, two Mexicans, two Americans and seven negroes. Because the cultures were negative, we are not including a six months' fetus delivered twenty-four hours before the death of the mother (Case 6), in spite of the fact that the body showed petechiae of the skin and spleen and larger hemorrhages beneath Glisson's capsule.

The external examination of the body revealed as the most prominent change the presence of a swelling of one or more groups of the more superficial lymph nodes, one of which represented the primary localization of the disease. There were no glandular enlargements in Case 10, a coroner's case, and for that reason we should have failed in our diagnosis had we depended

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solely on the gross findings. The axillary glands of both sides were enlarged in the second necropsy of the series, and the cervical glands in Case 9. In the other



Fig. 1.—Left femoral glands in bubonic plague.

nine necropsies, more than 80 per cent. if we exclude the one of pneumonic type showing no glandular enlargement, the primary localization of the disease was in the femoral chain of the superficial subinguinal glands. The position of the swelling below the inguinal ligament led to the recognition of the first case by the clinicians. In the two bodies in which the inguinal glands, which lie above Poupart's ligament, were involved, the more extensive and the more advanced changes were found in the femoral group of the same side, the glands of which are situated below the ligament.

In addition to the duskiess over the indurated area at the site of the buboes, small hemorrhages were present in the face and side of the neck of the negro boy (Case 12); macular eruption of the arms and hands in four instances, and of the chest in three of these (Cases 2, 3, 5 and 6). A rather large bleb was present in the Mexican girl (Case 3) over the site of the bubo. This may be explained by the fact that an ichthyol dressing had been used. Of the five patients showing petechiae, none received serum; so the petechiae cannot be explained as anaphylactic in origin.

The serum rash involves the entire surface of the body, and the wheals are irregular in form and size. In Case 5 the conjunctiva was also injected.

On cutting down over the primary or secondary buboes, a clear, straw-colored or murky, sanguineous fluid obscured the field. The involved glands and interglandular tissues were always removed *en masse*, and though a portion of the underlying muscle was often removed with the glands, the dissection was not difficult because the infiltration more or less followed the lines of cleavage. This indurated mass in two instances extended from above the inguinal ligament to half the length of the thigh, and when held in the hand covered the palm so that the fingers could not close over the edge. Vertical incisions through it showed variations in the extent of the involvement of the nodes of a group and of the periglandular tissue. For instance, the central gland of the middle section in Figure 1 is hemorrhagic but only slightly larger than normal, while the two glands in the section above have diameters four times its length. Again, while that node is discrete, the larger nodes above are almost confluent, and with-

out close observation it is difficult to outline them because of the hemorrhagic involvement of the periglandular tissue. This difficulty can be appreciated even better when we study the lower sections in which there are three glands, for here the hemorrhagic infiltration gives one the impression of five glands.

Another mounted specimen of buboes (Case 1) shows two hemorrhagic glands which are somewhat grayer than the periglandular tissue, which has been more recently infiltrated with blood. Here the fat is so obscured that it scarcely mottles the red. Though the specimen is  $3\frac{1}{2}$  by 2 inches (9 by 5 cm.), only the two grayish red glands which are softening can be definitely made out, and that not easily. We explain the larger glands which show softening as those primarily involved in that group. In several necropsies in which the glands were more discrete, the central part was gray and the periphery a slaty red without



Fig. 2.—Metastatic areas in liver in bubonic plague.



marked changes in the interglandular structures. As mentioned above, the tissues in the neighborhood generally showed hemorrhagic edema. In Case 11, in

which we followed the femoral involvement into the inguinal and iliac region, we found the iliopsoas muscle hemorrhagic to the bone. One of the hemorrhagic glands adjacent to the external iliac artery, while not being greatly enlarged or showing exudative inflammation, must have undergone liquefaction necrosis; for, on section, the grumous material poured out. Changes approaching suppuration were found in two other cases, and in both of these, so far as could be determined, the patients lived longer after the development of the primary lesions in lymph glands than was true of other subjects.

#### DETAILED FINDINGS

*Histopathology of the Lymph Glands.*—Sections were made of the glands with no idea of which were primarily or secondarily involved, and often sections were made of glands that

Fig. 3.—Hemorrhage into pancreas in bubonic plague.

showed no gross changes. In every case of the bubonic type, one or more of the glands showed microscopic changes that may be considered pathognomonic. These changes are designated hemorrhagic necrosis. The glands, more than any other foci in the body, demonstrate the appropriateness of this term; for the lesion is comparable to no other inflammation or necrosis.

Glands which were not pathognomonic were unaffected (Case 4), or hyperemic with stasis (Case 6), or were hyperemic and showed hyperplasia of the lymphoid structures or of the endothelial lining of the sinuses (Cases 10 and 12).

In Case 6 we were fortunate enough to make a section of two small glands which were separated only by a medium-sized artery and vein; yet one was hyperemic, while the other presented the characteristic changes. Coagulum and hemorrhage were present in the cortex and medulla in about equal proportions. The lymphocytes that were not disintegrated were pushed aside so that they lay just beneath or near the capsule, if that structure was still present. The capsule and trabeculae, when distinguishable, were swollen, and the connective tissue cells did not stain. In fact, through several fields the distended vessels were the only structures that might be called by name; and when cut longitudinally we could not be certain of both walls. The whole gland seemed to be affected synchronously, no part before another.

Going back over any section showing the characteristic changes, we could not fail to appreciate the absence of polymorphonuclear leukocytes, the obscuring or replacement of glandular structures by hemorrhage and coagulum, and the extension of these changes into the periglandular tissues.

*Heart.*—Subpericardial petechiae were present in seven instances (Cases 3, 6, 7, 9, 10, 11 and 12). Acute dilatation was thought of as the immediate cause of death in Case 7. The microscopic findings confirmed the gross diagnosis of antemortem clot in Cases 3 and 6. There was nothing constant in the microscopic findings. Most of the sections showed cloudy swelling and edema. In Case 9 there was marked hyperemia and some hemorrhage; the capillaries and smaller vessels contained a coagulum similar to that described in the vessels of the lymph glands.

*Lungs.*—The lungs showed subpleural petechiae which were visceral and parietal in Cases 3, 4, 9, 10 and 12. In Case 4, there were small hemorrhages in the lung. In this instance the patient died almost immediately after receiving serum. Anaphylactic symptoms were present.

There were only two of the bubonic type in which the lungs did not show gross changes. Seven showed marked hyperemia and edema of the lungs. In these cases there was an excessive desquamation of epithelium, with no evidence of chronic passive congestion. Secondary foci of disease were found in two instances. The distribution of the areas was that of lobular pneumonia, and these areas were often confluent rather than discrete, as is true in pyemia. The microscopic sections of the more central part of such areas presented changes similar to those seen in the primary lesion of the lymph nodes; the destruction of the tissue and the hemorrhagic changes were less pronounced, while the leukocytic exudate was more marked. The pneumonic form of the disease (Case 10) corresponds very closely to the description by Strong from his observations in the Manchurian epidemic. By far the greater part of the involved portion of the lungs presented changes which resembled the stage of engorgement, with the addition of small grayish areas which represented the earlier localization of the process. The distribution of the lesions is that of a pseudolobar pneumonia. The microscopic study showed more hyperemia than any of the other cases, and petechiae that were especially prominent about the bronchi and blood vessels. The pleura in the cases of secondary foci and in the

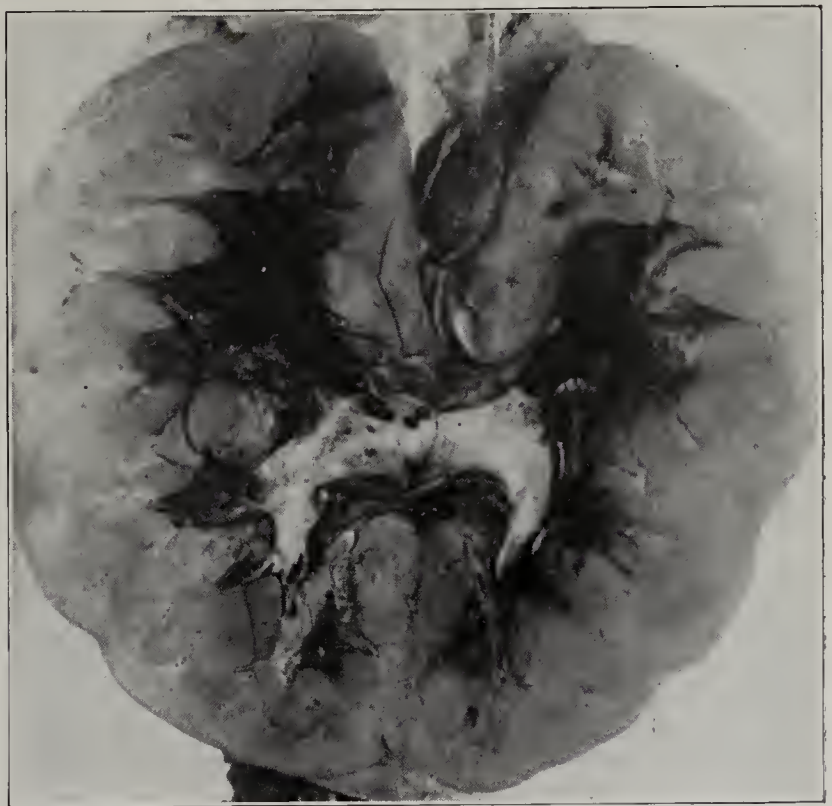


Fig. 4.—Hemorrhage into sinus of kidney in bubonic plague.

pneumonic type showed slight fibrinous exudate besides the petechiae first mentioned.

*Spleen.*—The spleen was enlarged from one to five times in all cases except Case 8, in which the body was that of a woman, aged 70. In the gross appearance the spleen was very



much like the acute splenic tumor of typhoid fever. The pulp was darker and softer than normal. Case 9, which showed numerous foci in the body, presented one area of hemorrhagic necrosis about the size of a cherry. The microscopic sections varied. In some instances the corpuscles were prominent; in other slides they were poorly preserved. Eosinophils were increased considerably, especially when the subjects were young.

*Kidneys.*—The kidneys in the first necropsies presented grossly the changes of acute nephritis, generally hemorrhagic in type. The hemorrhages in the sinus of both kidneys and along the ureters in Case 5 came as a surprise. This hematoma was so large that it more or less completely separated the

which was generally affected, showed more disintegration than albuminous degeneration.

*Liver.*—In the liver, secondary foci, grayish red in appearance and varying in size from such as were scarcely visible to areas 2 cm. (three-fourths inch) in diameter, were found scattered throughout in Case 9 (Fig. 2). These areas were firm and, under ordinary conditions, would have suggested malignancy rather than inflammation and necrosis. A much more limited involvement, one nodule the size of a cherry, was present in Case 10. The microscopic changes were again very much like those of the lymph nodes. In all sections of liver there was hyperemia with distention of the sinuses sufficient to make them as prominent, if not more so, than

## FINDINGS IN TWELVE NECROPSIES

Case No.	Nationality and Sex*	Age, Years	Number Days Sick	Serum	Primary Involvement	Petechiae	Secondary Involvement	Heart	Lungs	Spleen	Kidney	Liver	Gastro-Intestinal Tract	Pancreas	Retro-peritoneal; Peritoneal
1 (1378)	American ♂	17	.....	.....	Right femoral	.....	.....	Cloudy swelling	Hyperemia	Enlarged; hemorrhages	Acute nephritis	Fatty degeneration	.....	.....	.....
2 (1394)	Mexican ♀	35-45	? Hosp. 1	.....	Right axillary	Maculopapular on arms	Left femoral	Cloudy swelling	Pneumonia; fibrinous pleurisy	Enlarged three times	Acute nephritis	Fatty degeneration; edema	.....	.....	100 c.c. fluid
3 (1395)	Mexican ♀	13	? Coroner	.....	Left femoral	Arms and hands; bulla	Aortic; iliac; right axillary	Petechiae; thrombus	Petechiae	Enlarged four times	Hemorrhage along ureters	Fatty	.....	.....	100 c.c.; hemorrhage; extension into vena cava
4 (1396)	Negro ♂	35-40	? Hosp. 3	1 dose	Left femoral	.....	Left iliac; right femoral	.....	Petechiae; lung pleura	Enlarged three times; hemorrhages	.....	Fatty	.....	.....	.....
5 (1398)	Italian ♂	16	? Hosp. 1	1 dose 100 c.c.	Right femoral	Face, arms, chest; injection of conjunctiva	Aortic	.....	Serous exudate; edema	Enlarged three times	Hemorrhage sinus, along ureters	Hemorrhage about gallbladder	Erosion	Hemorrhage	100 c.c.; hemorrhage; extension to vena cava
6 (1403) Pregnant	Negro ♀	27	? Hosp. 2	.....	Right femoral	Forearm and chest	Left inguinal; right inguinal and iliac	Petechiae; thrombus	Serous exudate; edema	Enlarged three times	Hemorrhage ureters and sinus	Subcapsular hemorrhages	.....	.....	500 c.c.; hemorrhage; pelvis above iliac glands
7 (1406)	Negro ♂	35-45	? Hosp. 1	.....	Right femoral	.....	Left femoral; mesenteric	Petechiae	Edema	Enlarged three times	Acute hemorrhagic nephritis	Cloudy swelling	.....	.....	.....
8 (1408)	American ♀	70	? Hosp. 2	.....	Left femoral	.....	Mesenteric, slight	Petechiae	Petechiae	Smaller	Exacerbation	Cloudy swelling	.....	.....	Hemorrhage in pelvis
9 (1410)	Negro ♀	20	? Hosp.	.....	Right cervical	.....	.....	.....	Pneumonia; fibrinous exudate	Larger; two nodules	Fatty	Fibrinous perihepatitis; numerous nodules 1 = 4 cm. (3/8 inch = 1 1/2 inches) in diameter; glands of hilum enlarged	.....	.....	.....
10 (1414)	Negro ♀	20-25	7 Coroner	.....	Lungs	.....	Liver	Petechiae	Pneumonia; petechiae of pleura	Enlarged	Acute nephritis	Nodule 1 cm. (3/8 inch)	.....	.....	.....
11 (1416)	Negro ♂	35-45	4 Hosp. 1	200 c.c.	Left femoral	.....	Left inguinal and iliac	Petechiae	Serous exudate	Enlarged	Acute nephritis	Fatty	.....	.....	Hemorrhagic infiltration over iliac glands; fibrinous peritonitis over sigmoid mesocolon; thrombus in left iliac vein
12 (1425)	Negro ♂	5-6	? Coroner	.....	Left femoral	Face; neck	Right femoral and aortic; iliacs	Petechiae	Petechiae; edema	Enlarged three times	Hemorrhage into sinus and along ureters	Fatty	Hemorrhage into mucosa	.....	Hemorrhage in pelvic peritoneum

\* In this column, ♂ indicates male and ♀ female.

medulla from the mucosa; and in only one place did it break through into the pelvis. Similar hemorrhages were present in Cases 6 and 12. In these cases and in Case 3, hemorrhages were present along one or both ureters, so that they were increased to the thickness of one's finger. Subcapsular ecchymoses were present in a number of cases. Microscopic study disclosed more or less marked hyperemia. In the cases mentioned above, some of the arterioles were plugged with fibrin and leukocytes, as was true in the lymph nodes and the lungs. Strong and Crowell emphasized the frequent occurrence of hyaline thrombi in the glomerular capillaries. These were numerous in the four cases with hemorrhage, and in a number of cases were not found, though definite search was made. Occasionally, red blood cells and fibrin were found in the glomerular space, and frequently the endothelial and epithelial cells were proliferated. The tubular epithelium,

the liver cords. In Case 5 there were petechial hemorrhages not only beneath Glisson's capsule but also in the subserous layer of the gallbladder.

*Gastro-Intestinal Tract.*—Petechial hemorrhages were present in the gastric mucosa in Case 12, and petechiae, together with erosion in the gastric mucosa, in Cases 1 and 5. The serous surface presented no indication of disease.

*Pancreas.*—Hyperemia was present in many instances. An extensive hemorrhagic infiltration of the organ was found in one case (Fig. 3).

*Retroperitoneal Tissues.*—Hemorrhages, either generally or locally distributed, were present in six instances. The bleeding must have been from many vessels, for the hemorrhagic areas were discrete except in the pelvis or along the ureters. More or less serous fluid was present in the peritoneal cavity in the foregoing instances. A roughening of the peritoneum



due to fibrinous exudate was present over the external iliac glands when they were involved. A rather extensive fibrinous exudate was present over the superior surface of the liver in Case 9. The external iliac glands on the side of the subinguinal involvement showed hemorrhagic necrosis in five cases (3, 4, 6, 11 and 12), and in these a hemorrhagic edema of the intervening tissues could be traced from the primary buboes to the deeper nodes. The aortic glands were involved in three subjects (Cases 3, 5 and 12); the mesenteric glands in Cases 7 and 8, and the glands in the femoral ring in Case 6.

The wall of the inferior vena cava in Cases 3 and 5 presented a dark reddish appearance, with small hemorrhagic protrusions covered with intima. In these cases the aortic glands were hemorrhagic and necrotic, and one may have thought from the gross appearance that the blood had extended from the glands into the coats of the vessels. The microscopic examination, however, revealed more and better preserved red blood cells within the inner third of the vessel, and no special degenerative changes in the intima. The escape of blood from the vasa vasorum is our explanation of the hemorrhages beneath the intima.

The one brain examined (Case 6) showed hyperemia of the pia-arachnoid but no other changes, gross or microscopic.

### ANGIONEUROTIC EDEMA \*

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"Food idiosyncrasy" and the so-called "anaphylactic diseases" have received an exceedingly wide consideration during the last seven years. Extensive observations and experiments have done much toward proving that many conditions, formerly regarded as disease entities, are in all probability only different manifestations of allergy.<sup>1</sup> One of the more recent additions to this list is angioneurotic edema, or "Quincke's disease."

This syndrome appears to have been first described in detail forty-five years ago by Milton<sup>2</sup> of Edinburgh, who regarded it as a distinct skin condition which he named "giant urticaria." These "ephemeral cutaneous nodosities," "ephemeral congestive tumors of the skin," and various other designations for the same manifestations were generally called "Quincke's disease" or "Quincke's edema," after that author described the condition, in 1882, as an "acute circumscribed edema of the skin" which he regarded as a vascular neurosis capable of being clinically separated from all other forms of local edema.

Since that time, numerous reports have appeared, and the condition can scarcely be regarded as uncommon.

Osler<sup>3</sup> declared the swellings to be "only urticarial wheals, writ large," but most observers viewed it as connected in some way with neurotic disturbances. Considerable emphasis has been laid on the fact that it shows a marked hereditary tendency. Its etiology has always been obscure, and until the students of anaphylaxis and allergy began to publish their results, it was usually regarded as a distinct disease of undecided origin.

The clinical manifestations of angioneurotic edema are the periodic appearance of transitory local swellings, which are more or less circumscribed, and may occur in the mucous or synovial membranes or in the skin. The onset is always sudden, the swellings being pale in color, causing no inflammation or local pain, but often being associated with a certain amount of

general systemic disturbance.<sup>4</sup> Most authors remark on the presence of some associated psychoneurosis, or a neurotic personal or family history. The Crowders<sup>5</sup> state that sometimes "psychic influences seem to call forth the attack. The great emotions of fear and anger or prolonged and arduous mental application have been observed immediately to precede the first attack." They also suggest the possibility of acquired protein sensitization or anaphylaxis as the cause.

The neurotic etiologic factor has, however, received less and less attention in the five years which have elapsed since the Crowders' article was written. At present the more prevalent opinions are that either a congenital hypersensitiveness (allergy) or else a tendency to become artificially sensitized to a foreign protein (anaphylaxis) is probably an inherited characteristic of the cytoplasm. Human sensitization is nonspecific in character, and is a mendelian dominant according to Cooke and Vander Veer,<sup>6</sup> and a recessive according to Adkinson,<sup>7</sup> who investigated the heredity with regard to asthma as an entity. Angioneurotic edema is generally considered as only one of its clinical demonstrations; but, curiously enough, it is often transmitted as a specific condition.<sup>8</sup>

Ingestion of foods to which the individual is hypersensitive has proved to be the exciting cause of the attacks in all of the published cases due to allergy which have come under my notice, but it should be remarked that Walker has reported cases in which this syndrome has been provoked in three patients by the hypodermic injection of the proteins of flaxseed, timothy pollen and ragweed pollen, respectively, in persons, each of whom had previously reacted to skin tests made with the same substance.

That certain types of angioneurotic edema are merely expressions of hypersensitiveness and not a disease per se now seems to be fairly well established in this hemisphere. A perusal of English medical literature on the subject shows that much less attention has been given to its possible anaphylactic or allergic foundation on the other side of the ocean. There is certainly room for much more extended inquiry into the whole subject, and the possibilities of animal experimentation are very great. With this idea in mind I wish to present reports of two cases of typical angioneurotic edema occurring in dogs. The onset and course of these attacks, their probable cause and their reaction to treatment were so precisely analogous to human cases reported in the literature that the advantages of employing the dog as an experimental animal in the investigation of food allergy and protein sensitization seem to deserve marked emphasis, especially since the symptoms of canine anaphylaxis and allergy have many marked differences.

I have seen cases resembling true bronchial asthma, eczema and urticaria<sup>9</sup> in the dog. Although these conditions are rare, their symptomatology is singularly similar to that of the same conditions in man. I have found no published reference to angioneurotic edema, but some of the descriptions of "urticaria" found in veterinary publications appear to be practically identical cases of food allergy.

In man, some cases of allergic angioneurotic edema commence soon after eating the offending protein, with

\* From the Pasteur Institute of Columbus.

1. Coca, in Tice's Practice of Medicine 1: 107.

2. Milton: Edinburgh M. J. 22: 513, 1876.

3. Osler: Am. J. M. Sc. 127: 1, 751, 1904.

4. Duffield: Ann. Surg. 65: 445, 1917.

5. Crowder, J. R., and Crowder, T. R.: Five Generations of Angioneurotic Edema, Arch. Int. Med. 20: 840 (Dec.) 1917.

6. Cooke and Vander Veer: J. Immunol. 1: 201, 1917.

7. Adkinson: Genetics 5: 363, 1920.

8. Bulloch: Eugenics Lab. Mem. 9, Part 3, Dulon & Co.

9. Hutya and Marek: Spezielle Pathologie und Therapie der Haustiere 2: 804.



violent gastro-intestinal symptoms, and a widely distributed urticaria which rapidly develops into vast edematous areas, while others show no symptoms for some hours or even several days after the food which causes their trouble is taken. In this class the areas are usually sharply localized, and skin tests are seldom positive. We have both types represented in these canine cases.

CASE 1.—A thoroughbred English bulldog puppy, aged 5 months, was given a large meal of cooked fresh ham, the first pork that had been fed to him. Within a short time he began to vomit and scratch himself as though he were suffering from an intense pruritus. Next morning the pup was greatly prostrated, and the edema shown in Figure 1 had developed. The condition of the kennel indicated that he had continued to vomit, and in addition had suffered from a profuse and at times hemorrhagic diarrhea. In forty-eight hours the enormous edematous areas had disappeared. The dog, since then, has been kept on a pork-free diet, and no other attacks have been noted.

About one year after the attack described, scratch skin tests were made, commercial pork protein being employed. A well marked reaction occurred after about ten minutes.

Correspondence with the breeder of the dog showed that none of the diseases dependent on sensitization had been observed in this dog's ancestors or in the four other dogs of the same litter. A few puppies sired by this dog all seem normal.

CASE 2.—A highly bred cocker spaniel showed repeated attacks of localized areas of edema, often as large as half an orange. These occurred suddenly, were always single, and at the end of twenty-four to forty-eight hours disappeared. They came on the lips and head, and on one occasion the tongue was enormously swollen. These swellings seemed to be painless, and there was no apparent pruritus. No systemic disturbance was noticed. It was observed that these attacks always appeared in the night or the next day after eating fresh or canned fish for his noonday meal, and that when these foods were withheld the attacks ceased. Five years' abstinence from fish seemed to cause spontaneous desensitization, as he could then eat fish with impunity. No skin tests were made in this case.

Most of the ancestors of this dog have been under close observation for five generations, but in none of them were there any manifestations of sensitization to fish or other protein substances. But it is significant to note that among his offspring one female died of eclampsia, a disease of nursing female dogs in which the symptoms are strikingly similar to those of anaphylactic shock,<sup>10</sup> and one dog, a puppy, suffered from asthma and later from occasional attacks of erythema multiforme which persisted for weeks. Skin tests to beef, pork, wheat, milk and egg white were recently made in this dog, but all proved negative.

Two cases somewhat similar to Case 1 are reported by Schreck.<sup>11</sup> He was called to see two small puppies on which a rose colored eruption was plainly visible. The owner stated that the onset had been sudden, without a premonitory stage. The puppies were 6 weeks old, and there had been no previous illness of any sort. They had been given some left-over milk oyster stew,

and in about an hour one of the pups developed wheals. A half hour later the other pup showed the same symptoms. At first the wheals were the size of a pea. They increased quickly to the coalescent stage, the head and face swelling to almost twice the normal size, the eyes nearly closed from the swelling of the lids and conjunctiva. There was intense itching, but no vomiting and no signs of fever. Both animals made a quick recovery.

The resemblance of these canine cases of angioneurotic edema to those of human patients cannot fail to be very striking. For example, Austrian<sup>12</sup> and McCafferty<sup>13</sup> each report a case in which positive intradermal skin tests resulted from the use of the proteins of pork, sea foods, etc., while Osler<sup>14</sup> reports a case in which the edema followed the ingestion of fish.

Many human cases might be cited from the literature, but my only intention is to emphasize the likeness between the etiology and manifestations of this condition in man and dog, and with this in mind I will include the report of one human case which has come under my personal observation:

H. C. G., aged 37, a medium sized, well nourished and well developed business man, stated that nearly every year he had nervous breakdowns with vague indefinite symptoms, asthenia and headaches, which compelled him to stop work for a while; but he did not associate the attacks with this condition. He had eczema as a child. The family history is shown in Figure 2.

His first attack came on without prodromes about three years ago. For the last three months they have been frequent. Three days before I saw him a very large swelling appeared on the right

cheek, which was still apparent on examination. Outbreaks occurred at irregular intervals, and often after a long period of freedom he would have a rapid succession of swellings. Sometimes the edema appeared after a slight injury, but more often it came in the night without warning or cause. It developed "like magic," and appeared oftenest on the face and lips, although no part of the body excepting the scrotum and throat had escaped. On one occasion the anterior portion of the tongue was so swollen that it was impossible for him to close his mouth. He had at times suffered from urticaria. There have been no gastro-intestinal symptoms with the attacks. Epinephrin administered in the very beginning of an attack did not control it.

Skin tests (scratch) with commercial proteins were made, using pork, milk, egg, wheat, rice, bean, oyster, potato, banana, cabbage and pickarel, as these represented all the varieties of food which he had eaten for the three days preceding the attack. All were negative excepting pork which caused a well marked wheal, 2 cm. ( $\frac{3}{4}$  inch) in diameter, with a wide red areola, and radiating pseudopod-like outlines. An intradermal test was equally positive.

Since abstaining from pork his general health has greatly improved and, with but one exception, he has been free from attacks. This one appeared in the night, affecting the tongue, was of two hours' duration, slight in extent, and was attributed by the patient to the ingestion of pastry made with lard.



Fig. 1 (Case 1).—Appearance of dog during attack.

10. Friedberger and Fröner: Pathology and Therapy of Domestic Animals, Zuill translation 2:148.

11. Schreck: Am. J. Vet. Med. 15:85, 1920.

12. Austrian, C. R.: South. M. J. 12:348 (July) 1919.

13. McCafferty, L. K.: U. S. Nav. M. Bull. 13:98 (Jan.) 1919.

14. Osler: Modern Medicine 6:649.



Ten cubic centimeters of blood was taken from this patient, which, after centrifugation, yielded 5 c.c. of serum. This constituted the sole available supply for experimental work, since the patient objected to making a further contribution.

As has been demonstrated, puppies at weaning time can show the phenomena of food allergy. The probability of conferring a passive anaphylaxis on a small animal with the amount of serum on hand would seem much greater than in a grown dog; finally, the possibility of an acquired sensitization in a puppy would seem to be negligible.

Passive anaphylaxis in the dog occurs immediately<sup>15</sup> after the injection of the sensitizing serum, and requires no incubation period. Therefore a puppy, 6

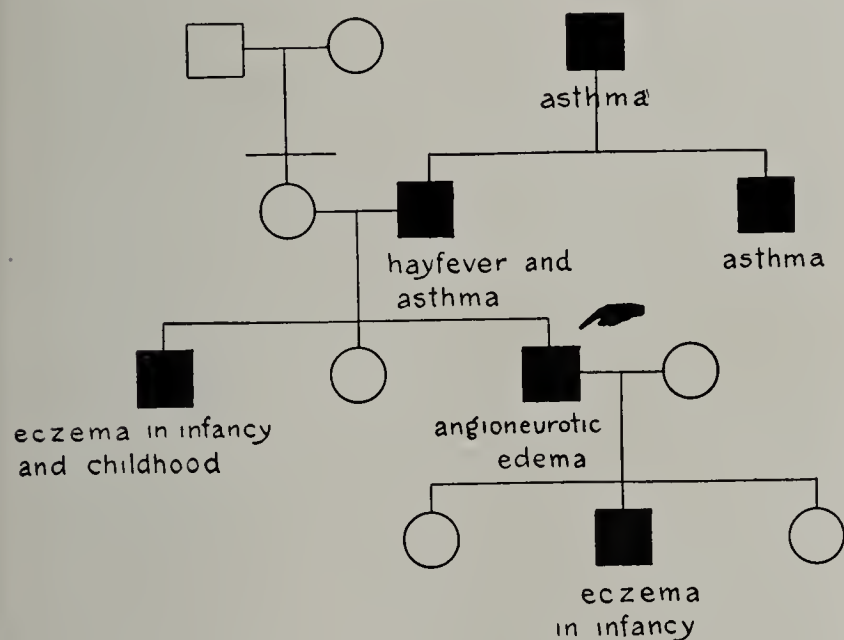


Fig. 2.—Family history of H. C. G.

weeks old, of 1,620 gm., was found, which had had a little cow's milk as its only artificial food. Skin tests to pork and human serum were negative. Five cubic centimeters of the serum of the patient was injected into the femoral vein, and almost immediately afterward a solution of 75 mg. of pork protein.<sup>16</sup> The experiment was negative, as we could determine no early or delayed anaphylactic symptoms. It is greatly regretted that material for a series of similar experiments was not available.

In view of the successful attempts of Schloss<sup>17</sup> to sensitize guinea-pigs passively with the serum of persons suffering from food allergy, I believe that further experiments with puppies would yield results of value.

There are many questions as to the inheritance of angioneurotic edema which are not definitely settled, and which will not be settled until two salient features are explained. The first of these is the sudden appearance out of an untainted ancestry of an individual afflicted with the disease. Some of these, but apparently not all, transmit the condition to their offspring. The inheritance of familial angioneurotic edema is almost always in an unbroken line in figures closely approximating mathematical exactness to those expected from a dominant, while that of the sporadic cases is likely to alternate with other manifestations of hypersensitiveness.

The other feature is found in the occasional skip of one or more generations in the line of inheritance.

Such breaks are found in many of the published family trees of familial angioneurotic edema. These interruptions are at least partially explained by those individuals who do not show symptoms until late in life, and in those who, as pointed out by Longcope<sup>18</sup> in the consideration of other forms of allergy, may be apparently healthy and at the same time give positive cutaneous reactions to two or more foreign proteins; and also by those who are born hypersensitive, but who on account of their environment never come in contact with their exciting allergen, and consequently do not display the clinical symptoms. Should familial angioneurotic edema prove not to be allergic in origin, this explanation would have to be disregarded.

However, to one interested in genetics, these two characteristics would at once suggest a search for evidence of the condition being but one of a series of abnormalities, due either to a single factor or to complementary factors. All the pedigrees reported would certainly seem to dispose of the possibility of its being a single recessive character.

Another line of investigation, to which the door has been invitingly opened by Guyer and Smith,<sup>19</sup> is the possibility of acquired defects being heritable.

It is unfortunate that, in the past, so many authors have reported only the lines of inheritance in which angioneurotic edema appears; for if pedigrees are to be of any real value, all normals as well as abnormals must be reported. Not only those suffering from angioneurotic edema, but also those having any symptoms which have a possible allergic origin should be designated.

At present, females sired by Dog 2 are being bred to his apparently hypersensitive son, and, barring distemper and the many other hazards of the kennel, we hope to get results of sufficient interest to warrant their publication.

## CLINICAL STUDY OF A CASE OF ACROMEGALY

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Only comparatively recently has the literature directed attention to the fact that acromegaly is not a very rare disease. Case reports are beginning to appear with rather astonishing frequency, not necessarily because the disease is on the increase. The improvement in our diagnostic methods and the fact that the internists are becoming better observers explain this as well as many other alterations of statistics.

The more intensive experimental and clinical study of the pituitary gland has resulted in the accumulation of much information regarding its normal and pathologic physiology and the clinical manifestations of the latter. The earliest syndrome linked with the pituitary gland was described by Marie, and appropriately designated acromegaly. For many years this was the only clinical entity referable to the hypophysis, and it remains the most striking. As reports accumulate, the clinical picture becomes more comprehensive.

### REPORT OF CASE

*History.*—J. M., a man, aged 33, white, single, student, American, who reported at the outpatient department of the

15. Scott: J. Path. & Bacteriol. **15**: 31, 1910-1911.

16. The pork protein was dissolved in decinormal sodium hydroxid, the insoluble portion centrifugated out, and decinormal hydrochloric acid solution added until a precipitate began to appear. It was then injected.

17. Schloss, O. M.: Am. J. Dis. Child. **19**: 433 (June) 1920.

18. Longcope, W. T.: Am. J. M. Sc. **152**: 625 (Nov.) 1916.

19. Guyer and Smith: J. Exper. Zool. **31**: 171, 1920.



Cincinnati General Hospital, Nov. 24, 1920, complained chiefly of acromegaly and dhobie itch. As a child he had measles, mumps and chickenpox. He had pneumonia at the age of 11, and a mild attack of influenza followed by rheumatism in 1913. His general health had always been very good. While serving



Fig. 1.—Appearance of patient at 23 and at 28.

in the Canal Zone, in 1916, he contracted dhobie itch. His father died at about middle age of valvular disease of the heart (syphilis?). His mother was living, in feeble health. Two brothers were living and well. His paternal grandfather died of erysipelas. His paternal grandmother died of pneumonia. His maternal grandfather died of "softening of the brain." His maternal grandmother died of a "complication of diseases."

#### Present Illness.—

The patient was well until 1911, when he noticed that his weight was rapidly increasing and that he required a much larger size hat: the size increased from 6 $\frac{7}{8}$  to 7 $\frac{5}{8}$  before he thought very much of it. He soon noted that his collars were becoming too tight, and that whereas he had worn a size 16 $\frac{1}{2}$  collar in 1911, he was wearing size 18 $\frac{1}{2}$  in 1915. In July, 1915, he underwent a physical examination, but no mention was made by the physicians at that time of any trouble. Subsequent to this he was employed for fifteen months in Panama. In September, 1920, he returned to this country and was told by the immigration inspector at Ellis Island that he was suffering from a "glandular disease." The officer advised the patient to see his family physician when he arrived home. He had entered the govern-



Fig. 2.—Patient at 33. There has been alteration of features, and the arms have lengthened.

smoking a strong pipe. He also had attacks in which he saw black spots floating in front of his eye, and he had frequent dizzy spells of short duration. The patient stated that his former friends failed to recognize him, and that he had considerable embarrassment in introducing himself to former good friends.

The patient's appetite was good. The bowels were regular. There was no history of nocturia. He slept well. He smoked moderately. He did not use alcohol or any other drug. The venereal history was negative. There had been no sexual indulgence. Libido was normal.

*Physical Examination.*—The patient was extremely well developed. His apparent age was hard to determine. He discoursed very fluently, had more than the average intelligence, and was greatly interested in his surroundings. He had the textbook appearance of real acromegaly, with the prognathic jaw, the tremendous physical development, the disproportionately long arms, the very hairy body, and wide, spade shaped hands and feet. There was an eruption over the forehead and over the roof of the nose, which remained from an attack of dhobie itch. The skin had the appearance of being somewhat thickened. The beard was heavy.



Fig. 3. — Remarkable enlargement of tongue.

Mensuration of various areas of the body revealed: height, 5 feet, 10 $\frac{1}{4}$  inches (178 cm.); weight, 210 pounds (95 kg.); at 24 years of age, 179 pounds (81 kg.); hat size, 7 $\frac{5}{8}$ ; vertex to jaw, 29 cm. (11 $\frac{1}{2}$  inches); width of forehead, 14 cm. (5 $\frac{1}{2}$  inches); neck, largest circumference, 46 cm. (18 inches); chest, circumference, 105 cm. (42 inches); inspiration, 114 cm. (45 inches); circumference of shoulders (angle of Louis), 122 cm. (49 inches); circumference of arms (from center of back to small finger), 106 cm. (42 inches); biceps (relaxed), 32 cm. (13 inches); biceps (contracted), 36 cm. (14 inches); wrists,

20 cm. (8 inches); circumference of palm, 25.5 cm. (10 inches); spread of hand (tip of little finger to tip of thumb), 26 cm. (10 $\frac{1}{2}$  inches); waist measurement, 91 cm. (36 inches); hips, interspinal, 26 cm. (10 $\frac{1}{2}$  inches); intertrochanteric, 37 cm. (14 $\frac{1}{2}$  inches); legs, biceps circumference, 60.5 cm. (24 inches); knee cap circumference, 43 cm. (17 inches); size of shoe, 11 E.

The genitalia were apparently normal in size, and there was a masculine distribution of hair. The tendency toward excessive perspiration was noted. The eyes were gray; the pupils reacted normally to light and accommodation. The septum was deviated to the right. The external ear was tremendously enlarged. The tongue showed tremendous hypertrophy and was deeply fissured. The teeth were small, in good condition, and showed "spacing." A few were absent. The uvula was strikingly increased in length. The tonsils were hypertrophied and contained some pus. The cervical glands were not palpable. The capacity of the lungs was 400 cubic inches (6.56 liters). Tactile fremitus was normal. Expansion was fair and equal on the two sides. Resonance was equal and good over both lungs. The breath sounds were clear, and were vesicular in type, with slight exaggeration at the right apex posteriorly. Vocal fremitus was fair and equal on both sides. There was no evidence of adhesions at the bases. Examination of the circulatory system detected no abnormal pulsations over the precordium or in the vessels of the neck. There were

ment hospital at this time to have a pterygium removed from his right eye. He noted that he was having sharp, shooting supra-orbital headaches now, and thought they were due to



no thrills. The pulses were equal, regular and of normal quality. The rate was 90 per minute. The blood pressure was: systolic, 145; diastolic, 90. The heart measurements were: right, second rib, 2.5 cm.; third rib, 2.5 cm.; fourth rib, 3.0 cm.; fifth rib, 3.0 cm.; left, second rib, 2.5 cm.; third rib, 5.5 cm.; fourth rib, 8.5 cm.; fifth rib, 11.5 cm.

The sounds everywhere were clear and regular and of good quality. The pulmonic second sound was slightly accentuated. There were no murmurs. The heart's response to exercise was very good.

The abdomen was level, with no masses or tenderness. There was no evidence of hemorrhoids.

The reflexes were lively. Neurologic consultation detected nothing abnormal.

Examination of the blood revealed: hemoglobin, 85 per cent. (Tallqvist); erythrocytes, 5,046,000; leukocytes, 10,000 (dhobie itch).



Fig. 4.—Fingers are spatulate, skin is furrowed, and the nails are broad for their length.

The urine was amber color, with a specific gravity of 1.030. It was alkaline to methyl red. Examination for sugar and albumin was negative. Microscopic examination revealed amorphous urates and calcium phosphate crystals; sugar, 83 mg. or 0.083 per cent.; uric acid, 1.5 mg. or 0.0015 per cent.

The rate of oxygen consumption was 190 c.c. a minute for each square meter of body surface. The oxygen metabolism was 39 per cent.



Fig. 5.—General enlargement of pituitary fossa.

The Wassermann reaction was negative.

The roentgen-ray examination of the skull and of the feet and hands revealed uniform thickening of the skull, with striking deepening of the sella turcica. The flaring of the

terminal phalanges and the spindle character of the metacarpals and metatarsals is well shown in Figures 5 and 6.

The optic disks, as well as the field of vision, were normal on repeated examinations.

One basal metabolism test, July 3, 1921, was 36.3.



Fig. 6.—Flaring of distal phalanges, and spindle shape of shaft of middle phalanges of hand and foot.

#### COMMENT

The illustrations bring out some striking manifestations of this disease. The widening of the bed of the hypophyseal gland and the erosions of the base of that structure indicate clearly the disease involved. This is also true of the changes of the bony structures of the hands and feet. The flaring of the distal phalanges and the spindle shaped appearance of the middle phalanges stand out prominently.

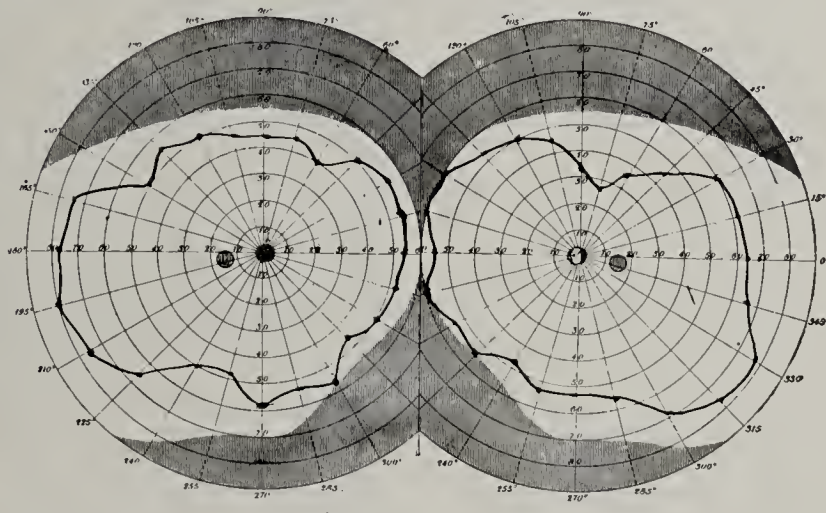


Fig. 7.—Field of vision for white, June 28, 1921.

The pictures taken at different ages tell a striking, although pathetic story of the rapidity with which the disease developed. Although the patient showed the most striking picture of acromegaly, both as to alteration of features and as to glandular disturbance, vision was in no way impaired.

**Function of Dietitian.**—The dietitian must see to it that in carrying out instructions of the metabolist, so far as food ingredients go, only such vegetables and other foods are recommended as are in season and are to be obtained easily and cheaply. In this regard, the dietitian serves her main function. And not only this, she is to visit the home of the sick or have classes in the hospital where the sick can visit and be shown how to cook the vegetables and other food properly and palatably.—M. Kahn, *Hosp. Soc. Service* 4:303 (Nov.) 1921.



## A CASE OF MULTIPLE CRANIAL NERVE PALSY DUE TO EXTRACRANIAL DISEASE

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CHICAGO

All or several of the last four cranial nerves have occasionally been affected by extracranial disease. Lesions of the ninth, tenth and eleventh cranial nerves have been more frequently noted than lesions affecting all of the last four cranial nerves. One of the most striking examples of such a case was reported by Beck and Hassin.<sup>1</sup>

Such lesions may be divided into those due to compression and those due to inflammation. Compression may be produced by adenopathies, of which syphilis and tuberculosis have been the chief cause, and tumors. The two sources of inflammatory causes are infection of the jugular bulb and acute adenitis or periadenitis of pharyngeal origin, for example, lateropharyngeal and retropharyngeal abscess. Vernet<sup>2</sup> compiled a number of cases due alike to compression and inflammation, and described two personally observed cases due to compression and two to inflammation.

A case in which the tenth, eleventh and twelfth cranial nerves were affected following an acute tonsillar abscess from which the infection extended to the parotid region has been described by Bonnet-Roy.<sup>3</sup>

The cases presenting lesions of several or all of the last four cranial nerves have been classified on the basis of symptoms added to a pure laryngeal hemiplegia. Thus, the syndrome of Avellis<sup>4</sup> consists of a unilateral paralysis of the soft palate, in addition to the larynx, as the result of a lesion of the pneumogastric and the internal branch of the spinal accessory nerves. The syndrome of Schmidt<sup>5</sup> is characterized, in addition to the foregoing symptoms, by paralysis of the sternocleidomastoid and the trapezius through the inclusion in the lesion of the external branch of the spinal accessory nerve. The syndrome of Jackson<sup>6</sup> includes, in addition to all of these symptoms, unilateral paralysis of the tongue resulting from a lesion of the hypoglossal nerve.

Several new groups have been added by the literature of the war. Vernet<sup>2</sup> has described a syndrome due to a combined lesion of the glossopharyngeal, pneumogastric and spinal accessory nerves, called by him the syndrome of the posterior lacerated foramen. Collet<sup>7</sup> described a combination of symptoms due to a complete lesion of the ninth, tenth, eleventh and twelfth cranial nerves under the name of glossolaryngoscapulopharyngeal hemiplegia. The same condition was described by Vernet as the complete syndrome of the last four cranial nerves, and by Sicard<sup>8</sup> as the syndrome of the condyloposterior lacerated foramen. Villaret<sup>9</sup> described the syndrome of the posterior retroparotid space, which is characterized by the addition of a lesion of the sympathetic nerve to the syndrome of the last four cranial nerves, producing thereby enophthalmos, narrowing of the palpebral fissure and myosis.

From their exit from the posterior lacerated foramen, the ninth, tenth and eleventh cranial nerves are in close proximity to a point a little below the level of the tip of the mastoid. The twelfth, after its exit from the anterior condyloid foramen, follows closely the course of the other three in the retroparotid space, where its injury is frequently associated with a lesion of the sympathetic nerve. This space is described by Villaret as being bounded posteriorly by the cervical spine, internally by the pharynx, anteriorly by the internal prolongation of the parotid gland and the muscular bundle attached to the styloid process, and above by the base of the skull in the region of the jugular foramen.

The chain of retropharyngeal lymph glands extending to the subparotid gland passes between the twelfth nerve internally and the tenth and eleventh nerves externally, and lies in close proximity to the ninth and the cervical sympathetic. Adenopathies occurring in this chain may readily give rise to multiple cranial nerve palsies.

The symptomatology of a combined lesion of the ninth, tenth and eleventh cranial nerves is constant and easily recognized. As a characteristic triad of symptoms indicative of a complete lesion of these three nerves, Vernet proposes nasal regurgitation of fluids, dysphagia of solids and hoarseness, representing, respectively, paralysis of the palate, pharynx and larynx.

Considerable confusion exists concerning innervation of the soft palate and larynx. The specific func-



Fig. 1.—Atrophy of the tongue, enophthalmos, narrow palpebral fissure, and absence of prominence of clavicular portion of sternocleidomastoid

1. Beck, J. C., and Hassin, G. B.: *Med. Rec.* **88**: 308 (Aug. 21) 1915.  
2. Vernet: *Rev. neurol.* **25**: 117 (Nov.-Dec.) 1918.  
3. Bonnet-Roy, M. F.: *Bull. méd., Paris* **33**: 807 (Dec. 27) 1909.  
4. Avellis: *Berl. Klin.*, No. 41, 1891.  
5. Schmidt, quoted by Vernet (Footnote 2).  
6. Jackson: *Lancet* **1**: 689, 1886.

7. Collet: *Lyon méd.*, May, 1916, p. 121.

8. Sicard: *Marseilles Méd.*, March, 1917.

9. Villaret: *Paris Méd.*, January, 1917, No. 4, p. 78.



tions of the accessory portion of the spinal accessory and the pneumogastric nerves are undetermined. Whether it would be more profitable to consider their functions together as those of the vagospinal nerves remains to be seen.

The glossopharyngeal nerve, according to Vernet, innervates the superior constrictor of the pharynx. Loss of its function results in difficulty in swallowing solids. In lesions of this nerve, the posterior wall of the pharynx deviates to the unaffected side when the patient says "ah" with the tongue pulled forward, and there is disturbance of taste in the posterior third of the tongue.

A lesion of the pneumogastric produces sensory loss on the soft palate and the posterior wall of the pharynx in addition to the well recognized disturbances of secretion (salivation) and of respiration (dyspnea or pseudoasthma). Injury of the accessory portion of the spinal accessory nerve causes paralysis of the soft palate and larynx as well as a rapid pulse, while a lesion of the spinal portion produces paralysis of the sternocleidomastoid and trapezius muscles.

The case reported below resembled clinically the syndrome of the retro-parotid space in that, in addition to the involvement of the last four cranial nerves, the cervical sympathetic was affected. As there were no changes in pulse, respiration, secretion or sensation of the soft palate and pharynx, that part of the vagus having to deal with these functions was unaffected.

#### REPORT OF CASE

**History.**—E. R., a man, aged 45, a laborer, entered Cook County Hospital, Dec. 30, 1920, complaining of a swelling in his neck. Two years prior the patient noted a swelling about the size of a pea beneath the angle of the right jaw. In March, 1920, this began to increase in size, and attained its present dimensions two months before entrance. It had never been painful, but at night when the patient rolled over on his right side, pressing the mass against his jaw, there was slight tenderness. He had a cough of one week's duration. For the last two or three weeks he had had some nocturia, and he had lost 12 pounds (5.4 kg.) in weight since the preceding spring. Of previous illnesses, gonorrhea and a chancre were contracted as a young man, and some history was obtained of a secondary eruption. The family history was negative. The patient had been a very heavy drinker, consuming from a pint to a quart (0.5 to 1 liter) of whisky daily prior to July, 1919, since then imbibing what he could get.

**Examination.**—The patient was rather poorly nourished. He was not acutely ill. The temperature was 98.8, pulse 96, respirations 20. There was an ovoid subcutaneous mass

beneath the angle of the jaw, firm, freely movable, 1 inch (2.5 cm.) long and three-fourths inch (2 cm.) wide at the widest point. Otherwise, the head was negative. The chest was fairly well formed and symmetrical, and no abnormalities were found in the lungs. The heart borders were normal, and no murmurs were found. The abdominal wall and contents were normal. Neurologic examination was negative. The Wassermann reaction was negative. The patient was diagnosed as having tuberculous adenitis and was operated on by Dr. Cubbins.

**Subsequent History.**—Three hard glands of the anterior cervical chain of the size of walnuts, matted together and to the surrounding structures, were removed. Caseous matter was expressed from cavities on section. The postoperative history was negative. (The patient was discharged from the hospital, Jan. 11, 1921.) He was readmitted to the tuberculosis service in May. On this admission there was found, both by physical examination and by roentgenograms, an advanced pulmonary tuberculosis. He had noted that he had been unable to protrude his tongue the greater part of the winter, but this did not immediately follow the operation.

There was a paresis of the vagospinal nerves, that is, of the accessory portion of the spinal accessory and the vagus. There was paralysis of the right side of the soft palate, which was pulled to the left. Occasionally there was a slight regurgitation of fluids. The right vocal cord was paretic; the voice was hoarse and nasal. The glossopharyngeal was affected in that the patient had difficulty in swallowing solids; but no lateral deviation of the pharyngeal wall was observed, even with the tongue pulled forward and on phonation. There was a paresis of the sternocleidomastoid and the trapezius. When the patient turned his head to the left, the sternocleidomastoid muscle did not contract. When the patient shrugged the shoulders, the right

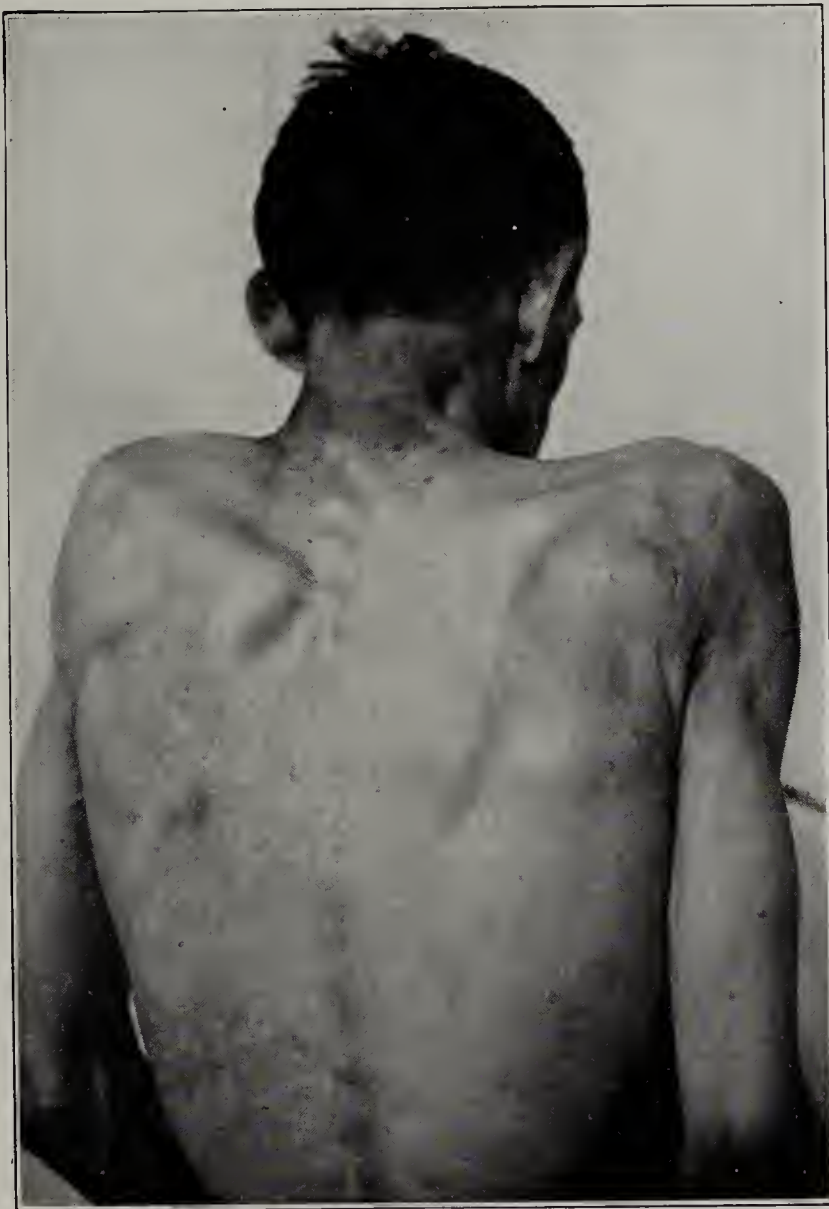


Fig. 2.—Paresis of right trapezius, drooping of shoulder, and failure of outward rotation of lower angle of scapula.

drooped; the inner angle did not deviate toward the spine, nor the lower angle outward. The levator anguli scapulae was more prominently outlined on the right side. Movement about the shoulder joint seemed grossly unimpaired.

The right hypoglossal was paretic. The tongue, however, was protruded in a straight line despite the marked atrophy of the right side of the tongue with the exception of the very tip.

There was a marked narrowing of the palpebral fissure, an enophthalmos, and a small pupil on the right side. Neurologic examination was negative in other respects. No calcified glands could be shown by examination with the roentgen ray.

Death occurred, June 21, 1921, following a course with progressive weakness, difficulty in swallowing and deterioration of the heart muscles. Postmortem examination was not permitted.

**The Enemy.**—Doctrinaire formula-worship—that is our real enemy.—Max Neuburger.



## Clinical Notes, Suggestions, and New Instruments

### DICEPHALUS WITH TWO COMPLETE SPINES

CHARLES A. CIBELIUS, M.D., ROCKFORD, ILL.

A monster having two heads with a varying degree of duplication of the rest of the body is termed dicephalus. The etiology of such monsters is unknown. De Lee<sup>1</sup> states that they come from one ovum and are developed from one germinal vesicle. Entrance of more than one spermatozoid is not the cause, because eggs so impregnated usually die. None of such cases have delivered spontaneously, and only a few have lived more than a short time. In vertex presentations, after failure of forceps delivery, version and extraction have been employed and in four cases decapitation, and then version. The breech presentations have been delivered by manipulation and traction. Beach<sup>2</sup> recently reported a case of dicephalus, with a review of some of the cases.



Fig. 1.—Dicephalus with two spines.

#### REPORT OF CASE

The mother, Mrs. H., aged 20, a secundipara, was admitted to Rockford Hospital at 8 p. m., July 10, 1921. The family history was negative. There had been no twins in the family. She had two sisters and one brother, living and well.

1. De Lee, J. B.: Principles and Practice of Obstetrics, Philadelphia, W. B. Saunders Company, 1918.

2. Beach, W. M.: Case of Derodidymus (Dicephalus), J. A. M. A. 76: 1748 (June 18) 1921.

One sister had a normal child. The patient's history was negative. She had had no illness or surgical operation since childhood. Menstruation began at the age of 12, and was regular, profuse and of seven days' duration. She was married at the age of 16. Her first baby was born two years later,



Fig. 2.—Appearance after injection with barium solution.

with normal delivery. Her last menstrual period occurred Oct. 20, 1920.

When vaginal examination was made the membranes ruptured, and the right foot appeared, the left being flexed. The position of the child was right sacro-anterior. Complete anesthesia, with the usual methods of extraction for breech, were employed. Much difficulty was occasioned in extracting the heads, which were delivered simultaneously. The fetus, both sides, gasped with difficulty for about fifteen minutes. Attempts at resuscitation failed. A third degree tear resulted, which was repaired. A normal placenta was spontaneously expressed twenty-five minutes after delivery. There was a moderate hemorrhage. The mother made an uneventful recovery.

The fetus, a girl, was 19 inches (48 cm.) in length. The occipitofrontal circumference of the right head was 12 inches (30 cm.) and of the left head, 13 inches (33 cm.). The child weighed 7 pounds, 10 ounces (3.5 kg.). The body, heads and arms were perfectly formed. Both feet were clubbed. There was a protuberance between the heads posteriorly, probably rudimentary shoulders and arms. Unfortunately, partial decomposition and maceration took place before a careful necropsy could be made. The fetus had a single cord with a single vein and two arteries. There were two hearts communicating by the adjacent auricles, and two tracheas. The lobes of the lungs could not be differentiated. There was one



perfectly formed uterus. Roentgenograms of the monster were taken by Dr. H. W. Ackemann, before and after injections of the circulatory system through the umbilical vein with barium solution. These revealed: two normal heads connected to one body; two complete sets of cervical, dorsal and lumbar vertebrae; two normal sacra; a normal pelvis, except that the distance between the right and the left ilium was great on account of the extra sacrum; clubfoot; two normal upper extremities; between the two heads, where the other arms normally should be, a clavicle given off of the left twin and a scapula and clavicle off of the right twin; eleven ribs on the left side; ten ribs on the right side; between the two spinal columns, nine rudimentary ribs, connecting them; four of these seemed to be fused at about the sixth and seventh dorsal. There were two distinct heart shadows.

We injected the specimen through the umbilical vein with barium, and found the blood vessels of the heads, chest and abdomen well filled, the arteries as well as the veins, probably because of the barium mixture passing through the foramen ovale. The sinuses in the brain, as well as terminal arteries, were clear. There were two distinct hearts, two aortic arches, two superior venae cavae, two inferior venae cavae and two thoracic aortas. The abdominal findings were indistinct, on account of the barium in the intestinal vessels.

The specimen showed a right and left iliac vessel, but not two sets. The outstanding feature was a large vessel given off of the right heart, which extended upward to the seventh cervical and then gave off two branches, one going to the left head, and the other to the right.

BILATERAL HYDRO-URETER AND HYDRONEPHROSIS,  
DUE TO COMPRESSION OF BOTH URETERS BY  
EXTENSION OF CARCINOMA OF UTERUS  
INTO BLADDER—HORSESHOE  
KIDNEY

FRANK M. DENSLOW, M.D., AND WATSON CAMPBELL, M.D.  
KANSAS CITY, MO.

*History.*—J. W., a woman, aged 40, married, was admitted to the hospital, Sept. 4, 1921, having been picked up by the police on the street as a case of acute mania, and sent to the hospital in an ambulance. She had become violently irrational while standing in the street watching a parade. On regaining her senses, she stated that she had for the past two months felt weak and nervous. The menstrual periods, which had always been regular, had been absent for the preceding two months. She had noticed a mass in the right side of the abdomen for several months. Nine days previous to her admission to the hospital she had been seized with nausea and vomiting, which had persisted. During this time there had been a sense of fullness and of slight pain and tenderness all over the abdomen. She had not been confined to bed at any time.

She stated that she had passed no urine for four days, but she voided about 250 c.c. (8 fluidounces) of pale, straw-colored urine shortly after being sent to the hospital. The same evening, not having urinated again, she was catheterized without result. However, she passed small quantities of urine during the next few days—about 300 to 500 c.c. (10 to 17 fluidounces) in the twenty-four hours. The urine was of specific gravity 1.010 to 1.013, showing a trace of albumin and an occasional pus cell.

The pulse was 100. The blood pressure was 240 systolic and 100 diastolic at the time of admission, though the systolic pressure gradually came down to 210, the diastolic remaining unchanged.

She was irrational in her speech, and restless and semi-stuporous by turns. She repeated meaningless phrases over and over. The principal complaints were of headache and nausea. In general appearance she was well nourished, the skin was sallow, and there was some puffiness under the eyes, and some edema of the feet and ankles.

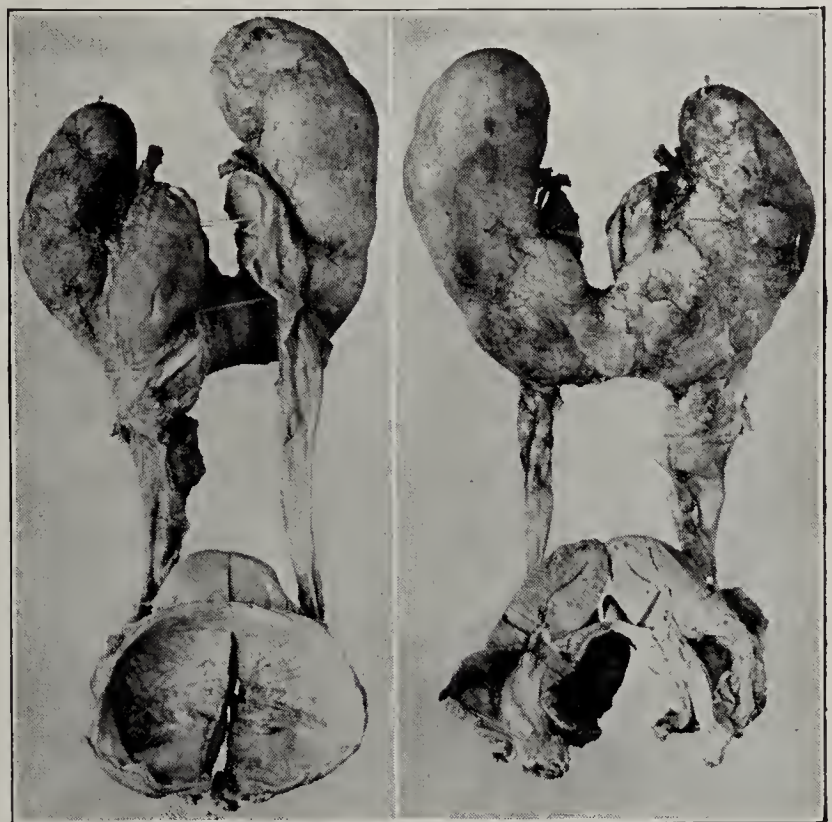
Examination of the head and neck were negative. The heart was enlarged to the left nipple line, and gave over the whole area a soft systolic murmur. The abdomen contained a tumor mass just below the right costal margin, separate from the liver, extending past the midline and almost to the

umbilicus. It was smooth, firm and only slightly tender. By lumbar ballottement, it was identified as the right kidney. There was some rigidity of the voluntary type over the entire abdomen, most marked in the lower right quadrant. Vaginal examination revealed fixation and retraction of the cervix. There was no vaginal discharge.

A roentgenogram of the abdomen was reported negative except for a concretion about  $\frac{3}{4}$  by  $1\frac{3}{4}$  inches (1.9 by 4.5 cm.) in size, outside the upper pole of the right kidney.

Cystoscopy revealed a tumor of the posterior wall of the bladder, with thickening of the bladder wall, considerable villous formation, and a mass of bullous edema. The bullous edema overhung both ureter orifices. An attempt was made to fulgurate sufficiently so that the ureteral orifices might be entered, but the general condition of the patient became so bad that this effort had to be abandoned.

The patient was treated with hot packs and other eliminative and supportive measures to combat the uremia. There was some diminution in the size of the mass in the abdomen. She became progressively worse mentally. There were intervals of stupor, and she died on the tenth day after entering the hospital.



In the view of the anterior surface (at left) the larger size of the right kidney pelvis and ureter is shown. The bristles above are in the accessory arteries; the bristles below are inserted into the ureter orifices. The extension of the carcinoma into the bladder is shown above the ureter orifices. The rest of the bladder is free from implication. The villous formation and bullous edema of the vesical surface of the growth was destroyed in the preparation of the specimen. In the reproduction of the appearance of the posterior surface (at right) the bristles seen above the isthmus are in the accessory renal arteries. The uterus and the posterior bladder wall have been cut through midway between the ureter orifices.

*Necropsy.*—This revealed: no marks or scars on the skin; subcutaneous fat of normal thickness and color; peritoneum smooth and glistening; mesenteric vessels normal; few adhesions of the lungs and old scars at the apexes; anterior portion of the lungs emphysematous, posterior edematous; a normal amount of pericardial fluid; the heart hypertrophied, especially the left ventricle; the heart muscle of good color; the endocardium and valves normal; the liver of normal size, capsule smooth; the liver tissue slightly soft, lobules indistinct; the veins and bile ducts dilated; stone in the cystic duct and a soft, putty-like concretion, light gray, in the gallbladder; intestine negative; stomach, spleen and pancreas negative. Both kidneys presented dilated pelves several times the normal size, and both ureters were dilated, the right being considerably larger than the left. The kidneys were united at the lower pole by a thick and wide isthmus of kidney substance. There was no line of demarcation between the kidneys. The kidneys lay closer than usual to the vertebral column, and the isthmus lay across the bodies of the vertebrae, joining them and



forming one continuous structure of kidney tissue. In addition to the vessels normally entering each kidney at the hilum, there were accessory arteries entering at the right and left of the isthmus, on its upper margin. Whether or not these accessory vessels came directly from the aorta was not determined. The bladder was of normal size. There was a thickened area in the posterior wall above the trigon, involving the intramural portion of both ureters, studded with villous masses on the bladder mucosa. This thickened area was firmly attached to the uterus behind it, in one, firm, almost cartilaginous mass, without any line of demarcation between the bladder and the uterus. The cut surface showed dense infiltration of a light, pearly color. This growth involved the posterior portion of the uterus also, but not to the same extent. The fundus uteri was not involved. The cervix was retracted. The vaginal vault was not involved.

Sections made for microscopic examination showed all the tissues from the endometrium to the mucous membrane of the bladder, in the plane of the internal os, infiltrated with a glandular epithelium, the cell type being that of the mucous glands of the cervix. The sections made from the intramural portion of both ureters (after photographs of the specimen were taken) confirmed the gross findings of infiltration of the periureteral tissues and pressure on the lumen of the ureters.

#### AN AUTOMATIC SYRINGE PIPET\*

LEON H. CORNWALL, M.D., NEW YORK

In laboratory procedures which require the same volume of a given liquid to be distributed in a large number of tubes, an ordinary graduated pipet, the flow from which is regulated by the pressure of the operator's finger, has two disadvantages: it is subject to a certain error that varies directly with the coordinating mechanism of the operator, and it is time consuming.

The automatic refilling syringe shown in the accompanying illustrations simplifies the operation of pipetting and possesses

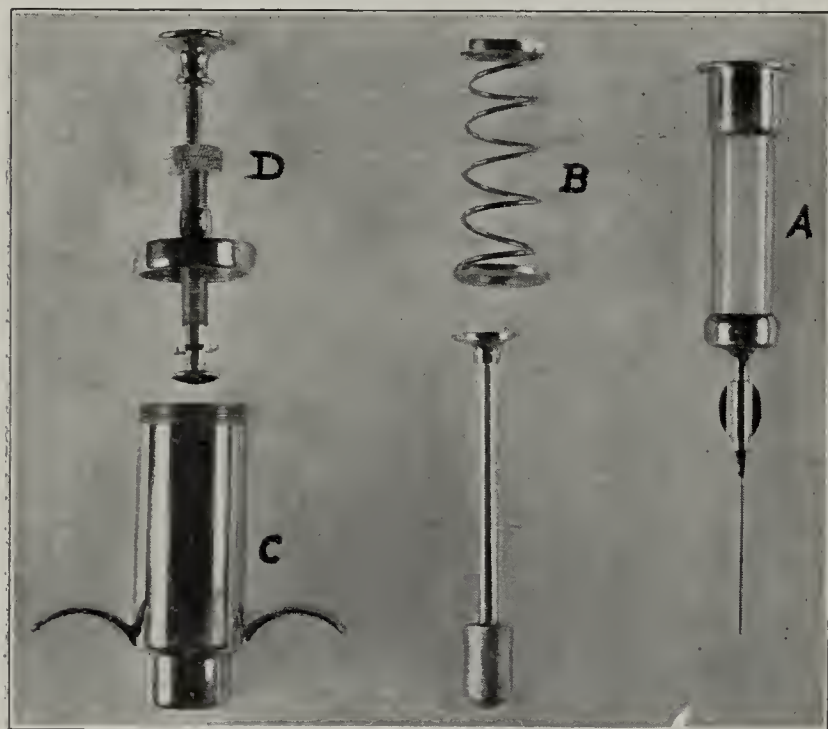


Fig. 1.—Several parts of the automatic syringe pipet with a blunt metal needle attached to the barrel.

two important advantages: mechanical precision and economy of time.

The instrument consists of an ordinary glass or metal syringe (A), the piston of which is slightly longer than the barrel. Between the shoulders at the ends of the barrel and piston, a spring (B) is inserted. A metal case (C) fits over the barrel of the syringe. In the end of the metal case there is a regulating device with a set screw (D) by means of which the excursion of the piston may be regulated so that the desired volume of liquid may be drawn into the barrel. After

\* From the pathologic laboratories, City Hospital.

the contents have been delivered, the end of the syringe or attached needle is immersed in the liquid to be measured or pipetted, the thumb pressure is released and the piston automatically is carried upward by the spring.

Blunt needles of any desired length or caliber may be used. For colloidal procedures which require all glass apparatus, glass needles (E) may be substituted for metal.

Each laboratory should have an accurately calibrated barrel graduate (F) for a standard so that the graduations of each syringe may be verified. This standard graduate obviates the necessity of purchasing syringe barrels with graduations, but I have found it more convenient to use graduated barrels which I verify and, if necessary, correct to the laboratory standard.

The principle of this instrument was used by Dr. Arthur Vernes in his studies of the colloidal properties of blood serum. I have employed the instrument in serologic work for more than a year and have found that the mechanical precision and economy of time afforded recommend it for general laboratory use. In the Lange colloidal gold and immunologic tests requiring serial dilutions, and in serologic and chemical tests in which considerable pipetting is necessary, it saves time and simplifies the technic. This instrument can be obtained from Becton, Dickinson & Co. of Rutherford, N. J.

55 East Seventy-Sixth Street.

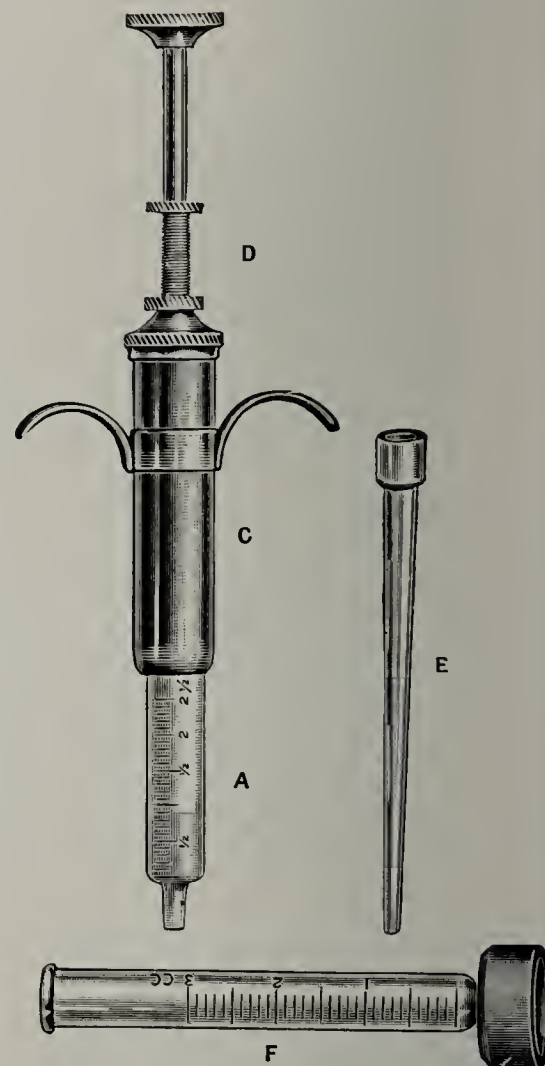


Fig. 2.—Automatic syringe pipet assembled and ready for use, with a blunt glass needle and the verifying graduate.

#### FOREIGN BODY IN THE LUNG FOR THIRTY-FIVE YEARS COMPLICATED BY ABSCESS AND TUMOR FORMATION\*

EDWARD WEISS, M.D., AND FRANK H. KRUSEN, M.D., PHILADELPHIA

This case is interesting for two reasons: (1) the presence of a foreign body in the lung for more than thirty-five years, and (2) the development of an unusual new growth of the portion of the lung which contained the foreign body.

##### REPORT OF CASE

*History.*—C. T., a white woman, aged 37, admitted to the Jefferson Hospital in the service of Dr. McCrae, Aug. 16, 1921, complained of pain in the right lower chest, cough and expectoration. When 13 months of age she was carried into the house from the yard, where she had been playing, in a violent attack of choking and coughing. It is thought that at this time she inhaled the foreign body. From then on she was troubled with cough and expectoration, and at the age of 7 an exploratory thoracotomy was performed, probably with the idea that she had empyema, a not uncommon mistake in foreign body cases. The operation was unsuccessful, and her

\* From the Department of Pathology, Jefferson Medical College.



symptoms continued without, however, producing systemic effects, for she grew to be a strong and healthy young woman. She was married at the age of 22, and had six children, all of whom are at present living and well. In May, 1921, her appendix was removed and a gynecologic condition corrected. Following the operation her cough became more severe, and two weeks after her return from the hospital she began to expectorate bloody sputum. This increased and pain began in the right lower chest. The pain was continuous and aggravated by coughing. Since the operation she had been confined constantly to bed.

*Examination.*—The patient was emaciated, and of sallow appearance. She was slightly dyspneic, without cyanosis, but appeared to be suffering considerable pain. The chest was flat and expansion was generally limited, but more on the right. At the right base posteriorly, there was flatness and extreme tenderness on percussion. Over this area the breath sounds were very distant, with an occasional squeaking r le on deep inspiration. In the posterior axillary line at the level of the ninth rib was an operative scar, and about this the skin and superficial tissues were extremely sensitive to touch.

Roentgen-ray examination revealed a round mass, smooth in outline, in the lower right chest extending from the lower border of the sixth dorsal vertebra to the middle of the right diaphragm. This was probably a multilocular abscess. In the anterior-posterior plane about 1½ inches (38 mm.) from the right border of the spine and just above the diaphragm was a foreign body shaped like a small scarf pin. In the lateral plane it was close to the posterior wall of the chest and above the diaphragm. The point was downward and outward, and it seemed as if it might be lodged in the posterior branch of the right lower lobe bronchus.

*Clinical Course.*—Two weeks after admission to the hospital the patient had gained considerably in strength and was resting comfortably. She stated, however, that she still suffered pain at the right costal margin, and there was extreme tenderness to the slightest touch in this region. The hemoglobin was 74 per cent. and the white blood cells 15,800.

September 8, bronchoscopy was done. The abscess cavity was entered and a large amount of foul pus evacuated; but, because of the general condition of the patient, further search for the foreign body was deferred. September 12, the patient died from a very severe pulmonary hemorrhage. Necropsy was performed the following day.

*Necropsy Findings.*—The right lung was densely adherent at the base posteriorly and to the diaphragm. When the organ was separated from the thoracic wall, dense masses of yellowish-white tissue resembling new growth were found. The lower lobe was atelectatic and was practically all involved in a large, multilocular abscess with considerable formation of fibrous tissue. At about the center of this mass was a small metallic object, apparently the head of a scarf pin. Abscess formation and tissue destruction had progressed to such an extent that the ninth, tenth and eleventh ribs and corresponding vertebrae were roughened and eroded, the tenth rib being entirely severed from its vertebral articulation.

Histologic examination of sections of the lung from the right lower lobe revealed marked diffuse increase of fibrous tissue, pronounced small round cell infiltration and, in addition, invasion by a tumor process. The bronchial walls were very thick and infiltrated by small round cells and, a point thought to be significant in view of findings to be described, the epithelium lining some of the bronchi had reverted to the squamous type. The tumor proper was composed of irregular strands and islands of atypical epithelial cells with a substantial stroma of fibrous tissue. The cells were large, round or oval, and often were in whorled arrangement with what appeared to be typically keratinized centers. The growth had all the appearance of squamous cell carcinoma, and as such probably arose from bronchial mucosa or alveolar epithelium.

#### COMMENT

Metaplasia of bronchial epithelium occurs rather commonly, especially in connection with chronic pulmonary disease such as tuberculosis. Haythorn<sup>1</sup> noted the condition during the study of a case of unresolved pneumonia which contained areas both of organization and of abscess formation. One field was found which showed two medium-sized bronchi, the

mucosa of which was replaced by granulation tissue covered by stratified squamous epithelium. Adler,<sup>2</sup> in his monograph on primary tumors of the lung and bronchi, mentions that metaplasia may be associated with acute processes; he believes that the existence of such islets of pavement epithelium in the lung after acute inflammation may have some connection with the development of pavement cell cancer, saying, "The assumption of dislocated germinal cells is not needed to explain the development of pavement epithelium cancer in the lungs."

Scott and Forman,<sup>3</sup> in a report of four cases of primary cancer of the lungs, mention one of squamous cell epithelioma in a patient who for years had been subjected to the influence of strong chemical vapors and heavy tobacco smoke. The bronchial epithelium not involved in the new growth presented many areas of metaplasia to a distinctly flattened type of cell.

In our case, the presence of a foreign body for such a long period of time, producing marked chronic inflammatory change both in the lung and the bronchi, with distinct metaplasia of the bronchial epithelium, would seem to point to the latter as the source of this unusual primary cancer of the lung.

#### INTERMITTENT HYDRARTHROSIS

A. L. NIELSON, M.D., HARLAN, IOWA

In a recent article, Bierring<sup>1</sup> has given a thorough review of the literature of this subject, and a report of the eighth American case in the literature. The fact that the condition is rare (Bierring found reports of but seventy-six cases) as well as of interest, in that there is as yet no explanation of the phenomenon of the regular recurrence of the joint swellings, leads me to add one case report to the literature.

#### REPORT OF CASE

*History.*—L. H., a single woman, aged 38, a stenographer, who in childhood had scarlet fever, and in 1919 had epidemic influenza, and who has had two attacks of inflammatory rheumatism, in 1908 and in 1912, was examined, Aug. 27, 1921. Her mother suffered with chronic arthritis, and one sister had a mitral heart lesion; otherwise the family history was negative.

The present trouble was a regularly recurring swelling of the left knee joint, with pain and discomfort in the knee during the swelling and a slight constant weakness of the joint. The first trouble with the knee was in 1907, when it became swollen and painful. This was treated by extension of the leg, and though severe for a time, it gradually improved. From that time until about August, 1910, the joint was at times swollen and painful, and again apparently normal, but with no regularity of the attacks. In August, 1910, the joint was opened and drained, with the diagnosis of chronic serous synovitis.<sup>2</sup> There was some relief for a short time after this was done, but, on the trouble recurring, the operation was repeated in March, 1911. After the second operation the leg was placed in a cast for two weeks. For the year or two immediately following this time, swelling occurred at various times, but the regular recurrence was not noticed. Since about 1913, however, the attacks had been regularly recurring. The cycle in this case was from ten to eleven days; on the tenth or eleventh day after the beginning of one attack, the next began. For the last four months, the attacks had varied in the time of occurrence as much as twenty-four hours; one attack might come on the tenth day following the previous one, and the next might be either the tenth or the eleventh day following. The swelling reached its height on the second day and disappeared about the fourth day. There was pain during the swelling, most marked on the second day. There was some variation in the amount of swelling in different attacks. During the last several years a number of local applications had been used, with no effect on the occurrence or on the amount of swelling, though some comfort was obtained by the use of an elastic bandage around the knee.

2. Adler, I.: *Primary Malignant Growths of the Lungs and Bronchi*, New York, Longmans, Green & Co., 1912, p. 65.

3. Scott, E., and Forman, J.: *Primary Carcinoma of the Lungs*, M. Rec. 90: 452 (Sept. 9) 1916.

1. Bierring, W. L.: *Intermittent Hydrarthrosis*, J. A. M. A. 77: 785 (Sept. 3) 1921.

2. Personal communication to the author from the attending surgeon.

1. Haythorn, S. R.: *On the Metaplasia of Bronchial Epithelium*, J. M. Res. 21: 523, 1912.



*Examination.*—The patient was fairly well nourished; the height was 64 inches (162.5 cm.); the weight, 110 pounds (49.9 kg.). The findings were negative with the exception of the left knee, which, on the second day of the attack, showed swelling of the joint. There was at this time no ballottement of the patella, though the distention of the synovial sac could be traced throughout its extent. There was no limitation of motion of the joint, no redness, heat or other sign of inflammation. Over the area of greatest enlargement, the circumference of the knee when swollen was 3 inches (7.5 cm.) greater than between the attacks. Roentgen-ray examination of the joint was negative. During the interval between the attacks, examination of the left knee was negative.

The patient, though handicapped by this affection, is able to carry on her work regularly. She walks several blocks every day, as moderate exercise seems to be of benefit to the knee. Various methods of treatment, including osteopathy, have had no effect on the process.

The history and findings are so typical of intermittent hydrarthrosis that the diagnosis is unquestioned.

#### TABES DORSALIS AND GASTRIC ULCER

JOHN W. SHUMAN, M.D., SIOUX CITY, IOWA

Crohn<sup>1</sup> recently stated that he had failed to find in literature any reference to syphilitic ulcer or gumma of the stomach in a tabetic person or particularly in one suffering from gastric crisis of tabes, and that this undoubtedly holds good for the stomach and duodenum as well as for other visceral invasions. He also stated that some doubt may have been thrown on the latter remark by the observations of Warthin, who demonstrated in postmortem examinations spirochetes in the lungs, liver, etc., as frequent concomitants to spirochetal involvement of the nervous system.

I do not agree with his opinion that gastric ulcer in the syphilitic (tabetic or otherwise) is a pure coincidence, but believe that syphilis, like tuberculosis, though less frequent, is a cause of gastric ulcer. In a study of 200 cases of pulmonary tuberculosis, I found that gastric ulcer had been diagnosed in 4.5 per cent., proved by necropsy or operation. I then went through my gastric ulcer records and found that in nearly 25 per cent., pulmonary tuberculosis had also been diagnosed.

In the following case there existed gastric ulcer with tabes dorsalis:

#### REPORT OF CASE

A man, aged 36, examined, Oct. 3, 1920, complained of "stomach trouble for fifteen years." The family history was unimportant, except that the patient's father died of apoplexy at 50. His previous history evidenced that he had had a "cerebral stroke" and a Wassermann reaction two plus positive in 1918.

The pupils reacted sluggishly to light; Romberg's sign was positive; the knee jerks were absent, and there was some tenderness of the epigastrium, mostly to the right of the median line. Roentgen-ray examination of the gastrointestinal tract disclosed definite prepyloric spasm, duodenal deformity, hyperperistalsis, and as much of the meal remaining at six and one-half hours as was present at two and one-half hours. At twenty-four hours the head of the meal was at the splenic flexure, but in the pyloric end of the stomach a small amount of barium was present.

The diagnosis of chronic pyloric ulcer, most likely syphilitic, was made, complicating tabes dorsalis, and antiulcer and antisiphilitic treatment advised. Two weeks later I received a personal communication from the Mayo Clinic, reporting dementia paralytic in conjunction with a plus two gastric retention and a gastric ulcer, and that the patient had become violently insane. He died one week later at Cherokee, Iowa, State Hospital from "cerebral hemorrhage." It is regretted that we have not the postmortem studies to verify the assertion that this was a syphilitic gastric ulcer in a tabetic case.

Frances Building.

#### TOTAL BLINDNESS OF BOTH EYES CURED BY DRAINAGE OF SPHENOID AND ETHMOID CELLS \*

JAMES JOSEPH KING, M.D., NEW YORK

Mrs. E. C., aged 50, referred to me by Dr. John J. Cotter, Jan. 27, 1921, with total blindness in the right eye, believed to be due to sphenoid and ethmoid disease, had complained of headache over the occipital region for three months, and over the frontal area for one week. There had been disturbance of vision in the right eye for the last four days, and total blindness in the right eye for twenty-four hours.

Eye examination by Dr. A. S. Kelly revealed: Right eye: pupil moderately dilated, immobile, no consensual reaction; vision nil, there not being even perception of light; fundus normal. Left eye: pupil reacts to light and accommodation normally; vision 20/20; media, membrane and fundus normal.

Examination of the nose and sinuses by inspection and transillumination was negative. No pus was present in the nares.

Dr. George S. Dixon, who made a roentgenographic examination of the sinuses, reported that the frontal sinuses were well developed and clear. The right ethmoids and both antrums were cloudy. The left ethmoids were fairly clear. The nasal septum was deviated to the left. The ethmoidal and sphenoidal regions were shown by lateral plates to be cloudy. The sella was of liberal size but good form, and without erosion.

On the evening of January 27, under local anesthesia, a simple exenteration of the anterior and posterior ethmoids was done and the anterior inferior wall of the sphenoid was removed. The usual postoperative treatment of cleansing the nose was carried out.

January 30, the right eye gave consensual reaction. No other change was noted. There was no light perception.

Dr. Hunt reported negative neurologic findings, but suggested a Wassermann test. The blood pressure was: systolic, 110; diastolic, 55.

February 1, five days after operation, the patient counted fingers with the right eye at 2½ feet. She recognized hand movements and saw large objects in the room. The pupil was smaller but still immobile. There was consensual reaction to light.

The vision gradually improved in the right eye, until at the end of about two weeks there was 20/40 vision.

After the vision began to improve (February 4), a blood test was four plus positive. Antisyphilitic treatment was given, which consisted of an injection of arsphenamin once a week, mercurial inunctions, and saturated solution of potassium iodid internally, beginning with 15 drops after each meal and increasing the dosage 1 drop each time to 75 drops.

February 7, the patient complained of disturbance of vision in the left eye, and in a few days she had lost all vision in the left eye. By this time she had regained considerable vision in the right eye. We thought that it was probably due, in view of the four plus Wassermann reaction, to syphilis. She had then had two or three arsphenamin injections, mercurial inunctions and potassium iodid. Notwithstanding the fact that the vision in the right eye had cleared up after the nasal operation from nil to 20/40, we waited one week after the left eye became totally blind, expecting the treatment to clear it up. At the end of a week there was no improvement in the vision in the left eye. She was totally blind in it. I then opened up the sinuses on the left side as I had done on the right side. The only significant thing in the operation was that bare bone was felt on the outer wall of the sphenoid. From this operation she made an uneventful recovery.

This side was operated on, February 16, and the patient left the hospital, February 19. I have not seen her since, but I have been informed by Dr. Kelly that she has 20/40 vision in both eyes.

#### CONCLUSIONS

In view of this experience we are justified in concluding that:

1. In sinus disease affecting the vision, operation must be performed early if sight is to be restored.

1. Crohn, B. B.: The Existence of Gastric Ulcer with Tabes Dorsalis, J. A. M. A. 77: 2023 (Dec. 24) 1921.

\* Read before the Oto-Laryngological Section of the American Academy of Ophthalmology and Oto-Laryngology at its twenty-sixth meeting, Philadelphia, Oct. 17, 1921.



2. When the case is complicated by a positive Wassermann reaction, the syphilitic condition should be treated and at the same time treatment should be given as if syphilis were not present.

40 East Forty-First Street.

## VACCINIA OF THE LIP

ALFRED SCHALEK, M.D., OMAHA

B. N., a girl, aged 10 years, was vaccinated on the outer upper third of the left leg, Dec. 12, 1921. A typical vaccination lesion formed with considerable swelling and infiltration of the tissues and a slight lymphangitis. One week later a sore appeared on the vermilion line of the left angle of the lower lip. The girl had had a cold sore at this location a week previously to the vaccination. The lesion on the lip was round, about three-quarters inch (2 cm.) in diameter. The edges were sharply defined, elevated and indurated, and the center was depressed, eroded and covered with a tenacious mucopurulent secretion. The left side of the face was considerably swollen. The submaxillary glands were enlarged and hard. No pain was complained of. The temperature had gradually risen to 103 during the previous two days. The patient had no appetite and felt ill.

The lesion on the lip had the typical appearance and all the features of a syphilitic sclerosis, and this diagnosis was made tentatively pending further laboratory tests and examinations. The Wassermann test, repeated twice within a week and expected at this time to be positive, was negative. A thorough search in a number of dark field examinations revealed no spirochetes. In order not to interfere with finding them, no local treatment was given except an ice bag over a moist dressing. During the next two weeks the general symptoms subsided and the temperature became normal. The ulcer healed, leaving a slightly depressed cicatrix. The induration gradually disappeared. Another Wassermann test at this time was negative. At the present date the scar is flat, soft, and there is no evidence of any secondaries.

I report this case because it is of interest for several reasons. Autoinoculation and production of new vaccine lesions, especially on denuded parts of the skin, is not exceptional. Schamberg cites a report of a diffusion of vaccination lesions on an eruption of moist eczema. In my case the broken down herpes vesicles provided a favorable soil. An accidental vaccination on the lip, however, is rare, and its clinical appearance probably not well known. In my patient it closely resembled a syphilitic infection in every feature. The incubation period, the characteristic appearance of the lesion, the hard, cartilaginous induration of the tissues, the indolent regional adenopathy and the absence of pain comprised a complex of symptoms which in former years would have been considered complete evidence of a syphilitic infection. Only the most painstaking investigations with modern methods enabled us to exclude it and to decide on the diagnosis of accidental vaccination.

Brandeis Theater Building.

# THE USE OF MERCUROCHROME IN PATHOLOGIC AND BACTERIOLOGIC TECHNIC

A. A. EGGSTON, M.D., NEW YORK

Pathologist, Manhattan Eye, Ear and Throat Hospital

A new laboratory stain is at present particularly welcome because of the very poor quality of some of the laboratory dyes now available. This is especially true of the eosin preparations. Several sources of eosin have provided a product so unstable that pathologic technic with their use has become discouraging and unsatisfactory. In addition to the instability of the solutions, the preparations of eosin were slow in staining and poor in penetration. The penetration has been so poor that subsequent dehydration of the tissue would remove all of the cytoplasmic stain. As a result, mercurochrome-220 soluble, the disodium salt of dibromoxymercury fluorescein, a synthetic dye, described by Young, White

and Swartz,<sup>1</sup> was employed for a cytoplasmic stain in making histologic sections.

Mercurochrome is a dye salt occurring in iridescent green scales, slightly hydrosopic and readily soluble in water. It forms stable aqueous solutions which are not affected by moderate heat or exposure to air and are not precipitated by protein substances, all of these qualities rendering this dye a favorable substitute for eosin or other acid dyes.

The stain can be used in staining histologic sections prepared by embedding in paraffin, celloidin or by freezing. The technic for staining the sections is the same as the standard one, except that a solution of mercurochrome from 0.25 to 1 per cent. is used instead of eosin. The 0.25 per cent. solution stains the tissue thoroughly in from one-half to one minute. Weaker or stronger solutions may be used, but the time of staining in either instance must be adjusted. The solution of mercurochrome may be used repeatedly over a much longer period of time than eosin.

As a contrast stain with hematoxylin the tissues show beautiful cellular details. Eosinophils, neutrophils, leukocytes, and plasma, mast and connective tissue cells are easily recognized by this stain. The only precaution necessary is not to overstain, which is a tendency of mercurochrome, as it acts rapidly and intensely.

In making powdered Wright's blood stain, mercurochrome may also be beneficially substituted for eosin. Wright's stain prepared by the use of mercurochrome gives an intense, rapidly acting stain. The stain should not be allowed to remain in contact with the blood film more than one-half minute after fixation when 0.2 per cent. solution in methyl alcohol is used.

Mercurochrome in 0.25 per cent. solution is a very valuable substitute for the ordinary counterstains employed in making Gram's stain. It stains instantaneously, and should not be allowed to act more than half a minute.

166 West Seventy-Second Street.

## ACETONE IN THE TREATMENT OF SYPHILIS

ORVALL SMILEY, M.D., INDIANAPOLIS

I find that acetone acts readily as an absorbefacient of the mercurial ointments.

Saturating cotton with acetone and thoroughly cleansing the skin by rubbing over the area, on which the ointment is later to be applied, clears and prepares the way for the mercury. The acetone dissolves the oil and sebaceous material in the pores of the skin and the hair follicles, and adhesive matter on and around the skin epithelial cells. Usually two or three large pledgets of cotton thus saturated are sufficient to use over the area.

With this preparation of the skin before permitting the mercury inunctions, the mercury is much more quickly adsorbed and saturation is produced with much less effort than when applied without it.

The advantages of the use of acetone in this connection are apparent in the saving of time and in producing prompt saturation.

For eighteen months I have used acetone for the acceleration of the absorption of mercurial ointments, and feel that it offers distinct advantages.

227 Bankers Trust Building.

1. Young, H. H.; White, E. C., and Swartz, E. O.: A New Germicide for Use in the Genito-Urinary Tract: Mercurochrome-220, J. A. M. A. **73**:1483 (Nov. 15) 1919.

**Teachers Should Be Real Clinicians.**—A considerable need of the day in schools—both graduate and undergraduate—is that the teachers of practical branches should be real clinicians, and this applies to surgery as well as medicine. The complexity of our present day situation requires much hard thinking and working to devise ways and means to make available the splendid fruits of modern science—it may be of some short cuts in methods, it may be by more thoroughgoing review of clinical conditions, checked by the most refined technic of scientific methods.—A. Stengel, *Virginia M. Monthly* 48:439 (Nov.) 1921.



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SATURDAY, FEBRUARY 18, 1922

## PAIN IN GASTRIC ULCER.

Recent experience has indicated that in a number of respects some of the current dictates of experimental physiology need to be checked up by observations of human subjects before they are applied directly to the problems of clinical practice. For example, it is implied, if not expressly stated, in some of the textbooks that the contents of the stomach carried to the pylorus by the continued peristalsis of the gastric musculature find their way through the sphincter only at occasional intervals. In the words of a recent writer,<sup>1</sup> "bombardment by the peristaltic waves is evidently not the cause of its opening, for many such waves may arrive at it without this result." Hence, other explanations of the relaxation of the pylorus have been championed, among them the theory of the acid regulation of the inhibition and stimulation of the contractile sphincter at the portal of the duodenum. Nevertheless, several American clinicians<sup>2</sup> have apparently demonstrated convincingly, by roentgenographic observations, that in normal man "the pyloric sphincter relaxes as each and every peristaltic wave approaches that orifice."

The question of the interrelations of pain and motor activities of the stomach in cases of ulcer seems to be another item subject to somewhat contradictory ideas. It is now admitted that the sensation of hunger is associated with rhythmic contractions of the stomach which are more marked as the sensation becomes more intense. When a sort of gastric tetanus occurs, the sensation of hunger is continuous, but it disappears at once with the relaxation of the musculature. It is believed that the sensation arises because of the enforced stimulation of afferent nerve endings in the muscular layers of the stomach. But, that the pain of peptic ulcer is due to abnormal motor phenomena of the stomach, as has been asserted more than once, is no longer the only logical conclusion with respect to this phenomenon. Reynolds and McClure<sup>3</sup> of Peter Bent

Brigham Hospital, Boston, have lately presented roentgenographic evidence that peristalsis may be either active or absent during the occurrence of pain in patients with peptic ulcer. They justly point out that the evidence of their predecessors to indicate that pain is accompanied by pylorospasm or contraction of the duodenum is indirect, and consequently its real existence is problematic. It is not denied that patients with duodenal or gastric ulcer show pronounced modifications of the normal motor activities of the healthy stomach. One may well conceive, however, that motor activities in the gastric musculature are consequences rather than causes of localized pain, just as contraction of voluntary muscles is sometimes brought about to avert the consequences or even the occurrence of pain. However plausible it may seem to assume that muscular movements surrounding an ulcerated area in the stomach and duodenum could cause pain, provided pain nerves were present, the assumption does not explain why the pain does not usually persist throughout the entire emptying time of the stomach, or why pain occurs early after food ingestion in some patients and late in others. One must still agree with Reynolds and McClure that the causal relations of gastric motor activities to the pain of peptic ulcer remain problematic; for the fact that the two phenomena, normal or abnormal gastric or sphincteric motor phenomena and the pain of peptic ulcer, occur simultaneously does not conclusively demonstrate that motor phenomena cause the pain.

## THE STUDY OF HOOKWORM DISEASE IN TRINIDAD

The study of the epidemiology of hookworm disease assumes peculiar importance in the tropical or subtropical countries where, owing to special conditions, the infection more readily becomes widespread throughout the population. In these warmer climates the distribution of the cases is less likely to be restricted to persons engaged in particular industries, such as miners, tunnel diggers or farmers, who are more likely to come into direct contact with damp earth than are other members of the communities in which there is proper sewage disposal and where cold, dry weather is detrimental to the development of the hookworm larvae. Hookworm disease is preeminently a disease of warm countries, for here climate and the usual primitive character of the sanitary arrangements favor not only the preservation of the parasite but also the readiness of exposure.

Perhaps some of the foregoing considerations will account for the expedition sent to Trinidad last summer by the department of medical zoology of the School of Hygiene and Public Health of Johns Hopkins University to study the life of hookworm eggs and larvae in the soil. The investigations, supported by the International Health Board of the Rockefeller Foundation

1. Macleod, J. J. R.: *Physiology and Biochemistry in Modern Medicine*, St. Louis, 1918, p. 456.

2. Colc, L. G.: *Physiology of the Pylorus, Pilleus Ventriculi and Duodenum as Observed Roentgenographically*, J. A. M. A. **61**:762 (March 6) 1913; *Am. J. Physiol.* **43**:618, 1917. McClure, C. W.; Reynolds, Lawrence, and Schwartz, C. W.: *Behavior of the Pyloric Sphincter in Normal Man*, *Arch. Int. Med.* **26**:410 (Oct.) 1920.

3. Reynolds, Lawrence, and McClure, C. W.: *Motor Phenomena Occurring in Normal Stomachs, in the Presence of Peptic Ulcer and Its Pain, as Observed Fluoroscopically*, *Arch. Int. Med.* **29**:1 (Jan.) 1922.



and the Trinidad Ankylostomiasis Commission, have given renewed evidence of the supreme importance of the proper disposal of human excrement in combating the disease.<sup>1</sup> The Trinidad expedition was fortunately able to apply new methods for isolating the larvae of the hookworm from considerable quantities of soil and thus secure unimpeachable evidence regarding the distribution of soil infestation. Soil pollution from dangerous sources does not always produce the latter; for apparently there are soil conditions, such as heavy clay loam may afford, which are unfavorable for the development or continued life of the hookworm larvae, unless there is protection by shade and vegetation. Stiles<sup>2</sup> long ago asserted that, in the localities visited by him, hookworm infection was preeminently a disease of the piney wood and sand localities, occurring less in clay regions.

The pig, a neighbor of man in many inhabited regions, has also been incriminated by the Trinidad expedition. The observations of Ackert showed that eggs of the human hookworm which had passed through the digestive tract of the pig developed as readily in pig as in human feces, thus making pigs a factor in the dissemination of hookworm larvae whenever they have the opportunity of ingesting human feces containing hookworm eggs. The chicken was acquitted of serious complicity in the epidemiology, in view of the great reduction in the number of infective larvae produced by passage of dangerous material through these animals.

The new field investigations have shown, further, that mature hookworm larvae do not migrate actively from their place of development, although they may be carried to considerable distances by the action of water or on the feet of man. The observations also showed that the present idea that the soil of considerable areas can be infested by the migrations of the larvae from limited centers is untenable. In Trinidad the length of life of infective hookworm larvae in the soil is short, almost never exceeding six or seven weeks. In an area of a cane field in which intense soil infestation occurred, there was a reduction of more than 90 per cent. in the numbers of larvae in about three weeks after the practical elimination of soil pollution. After six weeks, only a very few larvae were left. Cort states that the new findings, which are contrary to the present conception of the length of life of infective hookworm larvae, indicate that under tropical conditions the larvae will die out quickly in the soil after the elimination of soil pollution by infested individuals. Aside from its actual contributions to scientific knowledge, the results of the survey lend additional support to the belief that proper disposal of excreta, coupled with a campaign of education, form the basis of prompt

success in the eradication of soil pollution—a fundamental factor in the management of the hookworm problem.

#### THE MECHANISM OF DEFENSE AGAINST BACTERIA IN THE MOUTH

We usually think of the oral cavity as open to colonization by any and all bacteria that may enter its ample portal, and the routine demonstration in elementary bacteriologic courses of a smear of the mouth scrapings with its seething masses of all sorts and conditions of bacteria is usually sufficient to establish this idea firmly in our minds. From this it is only a step to imagine that, if the colonizing bacteria are pathogenic, they may bide their time until some unfortunate lowering of resistance permits them to make an attack on the proprietor of their haven of refuge.

A series of studies by Bloomfield<sup>1</sup> at Johns Hopkins has established a different and undoubtedly much more accurate conception of what happens to bacteria that get into the mouth. It seems that although the oral cavity has no elaborate system of ciliated epithelium, like the nose and air passages, to rid it of bacteria and foreign particles, nevertheless it accomplishes this purpose quite as effectually. Bacteria or fine dusts placed in the normal mouth disappear in a surprisingly short time. Although there is a marked tendency for them to adhere, because of the adhesive properties of the moist surfaces and the irregular architecture of the cavity with its numerous crevices, they do not long remain, whether inert particles or pathogenic bacteria. Nor do they spread at large over the mouth, their removal taking place in an orderly and uniform manner, by nearly direct retreat toward the rear, and commonly without much lateral motion. There is no forward dissemination, and the removal seems to be accomplished by the suction currents set up by the muscular structures about the cavity. In the case of carbon particles, the removal is usually accomplished in from fifteen to thirty minutes. Of particular interest is the fact that the faucial tonsils are normally so protected by the pillars that the particles from the mouth are swept by without coming in contact with them; even when a thick suspension of charcoal is swallowed, there may be no trace of it deposited on the tonsils. Likewise, the upper part of the pharyngeal wall seems to be untouched by swallowed fluids. This is vastly different from the prevailing idea that the tonsils sit at the entrance to the alimentary canal to sort over everything that passes by, and especially to pick out and destroy dangerous bacteria. But it is of importance that if, for any reason, particles do get lodged in the tonsil surface, they remain there for some time; the same is true of particles that lodge in any nook or cranny outside the range of the cleansing action of the oral fluids.

1. Cort, W. W.; Augustine, D. L., and Payne, G. C.: Investigation on the Activities of Infective Hookworm Larvae in the Soil, *J. A. M. A.* 77: 2035 (Dec. 24) 1921.

2. Stiles, C. W.: *Osler's Modern Medicine* 1: 587, 1907.

1. Bloomfield, A. L.: *Am. Rev. Tuberc.* 4: 247 (June) 1920; 5: 902, 1922.



When the foreign particles are living bacteria, another factor is introduced, the suitability of the mouth fluids as a culture medium. For example, influenza bacilli suspended in fresh saliva cannot be cultivated after twenty-four hours, and some other organisms seem to be even more susceptible. However, the bacteria that constitute the usual flora of the mouth, which are chiefly certain diphtheroids, streptococci and gram-negative cocci, evidently find saliva innocuous. Experimentally, it is found that when bacteria are introduced in large numbers into the healthy mouth they soon disappear, presumably chiefly through mechanical removal like the carbon particles; at any rate, they do not secure a foothold. If, through the presence of injury, bacteria do infect a certain part of the oral cavity, they do not become spread generally through the cavity, but are washed backward along the well defined currents of the mouth fluids. Thus, in a person with a staphylococcus tonsillitis these organisms may not be found at all on the tongue or in the upper pharynx. This fact undoubtedly has much importance in connection with the transmission of disease; for, if the bacteria on an infected tonsil ordinarily can move only backward, as Bloomfield's experiments indicate, the danger of the individual as a source of contagion must be greatly reduced. The task of destroying the free bacteria of the mouth and throat, both in health and in disease, then falls on the gastric juice and the intestinal tract with its army of native bacteria.

#### VIEWS REGARDING IRON IN THERAPY

Iron has so long been administered in some form or other in the treatment of anemia that one might well suppose that its function in the regeneration of blood had been clearly determined. This is far from being the case. For some time there was a vigorous controversy as to whether the body is capable of absorbing iron in inorganic form and synthesizing it into the complex molecule of the blood pigment hemoglobin. The debate resolved itself into a presentation of the relative values of iron in organic and inorganic combinations, respectively, for the uses of blood regeneration. Out of the somewhat vigorous discussion has come the conviction that the utilization of inorganic iron compounds cannot be denied. The German physiologist Abderhalden has shown, furthermore, that the controversy as it was waged has to a large extent been futile; for, according to his experimental studies of gastro-intestinal physiology, the iron combined in many organic compounds of the element becomes ionized to some extent, at least, in the alimentary tract in the course of the digestive processes. In other words, it matters little what the type of the ingested iron compound is; in any event, iron is liberated from it in inorganic form through alimentary reactions.<sup>1</sup>

The normal human body contains 3 gm. (45 grains) or less of iron, the greater part being present in the hemoglobin of the red blood corpuscles, although there is presumably some iron present in every cell of the organism. From a quantitative standpoint the daily need of iron must be small at most. It would be difficult to recommend a diet entirely devoid of iron, whereas the daily losses from the body representing the usual "wear and tear" quota scarcely exceed 10 or 15 mg. (from  $\frac{1}{6}$  to  $\frac{1}{4}$  grain). The recommended medicinal doses are almost invariably large in comparison with such figures, and lead to the query whether they do not really assume a therapeutic rôle as indirect stimulants to some sort of hematopoietic activity rather than as units in the reconstruction of ferruginous tissue and blood components. Is medicinal iron a drug or a food?

Last year, Whipple and his associates<sup>2</sup> at the University of California Medical School furnished a surprise by reporting experiments, on animals, showing that iron given as Bland's pills (pills of ferrous carbonate, U. S. P.) had no influence on the rate of blood regeneration in secondary anemia. They had previously shown the profound influence that is properly attributable, on the other hand, to dietary factors. The California investigators note that the feeding of blood has at times been used in the treatment of secondary anemia. They are able to find some experimental evidence to support this treatment, but whole red cells or hemoglobin given by mouth in the form of a dry powder do not appear to influence profoundly the blood regeneration curve. Their experiments show that hemoglobin does have a distinct influence on blood regeneration, but not sufficient to warrant its use in uncomplicated secondary anemia in view of the favorable reactions due to meat and other diet factors. At any rate, Whipple is unwilling to assume without positive proof that inorganic iron is of value in the treatment of secondary anemia.

These important conclusions have not long remained unsupported. Musser<sup>3</sup> of the University of Pennsylvania has tested them in connection with a type of anemia representing more closely what is seen in clinical medicine than does the condition occurring after the single large or massive hemorrhages induced by Whipple. Musser observed animals which had repeatedly been deprived of small amounts of blood over various intervals of time, and which had thus been rendered anemic. The anemia that these animals showed represented truly the type of anemia which occurs after recurring loss of small amounts of blood and which the physician is called on most frequently to treat. Iron was given in the form of equal parts of

1. Abderhalden, E.: *Ztschr. f. Biol.* **39**: 113, 1899.

2. Hooper, C. W.; Robscheit, F. S., and Whipple, G. H.: Blood Regeneration Following Simple Anemia, V, The Influence of Bland's Pills and Hemoglobin, *Am. J. Physiol.* **53**: 263 (Sept.) 1920.

3. Musser, J. H.: The Influence of Inorganic Iron on the Regeneration of Blood After Hemorrhagic Anemia, *Arch. Int. Med.* **28**: 633 (Nov.) 1921.



ferrous sulphate and sodium bicarbonate, in quantities equivalent to 2 gm. (30 grains) of iron a day for man. The administration of this dose of inorganic iron failed to produce any constant alteration in the course of the experimental hemorrhagic anemias. The various collected facts raise the question, already discussed by Abderhalden,<sup>4</sup> whether iron supply is, after all, the foremost factor in blood regeneration. Hemoglobin is a complex molecule into which many chemical groups are built up. All of our more recent evidence regarding the indispensability of some of these organic "building stones" points to the probability that the ready availability of these, quite as much as that of iron per se, must be of paramount importance in red blood cell construction. Abderhalden has truly pointed out that the study of the pathology of the blood and especially of hemoglobin formation has suffered from the unwarranted confusion of its problems with the iron question. We shall do well to rectify our point of view in future considerations of the factors concerned in the regeneration of the blood.

#### THE CHOICE OF METHODS OF BLOOD TRANSFUSION

In the early days of its modern clinical application, blood transfusion was an exceedingly difficult procedure involving an artery-to-vein operation with refined surgical technic. Gradually the mode of introducing blood from donor to recipient has been simplified until at present the transfer can be carried out with far greater ease. Syringe and cannula methods have come into vogue and made transfusion easier, and hence available for many physicians instead of a few specialists. Of late the device of adding citrate to render blood incoagulable and keep it in this state for hours, so that it can be injected into patients at will, has been given favorable consideration in many quarters. The relatively simple procedure of citrate transfusion has been widely employed since the World War, and is today perhaps the method of election for most practitioners in most cases.

Those who are experienced in the work of blood transfusion realize that it is by no means an uncomplicated therapeutic measure. Objectionable reactions are experienced by many patients subjected to transfusion, and sometimes the results are so grave that the best of operators are seriously disturbed by the outlook. A few months ago, Bernheim<sup>5</sup> announced that, as a rule, in from 20 to 40 per cent. of all citrate transfusions a reaction of greater or lesser severity will occur despite the various precautions that study of the technic has made imperative. On the other hand, after the more refined whole blood transfusions the percentage of reactions is scarcely as high as 5.

These are facts which cannot be ignored, despite the operative difficulties presented in many cases by the demand for transfusion of unmodified blood. Unger<sup>6</sup> has recently substantiated the difference between the two methods of transfusion referred to with respect to the frequency of chills, febrile reactions and evidences of shock. His investigations at the College of Physicians and Surgeons, New York, indicate that the unfavorable action of the anticoagulant sodium citrate is exerted directly on the cellular elements of the blood. As early as 1919, Drinker and Brittingham<sup>7</sup> of the Peter Bent Brigham Hospital, Boston, came to the conclusion that citration seems to harm red cells, and possible direct evidence for this exists in the occasional promotion of fragility by the citrate. The indication is that hemolysis contributes a certain number of reactions, although it is too slight to be detected by direct methods. A further cause of the objectionable reactions following transfusion of citrated blood has been sought in changes demonstrably occurring in the blood platelets after citration.

Unger<sup>6</sup> has further contended that citrate not only affects the red blood cells so as to render them more fragile, but also alters some of the immunologic properties of the blood. Thus it decreases the available quantity of complement, a vital factor in the defense of the organism against pathogenic micro-organisms, in two ways: by its direct action on complement itself and by introducing into plasma an anticomplementary substance which inactivates complement. This substance is derived directly from the bodies of red blood cells. According to Unger, further, sodium citrate also reduces almost to nil the function of opsonins, and practically destroys the phagocytic power of white blood cells.

Obviously these newer facts present the shortcomings of transfusion with citrated blood in a light that further discloses unsuspected advantages in the use of unmodified blood from the biologic standpoint. The time has perhaps arrived when it is desirable to consider not only gross incompatibilities between the bloods of donors and recipients, as is now done in a routine way to avoid posttransfusion agglutination or hemolysis,<sup>8</sup> but also the finer qualitative differences. Unger<sup>6</sup> maintains that since complement and the phagocytic power are of prime importance in the protective action against pathogenic organisms, unmodified blood from a donor with high phagocytic index should be employed when attempting to combat local or general infections by means of transfusion.

The use of citrated blood has been attended with too many beneficent results, particularly in emergency situations, to be summarily discarded for a procedure

4. Abderhalden, E.: *Lehrbuch der physiologischen Chemie*, Ed. 3, Berlin 2: 771, 1915.

5. Bernheim, B. M.: Whole Blood Transfusion and Citrated Blood Transfusion, *J. A. M. A.* 77: 275 (July 23) 1921.

6. Unger, L. J.: The Deleterious Effect of Sodium Citrate Employed in Blood Transfusion, *J. A. M. A.* 77: 2107 (Dec. 31) 1921.

7. Drinker, C. K., and Brittingham, H. H.: The Cause of the Reactions Following Transfusion of Citrated Blood, *Arch. Int. Med.* 23: 133 (Feb.) 1919.

8. Unger, L. J.: Precautions Necessary in the Selection of a Donor for Blood Transfusion, *J. A. M. A.* 76: 9 (Jan. 1) 1921.



admittedly calling for professional skill not attained by most practitioners. It is generally known that the giving of whole blood requires constant practice and knowledge of surgical technic;<sup>5</sup> hence this method of transfusion doubtless must remain in the hands of surgeons. The problem of the physician therefore consists in the ability to determine when the more difficult procedure is imperative. For diseases, Unger concludes, in which the transfer of blood is indicated for itself, that is, when it is required as a tissue—as in various anemias, blood diseases and infections—there can be no question as to the superiority of whole unmodified blood. In cases of hemorrhage, on the other hand, when the purpose is not so much to replace pathologic with normal blood as it is to replenish the impoverished circulation or to bring about cessation of hemorrhage, citrated blood may serve as a substitute. Here, as so often in practical medicine, the judgment of the physician must determine what course is most conducive to human welfare.

#### THE VALUE OF GASTRIC ANALYSIS

Gastric analysis by chemical methods, in comparison with many other diagnostic procedures at present in vogue, has had a long history of application in clinical medicine. Latterly, however, some of the once highly valued routine examinations of gastric contents have been subjected to criticism, and there has been a tendency among many physicians to abandon the long familiar technic. The older quantitative determination of the variation in gastric acidity has been replaced in many laboratories by the so-called "fractional method of gastric analysis"; while the roentgen-ray examination of stomach functions has also superseded some of the older methods. Hence, today one may read the most diverse comments on the subject. A recent writer,<sup>1</sup> for example, remarks that, until the advent of the fractional determination of gastric secretion, the results of gastric chemistry had been so unsatisfactory that the diagnosis of gastric cases had been left almost entirely to the roentgenologists, although in the very nature of the case their aid, while valuable, is of necessity limited, and mostly indirect. Other experts<sup>2</sup> in this field have stated that some of the current criticism of the value of gastric analysis is out of all proportion to the knowledge that many of the critics can possibly possess. Rehfuß and Hawk<sup>2</sup> assert, indeed, that we have only begun to realize the possibilities of gastric analysis.

The object of the usual tests is to secure evidence regarding "the sum total of the secretory and motor work of the stomach on the particular substance that has been introduced as a test." If one accepts this definition of gastric analysis, it becomes important to

ascertain to what extent any proposed procedure measures up to the expectations. Several recent writers have asserted that the fractional method of gastric analysis, praised by one<sup>1</sup> as representing one of the great advances in clinical medicine, is based on the assumption that the gastric content is of a homogeneous nature. It has also been inferred by the workers with the new method, if it is not actually implied by its sponsors, that the determination of the acidity of gastric samples removed at stated intervals directly indicates the degree of acid formation by the stomach; furthermore, that the composition of the portions aspirated represents the acid concentration of the gastric contents as a whole at the time of withdrawal.

Two recent investigators have almost simultaneously reached the conclusion that the preceding inferences are unjustified. Gorham<sup>3</sup> has furnished experimental evidence from man to show that the gastric chyme is not, in the majority of instances, a homogeneous mixture after a test meal, and that the acidity of different portions may vary widely. In the so-called "fractional" or other methods of gastric analyses in which only a small sample is withdrawn, the portion removed may or may not be representative of the gastric contents remaining in the stomach. Likewise, Wheelon<sup>4</sup> has demonstrated that a specimen of the gastric content, at any time following the taking of a meal, of necessity will not be representative of the remaining content. A given sample of the gastric contents, he adds, can be of value only when it is definitely known from which portion of the stomach it was removed. Wheelon insists that in the withdrawal of gastric contents for the purpose of determining the acid concentration, the type of the meal, the position of the tube tip, and duodenal regurgitation are factors which militate against the acceptance of "fractional curves" as indicative of the secretory functions of the stomach. The variations in the curves of men studied by the "fractional method" may, in part, be the result of these physiologic factors. The physiologists have long appreciated the demonstrable fact that the stomach has a very limited "mixing power"; it remains for the clinician to profit by the evidence in the performance of gastric tests and the interpretation of gastric data.

3. Gorham, F. D.: Variations of Acid Concentration in Different Portions of the Gastric Chyme, and Its Relation to Clinical Methods of Gastric Analysis, *Arch. Int. Med.* **27**: 434 (April) 1921.

4. Wheelon, Homer: Relation of the Gastric Content to the Secretory and Motor Functions of the Stomach, *Arch. Int. Med.* **28**: 613 (Nov.) 1921.

**Woman in Industry.**—For light work women are just as good as men, and where the light work is of the nature of "repetition" and, therefore, monotonous, women not only do the work better than men, but they are less harmfully impressed by the monotony of it. To send women into the heavy industries in which considerable strength is required is unwise: on the other hand, light and "repeat" work is quite a woman's sphere of activity, and as production is becoming more and more uniform in regard to the type of output, there will be in several of the industries a greater call for repeat work, and therefore a greater demand for female labor.—T. Oliver, *J. State M.* **29**: 323 (Nov.) 1921.

1. Emerson, C. P.: *Clinical Diagnosis*, Philadelphia, J. B. Lippincott Company, 1921, p. 354.

2. Rehfuß, M. E., and Hawk, P. B.: *Gastric Analysis, I, Fundamental Principles*, *J. A. M. A.* **76**: 371 (Feb. 5) 1921.



## Current Comment

### PARALYSIS DUE TO POLISHED RICE DISEASE IN FOWLS

The mode of action of vitamins is the least known of the many unknown factors concerning them. The theories that they have some influence on carbohydrate metabolism (Funk) and that they are necessary components of the protoplasm (Vedder<sup>1</sup>) are among the chief views thus far proposed. Yet Funk's view is contested, and Vedder's belief does not explain the rapidity of recovery in fowls after the injection of rice bran extract. It was not until 1919 that definite progress was made, when three Japanese authors, Kato, Shizume and Maki, compared the changes in the nerves and muscles of fowls paralyzed by a polished rice diet with those of healthy and of starved animals. The main difference was the decreased propagation velocity of nervous impulses in beriberi. Besides, there were some other changes also closely corresponding to the intoxication of nerves by acids. Recently these investigators<sup>2</sup> have found that rice bran extract, though itself giving an acid reaction, quickly restores the function of the nerves paralyzed by hydrochloric acid, but has no effect on paralysis due to narcotic poisons. It lessens the hydrogen ion concentration and the surface tension of solutions. The hydrogen ion concentrations of the nerves of paralyzed fowls were much greater than the nerves of fowls which were simply starved. There were no greater changes of this kind in blood, but the nerves showed a greater power to absorb hydrogen ions, and a smaller absorption of hydroxyl ions, than the controls. The observation seems to explain the rapid recovery of fowls. Moreover, the question arises with regard to Dr. Martin Fischer's edema theory whether the wet form of beriberi, which is at least kindred to the so-called polyneuritic form, is not due to a similar process.

### SULPHATES IN THE BLOOD

One of the outstanding tendencies in present-day clinical chemistry is the extension of analytic procedures that may be useful in diagnosis to fluids and organs that formerly were considered beyond the possibility of profitable chemical investigation for such purposes. Thus, the composition of the urine no longer is exclusively preeminent as an index of the condition of health of man. The cerebrospinal fluid, the respiratory gases, the alimentary secretions, and above all the blood have begun to receive a share of the clinician's attention. The advent of easily conducted estimations of the content of sugar, urea, uric acid, creatinin and other components of the blood has made possible more discriminating diagnoses of the functional capacity of the kidneys and other organs, as well as permitting the therapist to gain a more direct insight into the efficacy of his efforts at treatment. The rise in the blood sugar values incident to a "potential" diabetic

condition may manifest itself long before any indication of disorder appears in the composition of the urine or the general well being of the patient. Derangement of the kidney as an organ of elimination may become manifested by the accumulation of metabolites in the blood in ways that lead to unfavorable prognosis even when the urinary analyses are less foreboding. Although sulphates are an ever present constituent of the urine, their occurrence in the tissues in which they originate, and their transport by the circulation and in the fluids of the organism, have received little consideration from investigators. They are rarely ingested preformed to any extent, but represent the end-products of the oxidation of the sulphur-containing proteins. Where does the final stage of this metabolic change occur? Evidently not in the kidneys, for Denis<sup>1</sup> of New Orleans has demonstrated the regular occurrence of inorganic sulphates in the circulating medium of the body. The quantities are small, amounting to only 1 mg. or less per hundred cubic centimeters of blood. Evidently the kidneys can become more or less impervious to sulphates as they do to other substances which normally find their way out of the organism in the urine. According to Denis, in nephritics with nitrogen retention there is also found a retention of inorganic sulphate, figures as high as 16 mg. per hundred cubic centimeters of blood having been obtained. The problem of ascertaining the functional capacity of the kidneys is thus becoming one of a choice of chemical procedures for ascertaining the undue accumulation of waste products in the blood.

### TESTIS AND OVARY IN DEMENTIA PRAECOX

Having in mind the association of dementia praecox with disturbances in the functions of the sex organs, Sir Frederick Mott<sup>2</sup> recently made an extensive study of the lesions in the testis and the ovary in patients with mental disorders. In dementia praecox, he finds that the testis undergoes regressive changes which, according to the duration of the disease, vary from slight morphologic changes in the cells of the seminiferous tubules and spermatozoa to complete atrophy of the tubules and absence of spermatozoa. In contrast, the testis of patients with advanced general paresis, as representing an acquired form of mental disease, show only atrophic changes of a focal nature alongside of which active spermatogenesis may be demonstrated. Even in old men, the testes show more active spermatogenesis than in some of the early adolescent cases of dementia praecox. Studies of the ovary gave similar results, but less clean cut, because of the prevalence of chronic infection in this organ, which, in itself, hinders follicle maturation. Of course, it is not to be concluded that dementia praecox is caused by changes in the testes or ovaries; but the close association of the disease with changes in these organs suggests a relationship which, to be better understood, will require much further investigation.

1. Vedder, E. B.: The Relation of Diet to Beriberi, J. A. M. A. **67**: 1494 (Nov. 18) 1916.

2. Kato, G.; Shizume, S., and Maki, R.: On the Nature of Paralysis Due to Polished Rice Disease in Domestic Fowls, Kitasato Arch. Exper. Med. **4**: 207 (Sept.) 1921.

1. Denis, W.: Sulphates in Blood, J. Biol. Chem. **49**: 311 (Dec.) 1921.

2. Mott, Frederick: The Psychopathology of Puberty and Adolescence, J. Ment. Sc. **97**: 279 (July) 1921.



## Association News

### REPORT OF COMMITTEE OF BOARD OF TRUSTEES AND JUDICIAL COUNCIL ON CIRCULAR ISSUED BY "MEDICAL ADVISORY COMMITTEE"

[At its meeting held at the Association headquarters, February 2, the Judicial Council considered, among other matters, a printed letter recently circulated widely by a "Medical Advisory Committee." This letter was specifically addressed to the secretaries of component societies of the American Medical Association; with it were a preamble and resolutions which these societies were asked to adopt. The Council deemed it advisable to discuss the matter with the Board of Trustees, since that body also was in session. The Council presented the matter to the Board, pointing out that even though the matter emanated from a committee whose origin and membership had not been revealed, the communication had been considered by a few component societies as semi-official in character and acted on as such, and recommended that an official statement be published. After due consideration a committee, consisting of the chairman and secretary of the Board of Trustees and of the Judicial Council, respectively, was appointed to formulate a brief statement for publication in THE JOURNAL. The statement follows.—ED.]

#### Statement of the Committee

Recently there has been circulated an open letter signed by a "Medical Advisory Committee" and addressed to the component county societies of the American Medical Association. This letter with its accompanying preamble and resolutions was published in THE JOURNAL, Jan. 21, 1922, page 198, together with correspondence relating to the subject. The circular presents six postulates:

The public and the profession are being sold out to:

1. Foundation control of "full-time" medical education.
2. Lay board domination and the "closed shop" hospital.
3. Socialized state medicine, subsidized community health centers and hospitals under political or university control.
4. Legislative dictation of therapy and fees.
5. Demoralization of medical standards by the expansion of cults.
6. Exploitation of the specialties by lay technicians.

These postulates call attention to certain conditions, existing and anticipated, some of which are detrimental to the public welfare and a menace to the practice of medicine, and it is charged at the same time that the existence of these conditions is due to "so-called leaders" in the Association. A method for correcting the evil is suggested, namely: The instruction of the representatives to the House of Delegates of the American Medical Association to support three specifically named propositions:

- A. A change of policy and leadership in the A. M. A. pledged to the immediate abolition of the evils mentioned, and constructive protection of medical interests.
- B. The repeal of multiple representation and plural voting privilege by section delegates.
- C. The election of Trustees for a period of two years; five Trustees to be elected one year, and four the next, to prevent the Trustees from perpetuating oligarchical rule.

Had this "Medical Advisory Committee" called attention to the conditions without exaggeration and made constructive suggestions for combating them, it would have deserved praise. But harm, not good, lies in the manner in which the subject is presented and in the unwarranted accusations made in the body of the letter against the Board of Trustees and the officers of the Association. The tendency of this communication is to breed discontent, suspicion and disloyalty at a time when there is great need of calm, deliberate consideration of how best to check certain dangerous tendencies affecting the practice of medicine and to remedy serious conditions that already exist.

The charge that the House of Delegates, the Board of Trustees or that the leaders of the Association have promoted or in any way fostered the conditions named is submitted without evidence and is without foundation.

The officers, the Trustees of the Association, the various Councils and a majority in the House of Delegates are aware of the conditions referred to in the postulates. Some of these conditions primarily require correction by local and state medical organizations, the national association cooperating.

Inferentially at least, the Board of Trustees is the body that is held blamable for the alleged sins of omission and commission, since one of the remedies proposed is shortening the term of office of the members of the Board, disregarding the fact that consideration of the problems presented by the six postulates falls primarily within the jurisdiction of the House of Delegates, not of the Board of Trustees, and that it is the function of the various councils and committees, having jurisdiction, to carry out the specific policies formulated by the House. These councils and committees are directly responsible to the House of Delegates, not to the Board of Trustees.

The question of the election of delegates by the Sections is one which must be decided by the House of Delegates itself. Such representation has been in existence since the reorganization of the Association, and it is presumed that good reasons existed for providing it. The charge that these delegates have acted as an organized bloc against the best interests of the profession demands incontrovertible proof.

The communication, both in language and in spirit, is destructive in character. What is needed are well-thought-out suggestions as to the best method of combating the evils that threaten public and professional welfare and which will tend to build up and not to destroy. The undersigned committee recommends to the members of component county societies that they give careful study to the whole proposition before adopting any resolutions or making any recommendations to the House of Delegates of their state associations. It is earnestly recommended that the House of Delegates of each state association select as representatives to the House of Delegates of the American Medical Association men who have given thoughtful consideration to these subjects and who have primarily at heart the best interests of the public and of the medical profession. It is believed that the efforts of organized medicine will be successful in the correction of evils which threaten the economic status of the medical profession and the welfare of the public in proportion to the general ethical standards which the members of the profession follow in their own professional and social relationships.

W. T. SARLES, Chairman, Board of Trustees.  
FRANK BILLINGS, Secretary, Board of Trustees.  
M. L. HARRIS, Chairman, Judicial Council.  
A. R. CRAIG, Secretary, Judicial Council.

#### MEETING OF BOARD OF TRUSTEES

The annual meeting of the Board of Trustees was held at the Association headquarters, February 3. A preliminary conference for general discussion of affairs was held the day preceding. All members of the Board were present; also the President-Elect, Dr. George E. de Schweinitz. President Hubert Work, because of the fatal accident to the Second Assistant Postmaster General, was prevented from leaving Washington, D. C., at the time; likewise, the Speaker of the House, Dr. F. C. Warnshuis, was unable to be present.

#### FIELD SECRETARY

Announcement was made that Dr. Olin West had been offered and had accepted the position of Field Secretary. Dr. West is secretary of the Tennessee State Medical Association, and executive secretary of the Tennessee State Board of Health. It was understood that Dr. West would be able to so adjust his affairs in Tennessee that he could report for duty on February 15. Later, however, it was found that he could not conscientiously give up his responsibilities to his state association and to the state board of health before the middle of April, when he will report for permanent duty in Chicago.



## NEW BUILDING

The Board officially confirmed and approved the purchase of the lot, 40 by 100 feet, adjoining the present building on the east. The purchase of this additional ground solves the problem of securing sufficient pressroom facilities in an economical manner. As the plans and specifications for the building which was to have been erected a year ago must necessarily be modified, the architect appeared before the Board to discuss the whole subject. It was unanimously agreed that the present building scheme should provide, if not for all time, at least for a reasonable number of years, accordingly, the architect's general plans were adopted. These provide for the erection of the addition on the east; for the transfer to that addition of printing and other equipment in daily use, from the old building; for tearing down the old building on the north, and for the erection of an addition there, thus completing the structure. This will give a building 100 by 160 feet, six stories high, and a high basement, of steel and concrete construction, therefore fireproof, and with sufficient strength to carry additional stories. This plan, when carried out will enable the association to extend its activities unembarrassed through lack of room, and to meet the requirements of the future, including the publication of the proposed popular health magazine.

## APPROPRIATIONS

The budgets for the several councils and committees of the Association for 1922 were presented to the Board and referred to the Finance Committee. After due consideration the budgets were approved. The regular appropriation was made for the Committee on Scientific Research and for the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry; also a special appropriation was made for the purpose of continuing the investigation on local anesthetics.

## ELECTIONS

The following editors were elected as members of the editorial boards of the several special journals:

Dr. W. T. Longcope, New York City, *Archives of Internal Medicine*.

Dr. William McKim Marriot, St. Louis, *American Journal of Diseases of Children*.

Dr. Hugh T. Patrick, Chicago, *Archives of Neurology and Psychiatry*.

Dr. M. B. Hartzell, Philadelphia, *Archives of Dermatology and Syphilology*.

Dr. Evarts Graham, St. Louis, *Archives of Surgery*.

*Council on Pharmacy and Chemistry*.—Drs. Reid Hunt, Boston, W. W. Palmer, New York City, and Prof. Julius Steiglitz, Chicago, were reelected members of the Council on Pharmacy and Chemistry. Dr. George W. Hoover, Bureau of Chemistry, Department of Agriculture, Chicago, was elected to fill the vacancy created by the resignation of Dr. C. L. Alsberg.

*Secretaries of Councils on Medical Education and Hospitals and on Health and Public Instruction*.—Upon nomination of the several councils, Drs. N. P. Colwell and Frederick R. Green were reelected, respectively, Secretary of the Council on Medical Education and Hospitals and Secretary of the Council on Health and Public Instruction.

## HARRISON NARCOTIC LAW

In accordance with the action of the Board taken at the November meeting, President Hubert Work and Dr. C. W. Richardson of the Board reported that they had personally interviewed Mr. D. H. Blair, Commissioner of the Bureau of Internal Revenue, and through him had obtained an opinion of the legal division of the bureau in regard to the administration of the Harrison Act as it related to physicians.

The opinion includes this statement: "In accordance with the Internal Revenue law, a physician who maintains an office 'down town' and another office in his home, at both of which places he has narcotic drugs, incurs liability to special taxes under the Harrison act at both locations." The opinion was based on Article 23, of Regulation 35 of the narcotic law, to the effect "that one engaged in the same occupation at two or more places must pay a separate tax

with respect to each place." The question involved is one of law and not of choice by the bureau. It would appear in the opinion of the Board that if a physician who maintains more than one office would keep his entire supply of narcotic drugs at one place, he would be subjected to the payment of but one license fee.

## ALCOHOL REFERENDUM

This Executive Committee was requested to formulate a statement, to incorporate in the report of the Board to the House of Delegates, which shall include the reasons for taking the referendum, a summary of the findings, and suggestions for a modification of the Volstead Act and the regulations for its enforcement which will permit physicians who desire to prescribe whisky or other distilled spirits for the treatment of patients to have available whisky for prescribing that is pure and that can be bought at a price fixed by the government.

## GORGAS MEMORIAL

The Secretary announced that, in accordance with the action taken at the November meeting of the Board, President Hubert Work had appointed Dr. George E. de Schweinitz of Philadelphia, Dr. Charles W. Richardson of Washington and Dr. Fred B. Lund of Boston as a committee of the Association to act in an advisory capacity to the Gorgas Memorial Institute of Tropical and Preventive Medicine at Panama. Dr. de Schweinitz reported an interview with Dr. Braisted, president of the Gorgas Memorial Institute of Tropical and Preventive Medicine at Panama, in which Dr. Braisted requested that THE JOURNAL be utilized to rouse the interest of the profession in behalf of the project. The Board of Trustees suggested: (1) that the American Medical Association committee formulate a policy of cooperation on the part of the component county and constituent state associations; (2) that this cooperation could best be secured by asking the various state associations to appoint committees to cooperate with the national committee; (3) that the Association's committee formulate an appeal to the members of the Association to subscribe to the Memorial Fund; (4) that such appeal appear in THE JOURNAL and be offered to the various state official publications, and (5) that the names of the donors be published in THE JOURNAL from time to time.

## INTERNATIONAL CONGRESS OF HYGIENE AND EPIDEMIOLOGY

Dr. de Schweinitz reported that Dr. Haven Emerson had called his attention to the International Congress of Hygiene and Epidemiology at Strasbourg, France, in the spring of 1923, and had requested the cooperation of the American Medical Association in encouraging volunteers to represent this country at the congress.

## DIAGNOSTIC CLINIC AND GROUP PRACTICE

The Secretary reported that the Executive Committee and the General Manager had been actively attempting to secure competent physicians to make a survey of pay clinics and group practice, which was ordered by the Board at the November, 1921, meeting, but thus far had not been successful; however, that some progress had been made. The committee was asked to continue its efforts and report at a meeting of the Board in May.

## AMERICAN RED CROSS

The Secretary of the Board reported that in December he had a conference with the vice chairman of the American Red Cross in Washington regarding the past, present and future policies of the American Red Cross and its activities in public health matters. He stated that he had received and studied a copy of the charter of the American Red Cross, and a document dated Jan. 3, 1922, detailing the policies and present public health activities in Red Cross service.

The Secretary submitted a copy of his letter of Jan. 23, 1922, to the vice chairman of the American Red Cross, in which he gave his opinion of the duties and obligations of the American Red Cross to the public. This letter included an acknowledgment of the splendid service rendered by the American Red Cross during the Great War at home and abroad, and since the armistice for the disabled ex-service men under treatment in hospitals, as well as relief work for



the dependents of the ex-service men. The letter also commended the work of the American Red Cross in the training of public health nurses for a period after the armistice. The opinion was expressed that the American Red Cross might continue to expend its financial means for the relief of ex-service men and also in behalf of their dependents at home. The statement was made, however, that the time had come when the American Red Cross should restrict its service to the duties as designated under its charter, namely, to afford emergency relief in disasters due to flood, to fire, to storms, to accidents and to overwhelming disasters due to epidemics. The Board unanimously endorsed the opinions expressed in the letter concerning the activities of the American Red Cross.

#### POPULAR HEALTH MAGAZINE

Letters were submitted from members of the Council on Health and Public Instruction in reply to inquiry from the Board of Trustees regarding the character of the proposed popular health magazine. In a general way these letters agreed regarding certain principles and policies. In view of the fact that by the erection of the new building ample press room facilities will be available, it is believed that the Association may begin the publication of such a magazine early in 1923. The Board decided to make wide inquiries and surveys for the purpose of enlisting adequate information in regard to what should be the character of such a periodical, how it should be distributed, the price, and whether it should be launched in the form of a bulletin—that is, with the idea of its evolution into a magazine—or as a full-fledged magazine. It was decided to give further consideration to the subject at a conference in St. Louis immediately preceding the annual session, to which the Council on Health and Public Institution will be invited.

#### LECTURE BUREAU

The Board directed the establishment of a lecture bureau under the direction of the Field Secretary, the purpose being to have available names of speakers from among the Fellows and Members of the Association, including the officers and members of the Board of Trustees, who will agree to respond to invitations made through the bureau to speak before constituent state associations, component county societies, councilor and district societies, and in some instances to lay organizations.

#### ANNUAL DUES

The question of the annual dues was given consideration, and a motion was made and adopted that the Board of Trustees recommend to the House of Delegates that it adopt an amendment to the By-Laws which will permit the Board of Trustees to reduce the annual dues to a minimum of \$5 per annum or, in financial emergency, to raise the dues to a maximum of \$6.

#### SUGGESTED PLAN FOR COOPERATION IN FEDERAL LEGISLATION

Dr. Brown, who is a member of the Legislative Committee of the Connecticut State Medical Society, stated that in this capacity he had written to the member of Congress from his district suggesting that the members of the federal Congress will be able to secure competent advice from the members of the medical profession who are their constituents should they write to and inform them of impending legislation which bears upon the public health and the treatment of disease, and that the member of Congress had responded cordially and with approval of the suggestion. On motion, the method of establishing relationship between a legislative committee of a state association and the members of Congress, as outlined, is commended as practical and likely to be effective, and the Council on Health and Public Instruction is urged to emphasize it in its cooperation with the legislative committees of state associations.

#### AMERICAN MEDICAL ASSOCIATION BULLETIN A MONTHLY

The Board again took up the question of the best means of securing more practical cooperation between the officers of component county societies and the officers of state associations, and also between the latter and the officers of the American Medical Association. With this object in view, the

Board ordered that the *American Medical Association Bulletin*—originally started as the *Councilor's Bulletin*, but in more recent years utilized to distribute full reports of Council activities, conferences and similar matters—be issued as often as once a month for nine months in the year; that it shall be under the editorship of the Secretary of the Association; that it shall be devoted to a full and free interchange of opinions, not only of the officers of the organization and its branches, but also of the members of the organization; that it shall be the medium of discussion of economic, social and ethical questions pertaining to the practice of medicine. The main function of the *Bulletin*, however, is not to be neglected, viz.: the development of better and more effective organization.

#### ROUTINE BUSINESS

Routine business relating to medical education and hospitals, pharmacy and chemistry, health and public instruction including legislation were referred for action to the respective Councils having jurisdiction; and a question concerning the character of advertisements in *THE JOURNAL* was referred with suggestions to the Committee on Advertising.

The Board adjourned to meet in St. Louis.

FRANK BILLINGS, Secretary.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Public Health Institute.**—A public health institute in conjunction with the social hygiene conference was held, January 17-21, at Birmingham. Dr. Henry H. Hazen delivered an address on "Syphilis," and Dr. Rachael S. Yarros read a paper on "The Delinquent." Dr. Edith Rabe, U. S. Public Health Service, opened the meeting for women, January 17, with an address on "Effects of Venereal Diseases on the Individual and the Community." Other speakers present at the conference were: Dr. Henry M. Edmonds, Dr. Mazyck P. Ravenel, Dr. A. T. McCormack, Dr. Frank E. Leslie, Dr. Watson S. Rankin and Dr. Stewart H. Welch, state health officer.

### CALIFORNIA

**Practiced Without a License.**—It is reported that John J. Withbeck, chiropractor of Willows, was convicted, December 22, of practicing medicine without a license.

**Hospital News.**—The Elizabeth Bard Memorial Hospital, Ventura, and its \$10,000 endowment fund has been presented to the Big Sisters' League of Ventura County, with permission to change the name of the institution if desired. Dr. Raymond T. Francis, Oxnard, is the attending physician.

### CONNECTICUT

**Towns Without Physicians.**—It is reported by the state commissioner that there are forty-six corporate towns in Connecticut without the services of a practicing physician.

**Physician Robbed of Securities.**—Dr. Ely Morgan, Hartford, was robbed of bonds and cash aggregating \$77,300 by two bandits who attacked him in his office, February 2. The men escaped in an automobile which bore a Massachusetts license number.

### DISTRICT OF COLUMBIA

**Bulletins on Health Legislation.**—The first biweekly bulletin on state health legislation issued by the U. S. Public Health Service and the National Health Council was issued, February 1. These bulletins represent the first systematic attempt in the history of public health to issue, in collected form, impartial abstracts of current state health legislation. They are published in Washington under the direct supervision of Asst. Surg.-Gen. C. C. Pierce of the U. S. Public



Health Service. At present, ten state legislatures are meeting and two more will meet later in the year. The subjects covered in these biweekly bulletins include: general public health, general sanitation (milk, food and drugs, water supply, sewage disposal, and housing), control of disease, tuberculosis, social hygiene, mental hygiene, medical practice, nursing, sickness insurance, and other health matters. The Public Health Service and the National Health Council also have the assistance of representatives of other federal departments and various voluntary associations in the states. The state health officers are the primary sources of information, and material is also received from the Association of Life Insurance Presidents. The number of copies issued is restricted to 200. The National Health Council is likewise issuing biweekly statements on national health legislation, twenty such bulletins having been published to date.

#### HAWAII

**Leper Colony Decreases.**—The leper settlement on the Island of Molokai contains fewer patients than at any time in the last fifty years, according to a report by J. D. McVeigh, superintendent of the colony. Virtually all of the 485 patients of the colony now are taking the Dean chaulmoogra oil treatment, and Mr. McVeigh states that the children of leprosy parents are mentally and physically equal to those of healthy parents, also that they have the advantage of the training given in the specially conducted homes for these children.

**Society Honors Physicians.**—At the thirtieth annual meeting of the Medical Society of Hawaii, held, November 19, under the presidency of Dr. Grover A. Batten, Honolulu, resolutions were adopted expressing appreciation of Dr. H. T. Holman "in his initiation, elaboration and scientific application of the methods which have revolutionized the treatment of leprosy," and congratulating him on the results of his work, and to Dr. A. L. Dean, "whose technical ability and knowledge of science carried forward the new method of administration of what is undoubtedly a specific for the disease."

#### ILLINOIS

**Physician Fined for Not Reporting Births.**—Dr. Hugh E. Bowerman, Leaf River, was recently fined \$5 and costs for failing to report births that occurred in his practice. The complaint against Dr. Bowerman was brought by the local state's attorney at the request of a field agent of the state department of public health.

**Conference on Milk Production.**—At a recent conference, which was jointly participated in by the state departments of public health and agriculture and by the University of Illinois, an outline for a model ordinance governing the production and sale of milk for municipalities in the state was developed. The matter was left in the hands of a committee for final drafting, and will be published as early as practical.

**Personal.**—Dr. Peter S. Winner, Elgin State Hospital, has been appointed assistant superintendent of the Peoria State Hospital, effective February 1. Dr. Anthony G. Wittman, Anna State Hospital, will succeed Dr. Winner.—Dr. H. D. Brewster, Major, M. C., U. S. Army, Fox Hills Hospital, Staten Island, N. Y., has been transferred to take charge of the medical service of Public Health Service Hospital No. 76, Maywood.

**New Clinic for Crippled Children Established.**—At the request of local organizations, a new clinic for crippled children has been established by the state department of public health at Kewanee. The clinic is conducted under the supervision of Dr. Clarence W. East and is supported through the cooperation of a committee of local physicians, the Rotary Club, the Red Cross and local health departments. This brings the total number of such clinics that are now in operation throughout the state up to twenty-five.

**Cooperation in Public Health Nursing.**—Closer cooperation, complete harmony of purpose, the best possible service to the public, and no overlapping in effort or expenditure were the objects of a conference held in Springfield, February 8, between representatives from the state department of public health, the central division of the American Red Cross, and the Illinois Tuberculosis Association. As a result of the meeting, a written agreement that was entered into by these agencies about a year ago was reaffirmed.

**Antimosquito Campaign.**—The state department of public health, in cooperation with the U. S. Public Health Service,

the International Health Board and a number of local agencies, has launched an antimosquito campaign in Carbon-dale. According to the plans the campaign, which is already under way, will constitute the most exhaustive project of the kind ever undertaken in the state. The Lions' Club has guaranteed \$2,000 toward defraying local expenses, while the medical profession is actively supporting the proposition.

**Physicians Convicted.**—It is reported that Dr. Henry L. Green, Quincy, was found guilty, January 22, for violation of the Harrison Narcotic Law.—Dr. James S. C. Cussins, Decatur, was fined \$50 and costs, January 27, for failure to keep a record of narcotics dispensed by him.—It was ruled by Judge FitzHenry, Bloomington, that Dr. Joseph E. Wharton, Jacksonville, who was charged with violation of the Harrison Narcotic Law, shall serve a sentence in the penitentiary or enter an institution and of his own volition take the drug cure. Sentence was suspended until Dr. Wharton takes the cure, or on his refusal he will be sentenced to the penitentiary.—Dr. Ranson Logan Estes, whose career at Mattoon, Neoga and Sullivan and at points in Shelby County has attracted attention for several years, was recently sentenced to serve from one to ten years in the Southern Illinois Penitentiary. Reports at various times have connected Dr. Estes with defrauding an express company, robbing a bank, and trafficking in stolen automobiles. The charge on which he was finally convicted and sentenced to prison was that of assault with intent to kill.

#### Chicago

**Personal.**—Dr. John Dill Robertson, former city health commissioner, has been elected president and director in charge of the Chicago pageant of progress to be held, July 29 to August 14, at the Municipal Pier, Chicago, to succeed Mayor Thompson, who resigned.

**Chicago Tuberculosis Institute.**—At the annual meeting of the institute, held in January, Dr. Thomas E. Roberts, Oak Park, was elected president. Dr. Roberts organized the Oak Park branch of the Chicago Chapter of the American Red Cross.

**City's Lepers to Be Removed.**—It was announced, February 11, by Dr. Herman N. Bundesen, city health commissioner, that notices have been received from Dr. I. D. Rawlins, state director of health, that Chicago's leper colony at the Cook County Hospital is to be consolidated with the government leprosarium at Carlville, La., owing to the lack of freedom necessitated by their living in one room at the Cook County Hospital.

**Alpha Omega Alpha Fraternity.**—The eighth international council of the Alpha Omega Alpha Honorary Fraternity, representing twenty-four chapters in the United States and two in Canada, will be held, March 7, at the Hotel Sherman. The annual dinners given by the chapters at the University of Illinois, the University of Chicago and the Northwestern University will be given before the meeting for the transaction of business.

#### INDIANA

**Physician is Acquitted.**—Dr. Roy B. Storms, Indianapolis, who was arrested on a charge of assault and battery recently, was discharged, February 2, by the city court judge.

**Hospital News.**—Contracts have been let for the addition of a new combination school building and gymnasium to the Indiana Masonic Home and an added unit to the Eastern Star Hospital, Franklin, at a cost of \$30,000. The buildings will be fire-proof and fitted with all modern improvements.

**Children's Aid Association.**—At the annual meeting of the association, held, February 13, at Indianapolis, Dr. C. C. Carstens, New York City, director of the Child Welfare League of America, was the guest of honor and principal speaker. Rabbi Morris M. Feuerlicht presided at the meeting.

**Disability Certificates of Chiropractors Invalid.**—The attorney general's office is reported to have recently handed down an opinion to the effect that chiropractors cannot give certificates of physical disability which will excuse children from attending school under the provisions of the compulsory school attendance law. The opinion states that chiropractors' certificates "are not sufficient, for they are not physicians in good standing in this state because not licensed to practice."

**County Medical Meeting.**—At a meeting of the Elkhart County Medical Association, held, February 2, at Goshen, Dr. Frank B. Wynn, Indianapolis, was the principal speaker.



Papers were read by Drs. Charles A. Parker and John H. Carpenter, Chicago; William H. Foreman, Indianapolis; Elmer L. Eggleston, Battle Creek, Mich.; Robert V. Hoffman and Stanley A. Clark, South Bend; John T. Murphy, Toledo, Ohio, and Preston M. Hickey, Detroit.

**Appointments of Health Officers.**—Dr. Mason B. Light, Indianapolis, county health commissioner, has appointed the following assistant county health officers: Dr. James Byron Young, Cumberland; Dr. Jeremiah Arthur Swails, Acton; Dr. Thomas T. Curry, Southport; Dr. William Boggs, Edgewood; Dr. Byram Spees, Glens Valley; Dr. Harding, West Newton; Dr. William Jennings, Ben Davis; Dr. William F. Summers, Bridgeport; Dr. A. O. Ruse, Clermont; Dr. George Coble, New Augusta; Dr. Charles J. Kneer, Oaklandon; Dr. C. C. McFarland, Castledon, and Dr. W. A. Hadley, Maywood. The new city board of health of Brazil held a meeting, January 27, at which Dr. Harry Elliot, was elected president; Dr. Fred C. Dilley, treasurer, and Dr. Junius L. Lambert, secretary.

#### IOWA

**Iowa Tuberculosis Association.**—The annual meeting of the association was held, February 8, at Des Moines, in conjunction with the Iowa Trudeau Society, an organization of physicians interested in tuberculosis and allied diseases. During the morning session, a section was held for public health nurses, and the schoolchildren of the city gave a health play. Dr. Robinson Bosworth, St. Paul, executive secretary of the Minnesota Advisory Commission and president of the Mississippi Valley Conference, was the principal speaker. There was a symposium on "County Organization" and "Consulting the Public About Program and Cost," participated in by health workers of the state.

#### LOUISIANA

**Personal.**—Dr. Joseph A. Estopinal, New Orleans, has been appointed member of the new board of health for St. Bernard Parish.

**Election of Officers.**—At the annual welfare meeting of the Rapides Parish Medical Society, held recently, the following officers were elected for 1922: president, Dr. Fayette C. Ewing; first vice president, Dr. James A. White; second vice president, Dr. Frank M. Lett, and secretary, Dr. S. Cicero Holloman.

**Fumigation Rules Modified.**—The Surgeon-General, Washington, has ordered modification of fumigation requirements for ships in the port of New Orleans. Ships which dock at rat-proof wharves must be fumigated only once in every six months instead of three, as heretofore, while ships that dock at the few wharves that are not rat-proofed must follow the old regulations.

**State Association Annual Session.**—The Louisiana State Medical Society will hold its annual convention, April 11-12, at Alexandria, when it will be the guest of the Rapides Parish Medical Society. Dr. Clarence Pierson is the chairman of the arrangement committee; Dr. Paul K. Rand is the chairman of the program committee, and Dr. Marvin Cappel is the chairman of the finance committee.

#### MAINE

**Maine Eye and Ear Association.**—At a meeting of the association, January 31, at Augusta, Dr. Frederick H. Verhoeff, Boston, gave a lecture on "Clinical, Historical and Experimental Observations of Phaco-Anaphylactic Endophthalmitis," illustrated with lantern slides.

**Personal.**—Dr. Clarence F. Kendall, state commissioner, has announced the appointment of Dr. John Hewatt, New York, as director of diagnostic laboratories, Augusta, to succeed Dr. Herbert E. Thompson, who recently resigned. Dr. Hewatt served with the British army during the World War.

#### MARYLAND

**Personal.**—Dr. Charles B. Thompson has been appointed psychiatrist in the Baltimore city public schools.—Dr. Benjamin Merrill Hopkinson has been added to the public school staff of the Baltimore City Health Department and will have supervision over the dental clinics in the schools.

#### MASSACHUSETTS

**Consultation Clinic.**—A free consultation clinic for the diagnosis of early pulmonary tuberculosis was held, February

8, at Boston, under the auspices of the state department of public health, and conducted by the staff of the North Reading State Sanatorium.

**Cutter Lectures on Preventive Medicine.**—Dr. Alfred F. Hess, clinical professor of pediatrics, University and Bellevue Hospital Medical College, New York City, delivered the Cutter Lecture on "Preventive Medicine," February 14 and 15, at the Medical School of Harvard University, Boston.

**Personal.**—Dr. Carl A. Schillander has been appointed associate medical examiner for Hampden County, to succeed Dr. Sylvester E. Ryan, who resigned, December 31.—Dr. David Scannell has been elected chairman of the Boston School Committee.—Dr. Francis X. Mahoney, Boston, has been appointed health commissioner of the city to succeed Dr. William C. Woodward.—Drs. Henry M. Smith and George S. Wickham, Lee, have been appointed medical examiner and associate medical examiner, respectively, of the third Berkshire district.

#### MICHIGAN

**Personal.**—Dr. Gerhardus J. Stuart has resigned as superintendent of the Christian Psychopathic Hospital, Cutlerville, Mich., his resignation to take effect in June.

**Health Education for Mothers.**—The Saginaw County Medical Society has opened two health education centers for young mothers. Physicians and nurses will instruct the mothers in feeding and nursing babies.

**Organization of Public Health Committee.**—At a meeting, January 30, at Ann Arbor, a joint committee on public health education was organized. M. L. Burton, Ph.D., president of the University of Michigan, was elected president of the committee, and Dr. Frederick C. Warnshuis, Grand Rapids, secretary. The object of the committee is to conduct a general health program for the state, with the cooperation of the Michigan State Medical Society, together with the university. The committee includes Dr. Andrew P. Biddle, president of the Detroit board of education; Dr. William J. Kay, Lapeer, president of the Michigan State Medical Society; Dr. William J. Dubois, Grand Rapids; Dr. John McLurg, Bay City, and all members of the state medical society. The university committee is composed of Dr. Hugh Cabot, dean of the Medical School, University of Michigan, Ann Arbor; Dr. Gotthelf Carl Huber; Dr. John Sundwall, and Prof. W. D. Henderson.

#### MINNESOTA

**Personal.**—Dr. Henry F. Helmholz, Dr. Russell M. Wilder, and Dr. C. Greene, Rochester, were elected members of the American Physiological Society at the recent meeting held in New Haven, Conn.—Dr. John H. Stokes of the Mayo Clinic, Rochester, recently addressed institutes in Memphis, Tenn., and Louisville, Ky., as a special consultant of the U. S. Public Health Service.—Dr. Woods Hutchinson, New York, addressed the staff of the Mayo Clinic, January 18, on the subject of "Causes of High Death Rates Reported."

#### MISSOURI

**Dogs to Be Used for Scientific Purposes.**—An ordinance has been introduced in the board of aldermen of St. Louis, providing for the sale of impounded dogs to the recognized medical schools in St. Louis to be used for scientific purposes in the teaching of medicine. A charge of 75 cents will be made for each dog delivered to the schools.

**The Hodgen Lecture.**—The second Hodgen Lecture was given, January 4, at St. Louis, by Dr. Samuel J. Mixter, Boston, on "Our Old Enemy, Cancer." These lectures were organized in 1921 under the auspices of the St. Louis Surgical Society and Medical Fund Society in honor of John Thompson Hodgen, and will be given annually as near his birthday as practicable.

**St. Louis Safety Council.**—The health committee of the St. Louis Safety Council has appointed, as an advisory committee to assist in the work of educating the people in health protection: Drs. Walter H. Fuchs, Martin C. Woodruff, Hanan W. Loeb, Nathaniel Allison, Albert H. Hamel, Edward J. Goodwin, Louis P. H. Bahrenburg, John Kennerly, J. P. Harper and E. Willette.

**Meeting of Medical Societies.**—A representation of physicians from Audrain, Boone, Callaway, Cole, Cooper, Howard and Randolph counties held a meeting, February 1, at Colum-



bia, under the auspices of the Boone County Medical Society. Among the speakers were: Dr. Charles C. Conover; Dr. William Engelback, St. Louis; Dr. Harvey S. McKay, St. Louis; Dr. Richard L. Sutton, Kansas City, and Dr. Arthur D. Ferguson, Fulton.

**Missouri Hospital Association.**—At a meeting of the superintendents of the approved hospitals in the state, February 17, at St. Louis, the Missouri Hospital Association was organized and will be affiliated with the American Hospital Association. Dr. Louis H. Burlingham, superintendent of the Barnes Hospital, St. Louis, was the chairman of the committee on organization. Dr. Andrew R. Warner, Chicago, secretary of the American Hospital Association, was the guest of the evening, and assisted in making plans for a permanent organization.

**Psychiatric Clinic for Juvenile Court.**—A psychiatric clinic to be attached to the Juvenile Court at St. Louis is being advocated by a number of St. Louis physicians and social workers. Dr. M. A. Bliss of St. Louis, president of the Missouri Society for Mental Hygiene, has announced that the National Society for Mental Hygiene will cooperate in establishing the clinic if assurance is given that it would be maintained permanently. Through the Rockefeller Foundation, Dr. Bliss said, funds would be provided for sending to St. Louis a corps consisting of a trained psychiatrist, a psychologist, and social workers to put the clinic into operation and to train persons for carrying on the work thereafter. The usefulness of these clinics has been proved in New York, Chicago, Detroit and other cities.

**Rural Sanitation.**—At a meeting of the Rockefeller Foundation, the International Health Board, the state board of health and the U. S. Public Health Service at St. Louis, January 10, preparations were made for a complete survey of the state in the interests of rural sanitation. The meeting was attended by Dr. John A. Ferrel, director of the International Health Board; Dr. S. F. Covington; Dr. Lunsdorf Fricke, Memphis, assistant surgeon of the U. S. Army; Dr. Joseph Mountain, U. S. Public Health Service; E. E. Huber, Missouri State Board of Health; Dr. Thomas Parron, state director of rural sanitation; Dr. Emmett P. North, president of the state board of health; Dr. Rudolph S. Vitt, state board of health, and Dr. Cortez S. Enloe, state commissioner of health. The state recently appropriated \$20,000 for this work, and contributions from other organizations have made \$80,000 available for the work.

#### MONTANA

**County Medical Meeting.**—At the meeting of the Big Horn County Medical Society, held, January 27, at Hardin, under the presidency of Dr. Wilson A. Russell, Dr. Lysle Haverfield gave an address on "Dysentery," and Dr. John J. Sippy, Helena, discussed the arrangements which have been made by means of the Sheppard-Towner bill, that will give the state the use of \$48,000 to be spent between now and July 1, 1923, for maternal and infant care.

#### NEBRASKA

**Personal.**—Dr. Thomas D. Thompson, West Point, was recently elected president of the Cuming County Medical Society.

**Physician Convicted of Manslaughter.**—It is reported that Dr. Leslie S. Fields, Omaha, has recently been convicted on a charge of manslaughter by criminal operation, and sentenced to serve from one to ten years in the penitentiary.

#### NEW JERSEY

**Personal.**—Dr. George B. Landers, Morristown, has resigned as superintendent of the Memorial Hospital.—Dr. Edward S. Krans, Plainfield, has been reelected secretary of the local board of health.—Dr. George Henry, Flemington, has been elected borough physician.

**Meat Inspection in Newark.**—An ordinance prohibiting the sale and exposure for sale of meat in Newark before inspection was passed by the commissioners of the city of Newark, February 10, making it unlawful for any person to sell meat in the city that does not bear meat inspection brands recognized by the department of health. The carcasses of animals slaughtered outside the city must have attached, by their natural connections, the head, tongue, lungs, liver, pleura, the peritoneum and all body lymph glands. Each carcass is to be inspected and stamped by the department of health at the point of arrival.

#### NEW YORK

**Gift to General Education Board.**—John D. Rockefeller has given an additional \$45,000,000 to the General Education Board for medical education.

**Medical Home.**—The cornerstone was laid, December 31, of the new medical building at New Rochelle, to be erected at a cost of \$130,000, and occupied exclusively by physicians. Dr. George D. Stewart, president of the New York Academy of Medicine, gave an address at the ceremony.

**Personal.**—Dr. Edward T. Delehanty, Albany, has been appointed county physician to succeed Dr. Gebhard L. Ullman, who resigned after nineteen years' service.—Dr. Dean Miltimore has been reappointed health officer for the Nyack public schools.—Dr. Herman M. Biggs, commissioner of health for the state of New York, was reelected president of the American Social Hygiene Association at the annual meeting.—Dr. Richard Derby, Oyster Bay, L. I., has been appointed manager of the Kings Park State Hospital, to succeed Dr. Henry Brown, whose term has expired.

**Plan to Free State of Tuberculous Cows.**—The state department of agriculture has instituted a project by which it hopes within the period of a few years to provide for the examination of every milch cow in the state. The system employed is known as the free area plan and involves the creation of zones, and the examination of all cattle within those zones and the extermination of all affected animals within those boundaries. These zones are gradually to be extended until the entire state is covered. Out of a total of 130,584 cows examined last year by the state agents, 19,897 were found to be tuberculous and were slaughtered. At present thirty veterinarians are examining herds in ten counties under the free area plan. Last year this work cost the state \$1,558,112.

**Physicians Organize to Fight Chiropractor Bill.**—A committee of the Medical Society of the State of New York and a committee of the Medical Society of the County of New York held a joint meeting, February 9, in order to plan organized opposition to a bill introduced into the legislature this week to license chiropractors. George W. Whiteside, counsel for the county and state organizations, states that the bill contains a "waiver" clause which would license all chiropractors now practicing, without any sort of examination. This bill, if enacted, would make every outlaw practitioner today a "Doctor of Chiropractic," and would subject future candidates for that title to an examination prepared by an organization created under the bill. This organization would be named by the board of regents from a list of names approved by the chiropractic organization here. Mr. Whiteside, in commenting on the bill, said: "The so-called chiropractors today are treating everything in violation of the law from affections of the eye, ear, nose and throat, to appendicitis and other diseases calling for surgery. The greatest danger in licensing them lies in the fact that they make no distinction between contagious and noncontagious diseases. They do not believe in the germ theory and take no quarantine measures, and have been responsible in this way for the spread of some kinds of illness."

#### New York City

**Harvey Society Lecture.**—The seventh Harvey Society Lecture will be delivered by Dr. William M. Bayliss, professor of general physiology, University College, London, at the New York Academy of Medicine, March 4, on the subject of "Vasomotor Reactions and Wound Shock."

**The Association of Cardiac Clinics.**—The Association of Cardiac Clinics held a meeting at the New York Academy of Medicine, February 8. Dr. Frank N. Wilson, Ann Arbor, Mich., delivered the address of the evening, his subject being "The Roentgen Ray in Cardiac Diagnosis."

**Fellowship at Lebanon Hospital.**—A fellowship to be awarded annually to the graduate house surgeon who, in the opinion of the medical board, has had the best record during the entire term, has been provided by Dr. Abraham J. Rongy, at the Lebanon Hospital, New York. The fellowship will amount to \$600.

**Herter Foundation Lectures.**—A series of five lectures will be given in the University and Bellevue Hospital Medical College, under its Herter Foundation, on "Interfacial Forces and Phenomena in Physiology," by W. M. Bayliss, professor of general physiology, University College, London, England, beginning Monday, February 27, and continuing daily at the Carnegie Laboratory.



**Hospitals Acquire Real Estate.**—The Hospital for Joint Diseases has purchased the lot and three story dwelling at 50 East One Hundred and Twenty-Fourth Street. With this purchase the hospital has now assembled a site 200 by 154 feet on which it will construct an eight story building.—The New York Throat, Nose and Lung Hospital has bought the adjoining four story dwelling on a lot 20 by 100½ feet at 227 East Fifty-Seventh Street. This gives the institution control of an 80-foot frontage.

**Section on Ophthalmology of the Associated Outpatient Clinics.**—A section on ophthalmology of the Associated Outpatient Clinics was organized, January 24, with the following officers: chairman, Dr. Walter Eyre Lambert; vice chairman, Dr. Edgar Steiner Thomson, and secretary, Dr. Conrad Berens. Dr. John Martin Wheeler read a paper on "How Can the Admission of Patients Be Better Controlled?" and Dr. Edgar Steiner Thomson discussed the subject "How Can We Best Regulate Refraction Work in Eye Clinics?"

**European Sanitary Relief Expedition.**—At a conference, February 2, at the office of Health Commissioner Copeland, which was attended by representatives, Bishop Manning, Archbishop Hayes, Hermand P. Metz and Darwin P. Kingsley, the European Sanitary Relief Expedition was formed, and Col. E. C. Gibbs was offered an invitation, which he accepted, to leave for Poland to study cholera, typhus and other European plagues, and work to prevent contagious diseases from reaching this country from Europe. Colonel Gibbs sailed on the *America*, February 4, and will receive no remuneration for his services.

**Permit to Manufacture Medicinal Beer Denied.**—Piel Brothers, brewers, who sought a permit to manufacture medicinal beer after the ruling of the attorney general several months ago, have lost their law suit to enjoin and restrain the federal authorities from interfering with them in the manufacture of beer for medicinal purposes. The decision was rendered in Brooklyn by Judge Edwin L. Garvin, who held that both the Volstead act and the Willis-Campbell act are constitutional. He took the position that beer is considered more as a beverage than as a medicine, and cited other decisions.

**Influenza During January.**—According to the *Weekly Bulletin* of the New York City Department of Health, in an analysis of 1,691 cases of influenza reported in the Borough of Manhattan from January 3 to January 31, in 385 there was no information as to age and sex of the person affected. Of the remainder, 626 were male and 680 female. Under the age of 5 years, girls were more frequently attacked than boys; 125 children under 5 were affected; from 5 to 9 years, inclusive, 101 cases were reported; from 10 to 14 years, there were only seventy-seven cases. A marked prevalence of the disease is noted in the age group between 20 and 40 years. In persons over 60 years of age, only forty-eight cases were reported. The disease, therefore, presents very much the same features that were noticed in previous outbreaks, so far as age distribution is concerned.

**Board of Health Regulates Hair Dressers and Beauty Shops.**—At the meeting of the board of health, January 26, resolutions were adopted amending Section 335 of the Sanitary Code to regulate all barber shops, hair dressing establishments, and manicuring or beauty parlors. No establishment of this kind can henceforth be conducted or maintained in the city of New York without a permit therefor issued by the board of health, or otherwise than in accordance with the terms of the permit and with the regulations of the board. These regulations, of which there are twenty, have to do with cleanliness and lessening the transmission of disease by instruments and appliances used in these establishments. All instruments must be sterilized after each separate use, and stick astringents, powder puffs, sponges and neck dusters are prohibited. Investigation has shown that many large barber shops in the city have not been complying with present regulations.

**A Plan to Provide Daily Medical Clinics.**—The Society for the Advancement of Clinical Study in New York, with headquarters at the New York Academy of Medicine, announces that the principal hospitals of New York are joining in a plan to provide daily medical clinics which shall be open to all members of the medical profession. The committee on medical clinics will so arrange the clinic dates for each hospital that at least one clinic will be given daily in New York. The attempt will also be made to have subjects of paramount importance covered at regular intervals. At an early date,

regular weekly bulletins will be issued, giving in detail the program of the clinics for the following week. For the present these bulletins will be sent without charge to those physicians who signify their interest, and expectation of at least occasional attendance. The clinics will be held with few exceptions at 3 in the afternoon. The committee in charge of these arrangements is composed of Dr. Dudley D. Roberts, chairman, and Drs. William R. Williams, Rowland G. Freeman, Walter L. Niles, Lewis F. Frissell and Dever S. Byard.

## OHIO

**Hospital News.**—A hospital will be erected in Oberlin, at a cost of \$100,000, to be known as the Allen Memorial Hospital. The institution will be built jointly by Oberlin College and the citizens of the town, with a bequest of \$50,000 left to the Oberlin Hospital Association by the late Dr. Dudley P. Allen. Dr. Allen also bequeathed \$50,000 for the endowment of the hospital.

**Personal.**—Dr. George J. Heuer, former associate professor of surgery, Johns Hopkins University Medical Department, Baltimore, has assumed his duties as professor of surgery at the University of Cincinnati College of Medicine. Dr. Heuer opened his first clinic in Cincinnati at the meeting of the Cincinnati Academy of Medicine, January 9.—Dr. Franklin D. Postle, London, has been appointed full-time health commissioner of Madison County.—Dr. David M. Criswell, Coshocton, has accepted a full-time contract as health commissioner for Coshocton County.—Dr. Fred W. Murrey, Caldwell, health commissioner of Noble County, retired from service, December 31.—Dr. Herbert T. Thornburgh, Columbus, has been appointed health commissioner for Trumbull County to succeed Dr. Bernard R. LeRoy, Warren.—Dr. John Spelman, Mount Sinai Hospital, Cleveland, has been appointed superintendent of the Touro Infirmary, New Orleans.

**Cleveland Institution to Receive Profits from Manufacture of Food Product.**—On January 26 a contract was signed between the Babies' Dispensary and Hospital and the W. O. F. Laboratories Company, Cleveland, in connection with the manufacture of S. M. A.—an artificial food adapted to mother's milk and developed by Dr. H. J. Gerstenberger, medical director of the Babies' Dispensary and Hospital and professor of pediatrics of Western Reserve University Medical School, who has transferred all of his right to the Babies' Dispensary and Hospital. As a result of this contract the Babies' Dispensary will receive a minimum of \$10,000 per year. To meet the request of Dr. H. J. Gerstenberger, the contract contains a clause limiting the use of the funds to research purposes. As the Babies' Dispensary and Hospital will be the future department of pediatrics of Western Reserve University Medical School, it is hoped that this accomplishment will aid in the prompt development of the pediatric unit of the new medical group of Western Reserve University.

## PENNSYLVANIA

**Personal.**—Dr. DeWayne G. Richey, McKeesport, has been appointed pathologist of Allegheny County.—Dr. William J. McGregor, Wilkensburg, has been appointed coroner of Allegheny County.

**Huntingdon County Medical Society.**—At the annual meeting of the society, held in December, under the presidency of Dr. Harry C. Wilson, the following officers were elected for the ensuing year: president, Dr. Fred Ruddy Hutchison; vice president, Dr. Frederick Pratt Simpson; secretary, Dr. John Musser Beck, and treasurer, Dr. George Gable Harman.

**Convicted on Charge of Abortion.**—A newspaper report states that Dr. Demarest W. Longwell of South Williamsport was sentenced, January 16, to pay a fine of \$500, the costs of prosecution and to undergo imprisonment for a period of from eighteen months to two years following conviction on a charge of procuring abortion by drugs and instruments.

**Hospital News.**—A new hospital will be erected at Waynesburg, at a cost of \$99,900. It is expected that the building will be ready for occupancy at the end of March. The hospital will have a capacity of forty beds.—The new hospital at Northampton was formally opened, February 2, by Dr. Harry Y. Horn, president of the Cement Medical Association. Dr. Charles A. Haff is the founder, and will be the director of the institution.



## SOUTH CAROLINA

**Public Health Institute.**—A public health institute was held, January 9-14, at Charleston, in cooperation with the South Carolina State Board of Health, under the presidency of Dr. James A. Hayne, state health officer. Dr. Charles V. Akin, U. S. Public Health Service, was director of the institute. Among the visiting speakers were: Dr. Valeria Parker, Dr. William P. Cornell, Dr. Edgar A. Hines, Dr. Rachele Yarros and Dr. Richard M. Pollitzer.

## TENNESSEE

**Hospital News.**—At a recent meeting of the board of directors of the Dyersburg General Hospital, Dyersburg, Dr. Charles A. Turner and Dr. John Cook were elected managers of the institution, to succeed Dr. William P. Watson.

**Public Health Week.**—In connection with the American Red Cross, the Parent-Teachers' State Tuberculosis Association and the state board of health, a public health institute was held, January 23-28, at Memphis. Dr. Olin West, secretary of the state board of health, and Dr. Eugene L. Bishop of the bureau of rural sanitation were among the speakers.

## WISCONSIN

**Personal.**—Dr. Bruno B. L. Monias, Austrian Public Health Service, has been appointed professor of bacteriology, pharmacy and forensic chemistry at Marquette University School of Medicine, Milwaukee.

**Joint Medical Meeting.**—A joint meeting of the Milwaukee Medical Society and the Neuro-Psychiatric Society of Milwaukee was held, January 31. Dr. Hugh T. Patrick, Chicago, and Dr. Matthew N. Federspiel delivered addresses at the meeting.

**Physician Sentenced to Prison.**—It is reported that Dr. Emil C. Schoene, recently found guilty on a charge of manslaughter in the second degree, has been sentenced to serve four years in the state prison. Judge Foley ordered a stay of execution for twenty days pending an appeal to the state supreme court and release of the physician under bond of \$25,000. If the supreme court does not order a stay of execution, Dr. Schoene will be committed to Waupum.

## PHILIPPINE ISLANDS

**Rizal's Birthplace Purchased.**—A recent law adopted by the Philippine legislature provides for the purchase of the grounds where Dr. José Rizal, the Philippine statesman, was born, at Calamba, Laguna. The premises will be deeded to the municipal authorities on condition that they will build a monument to Rizal on the ground.

## CANADA

**University News.**—It is stated that the standard for entrance to the McGill University Faculty of Medicine will be raised for the next session. The requirement will be one year in arts, or what is technically known as senior matriculation.

## GENERAL

**Committee on Scientific Research.**—The Trustees of the American Medical Association have made an appropriation of \$1,500 to aid meritorious research in subjects relating to scientific medicine and of interest to the medical profession, which otherwise might not be carried on to completion. Applications for small grants should be made to the Committee on Scientific Research, American Medical Association, 535 North Dearborn Street, before March 15, 1922, when action will be taken on the applications received.

**National Safety Council Issues Bulletin on Accidents.**—The National Safety Council has just issued a bulletin analyzing public accidents occurring in the United States for the years 1915-1920, inclusive. Figures are quoted as to vehicular fatalities, falls, drowning, railroad and elevator accidents, and aeroplane fatalities.

**International Mails Closed to Narcotics.**—According to a resolution adopted at the Universal Postal Union Convention, held recently at Madrid, opium, morphin, cocain and other narcotics are barred from international mails, effective Jan-

uary 1. All postal employees are instructed to inspect mails going to foreign points to see that this order is complied with.

**Medical Officers of Camp Greene.**—At the Boston Session of the American Medical Association, the medical officers of Camp Greene effected an organization of which Dr. Charles F. Adams, Trenton, N. J., is president. More than 200 officers were in training at the camp; seventy of these men have joined the organization. Those who have not received notices of the organization meeting should communicate with the secretary, Dr. C. P. Brown, 102 South Twenty-Second Street, Philadelphia.

**American Public Health Association Appoints Gorgas Memorial Committee.**—The American Public Health Association at its meeting, Nov. 18, 1921, adopted a resolution heartily endorsing the proposed Gorgas Memorial Institute, and requesting its president to appoint a committee of five to cooperate with the officers and directors of the proposed Gorgas Memorial Institute. In accordance with these resolutions, the president, Dr. Allan J. McLaughlin, has appointed a committee, consisting of Dr. William H. Welch, chairman, Baltimore; Dr. A. T. McCormack, Louisville, Ky.; Dr. Victor C. Vaughan, Washington, D. C.; Prof. E. O. Jordan, Chicago, and Dr. M. P. Ravenel, Columbia, Mo.

**Life Tables Issued.**—The Department of Commerce through the Bureau of the Census announces that the second official publication on life tables is soon to be issued. These tables show conditions as they existed each decade since 1890. Among some of the points brought out are the fact that mortality at practically all ages is higher among men than among women; rural classes have a lower mortality than those living in the cities; while almost all classes of persons are living to an older average age, the limiting age of life is not advanced; there is a decided improvement in the prevention of infant mortality. The publication also includes life tables for various foreign countries and the most important mortality tables used by life insurance companies here and abroad.

**Eyesight Conservation Council.**—The Hoover Council Committee on Elimination of Waste in Industry has reported heavy losses to industry through defective vision, which has resulted in the organization of the Eyesight Conservation Council, composed of economists, educators, industrialists and eye experts of the country. This organization held a meeting, February 7, in New York City, under the presidency of L. W. Wallace, secretary of the American Engineering Council, Washington, D. C., for the purpose of planning a campaign into schools, colleges, industrial plants and all professions for the conservation of eyesight. According to statistics, the eye is responsible for 11 per cent. of all industrial accidents, and approximately 25,000,000 workers in the United States have defective vision which needs attention.

**Influenza in the United States.**—Telegraphic reports to Surgeon-General Cumming of the U. S. Public Health Service show that 8,768 cases of influenza were reported to the health officers of thirty states during the week ending February 4. Of these, 5,731 cases were reported in New York City. The population of these states is about 70,000,000, making 12.5 cases per hundred thousand population. These figures are higher than corresponding figures for the previous week, and also higher than those for the corresponding week of last year; but during the corresponding week of 1920, more than 225,000 cases were reported by the state health officials of these states. During the week, the number of reported cases of influenza increased somewhat over the greater part of the country, as is expected at this season of the year, but the increase was especially noticeable in New York state, New England and New Jersey.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

The A. Barton Hepburn Hospital, Ogdensburg, N. Y., \$250,000, by the will of its founder, A. Barton Hepburn.

New York Ophthalmological Hospital and the Flower Hospital, New York City, and the Greenwich Hospital, Greenwich, Conn., each \$150,000, by the will of Commodore E. C. Benedict, Greenwich.

Women's and Children's Hospital, Flint, Mich., \$73,100, from a campaign for the purchase of a new building for that institution.

Youngstown Hospital Association, \$60,000; St. Elizabeth's Hospital, Youngstown, Ohio, \$25,000; Visiting Nurses Association and Home for the Aged, each \$10,000, by the will of Mrs. Grace Tod Arrel.



New Waynesburg Hospital, Waynesburg, Pa., \$50,000, by Mrs. Josephine Hambleton and Mrs. Annie L. Wolfersberger.

Sullivan County Hospital, Sullivan, Ind., \$200,000, from the estate of the late Orlando C. Brewer of Fairbanks.

Hebrew Orphan Asylum; Mount Sinai Hospital; United Hebrew Charities and Montefiore Home, New York City, each \$10,000, by the will of Julius Keyser.

Ponca City Hospital, Ponca, Okla., \$5,000, by E. W. Marland of Oklahoma.

Society for Organizing Charity, an annuity of \$5,000, by the will of the late Mary M. Cochran. The will stipulates that, if this society disbands, the income is to be divided equally among five institutions, one of which is the Philadelphia Seashore Home, Atlantic City, N. J.

City Health Department, Oshawa, Canada, \$1,200, for the establishment of a public health laboratory in that city, by George and R. S. McLaughlin.

Mercy Hospital, Hamilton, Ohio, \$1,000, by the will of Dr. C. N. Huston.

Children's Homeopathic Hospital, Philadelphia, \$500, by the will of Rachel E. Reimer.

### LATIN AMERICA

**Yellow Fever Eradicated in Guayaquil.**—It has been reported by the sanitary commission of Ecuador that yellow fever has been completely eradicated from Guayaquil.

**Woman Professor in Medical School.**—For the first time in the history of the medical schools of Latin America, a woman has been given a chair in the medical faculty. Dr. Maria Teresa Cerrari de Galvino has been appointed to the chair of gynecology in the University of Buenos Aires.

**Election of Officers.**—The Sociedade de Medicina e Cirurgia of Rio de Janeiro has elected for the year of 1922 Dr. M. Ozorio de Almeida, president; Dr. L. Gonzaga, vice president; Dr. Arnaldo Moraes, secretary general, and Dr. T. de Almeida, Dr. J. Motta and Dr. B. Costa, acting secretaries.

**Smallpox in Santo Domingo.**—The present smallpox epidemic in Santo Domingo is causing daily new cases and quite a number of deaths. When the epidemic appeared nearly a year ago, many of the physicians leaned to the opinion that it was alastrim.—Whooping cough has also been unusually prevalent in Santo Domingo this winter.

**Next Mexican Medical Congress.**—The *Revista Médica de Tampico* brings the details in regard to the Seventh National Medical Congress which is to convene at Saltillo in September. Saltillo is not far from the northern boundary of Mexico, almost due south of El Paso and west of the mouth of the Rio Grande. Dr. D. M. Vélez is to preside, and the secretary is Dr. E. Landa, Calle delle Perú 130, Mexico City.

**Vital Statistics of Rio de Janeiro.**—The *Brasil-Médico* relates that the death rate for 1921 was 19.95 per thousand inhabitants. Disease of the digestive apparatus and tuberculosis were responsible for nearly 50 per cent. of the total mortality. Syphilis is credited with 626 deaths; malaria with 360, and malignant disease with 516 of the total 23,324 deaths; beriberi with 2, smallpox with 4, measles with 95, diphtheria with 60 and typhoid with 132. There was no death from yellow fever.

### FOREIGN

**Grant for Scientific Research.**—The Vienna Academy of Sciences has allowed 5,000 crowns to a local medical student, F. Scheminsky, to continue his research on the influence of electric currents on the growth of fish.

**London School of Tropical Medicine.**—A portrait of Sir Patrick Manson, F.R.S., was unveiled at the London School of Tropical Medicine, by Sir James Michelli, January 20. A fund has been established for the institution of a medal to be awarded annually for clinical research to be known as the Manson medal.

**Memorial to Wilhelm Wundt.**—Professor Pfeifer, the sculptor, states that the sum of 25,000 marks is needed for the completion of his marble bust of Wundt. One thousand marks may be sent for about six dollars, and should be addressed to Prof. Felix Krueger, Psychologisches Institut der Universität (Johanneum), Leipzig, Germany.

**Serbian Physicians Visit London.**—Dr. George Joannovich, professor of pathologic anatomy, and Dr. Radenko Stanovich, professor of internal medicine of the medical school of the

University of Belgrade, visited London recently, as the guests of the Rockefeller Foundation. They had previously made an extensive tour in the United States and Canada, for the purpose of studying methods of medical education and public health administration.

**Anniversary of Roentgen-Ray Treatment in Dermatology.**—The Vienna Medical Society recently celebrated the twenty-fifth anniversary of Dr. L. Freund's report to the society of his successful application of the roentgen rays in treatment of hypertrichosis. The Vienna school thus claims to have led the way in dermatology, although Freund's communication was received at the time with the usual skepticism for all innovations.

**Public Health Institute.**—The Royal Institute of Public Health of Great Britain will hold a congress in Plymouth, England, May 31 to June 5. The conference will be in four sections: (1) state medicine and municipal hygiene; (2) naval, military and air; (3) bacteriology and biochemistry; (4) women and public health. The Harben lectures will be given during the meeting by Dr. T. Madsen, director of the State Serum Institute, Copenhagen.

**Prize to Professor Ranke.**—The University of Würzburg has awarded the Schneider prize for the best work on tuberculosis during the last ten years to Prof. K. E. Ranke of the University of Munich. The award states that by his anatomic research on the primary complex and the secondary phase of tuberculosis, clinical understanding of the beginnings of tuberculosis has been deepened, and a basis of pathologic anatomy provided for recognition of the incipient disease.

**A Spanish Academy Appoints Officers.**—The Academia de Ciencias Médicas de Bilbao has appointed the following officers for the year 1921-1922: president, Dr. W. López Albo; vice president, Dr. López Abadía; secretary general, Dr. Mendaza; librarian, Dr. Léniz y Amezaga; recording secretary, Dr. Guericabaitia; members, Drs. Aguirrezabala, Allende and Serra. The academy organized recently a course in pathology of the digestive tract by prominent physicians.

**Abolition of District Hospitals in Ireland.**—The new Poor Law and medical reform scheme recently put forward by the Dail Eirann would eliminate all district hospitals. The various county practitioners have held meetings and passed resolutions demanding that the medical provisions of the present amalgamation scheme should be suspended until a commission, on which the medical profession would be adequately represented, has formulated a scheme for all efficient Irish medical services suitable to the requirements of that country.

**Midwifery in Indian Universities.**—It is reported that the General Medical Council, after considering the replies received from Indian universities and colleges regarding the course of study in midwifery pursued by candidates for Indian medical diplomas, resolved that these diplomas under existing conditions did not furnish a sufficient guarantee for the efficient practice of midwifery within the meaning of the medical act. As a result of this resolution, a letter was sent to the Indian teaching centers to the effect that unless the requirements in regard to midwifery were brought forthwith into accordance with the council's resolutions, recognition of the diplomas by the council must cease, giving February, 1922, as the time limit up to which evidence of compliance was to be submitted.

### Deaths in Other Countries

Sir John Kirk, veteran of the Crimea, former consul to Zanzibar, died in Kent, England, January 15, aged 90.—Dr. John Simpson, founder of the Forster Green Hospital for Consumption, died, January 11, in Belfast.—Dr. R. C. Holman, surgeon to the Great Northern Railway, died, January 13, in Sussex, England, aged 73.—Dr. H. E. Garrett, London, surgeon to the Metropolitan police and medical officer for Shoreditch.—Dr. R. Roycroft, Natal, South Africa, died, December 17.—Dr. Brice Smith, Belfast, former president of the British Gynecological Society, died, January 2, aged 83.—Prof. Max Verworn, professor of physiology and zoology, University of Bonn, died, November 23, aged 57.—Dr. B. Stiller, professor of internal medicine at the University of Budapest, of visceroptosis and universal asthenia fame, at an



advanced age.—Dr. F. Rivelles Ibáñez, editor of the *Union Médica* of Saragossa, Spain.—Dr. J. R. Oliver of Buenos Aires, aged 50.

### CORRECTION

**Modification of Odén Bandage.**—In the article by Dr. E. M. Livingston, *THE JOURNAL*, February 11, page 429, Figure 1 should be Figure 2 and vice versa.

**Shell Fractures of the Spine.**—In the article by Dr. R. E. Cumming, *THE JOURNAL*, February 4, page 335, the illustration showing the spinal cord has the gray matter reversed.

**Diagnosis of Diabetes.**—In the article by Dr. H. J. Johns on "The Methods of Precision in the Diagnosis of Diabetes: A New Instrument," *THE JOURNAL*, January 14, p. 105, the formula

$$\frac{\text{Quantity standard (in c.c.)}}{\text{Quantity unknown (in mg.)}} \text{ should be } \frac{\text{Quantity standard (in mg.)}}{\text{Quantity unknown (in c.c.)}}$$

## Government Services

### Public Health Surgeons Oppose Unjust Classification

Opposition to the provisions of the Lehlbach bill for the classification of government employees, which passed the House of Representatives, December 15, is being made by officers of the U. S. Public Health Service. The bill establishes six grades, in some one of which all government employees are classified. It includes under the title "professional service" workers in bacteriology, chemistry, medicine and pathology. Grade 2 would include at least two thirds of the medical officers of the Public Health Service, and would fix their minimum salary at \$2,100 and the maximum at \$2,600 a year. This grade would include all classes of positions, the duties of which are to perform under general direction "assigned professional work requiring professional training and previous experience but not the exercise of independent judgment." Grade 3 has a minimum salary of \$2,820 and a maximum of \$3,540, and would include "all classes of positions in this service the duties of which are to perform independently or with a small number of subordinates in the junior or assistant professional grade—responsible professional work requiring extended training and considerable successful experience." It is estimated that not more than 10 per cent. of the personnel of the Public Health Service could be included in Grade 3. The Lehlbach bill is now before the Senate Committee on Civil Service. Efforts will be made to have the U. S. Public Health Service exempted. If the present bill becomes a law, medical officers of the Public Health Service will suffer material reductions in pay and allowances, which are now on the same basis as those of officers of the army and navy.

### Classification of Government Employees

The Lehlbach bill, classifying all civilian positions in the government service and fixing salaries according to such classifications, has been favorably reported to the Senate from the Committee on Civil Service. The bill was amended by the committee so as to exclude from its provisions the commissioned personnel of the U. S. Public Health Service. The bill has already passed the House of Representatives, and it was pointed out to the Senate committee that the proposed classifications would adversely affect the administration of the public health organization and in many instances cause medical men in this branch of the government service to suffer loss in salaries. The Senate committee also amended the bill by including nurses in the professional classification. This amendment was adopted at the instance of the National Organization for Public Health Nursing and others who urged that the trained, registered nurse should be recognized professionally in this legislation. On this subject, the committee, in its report, says that "it has seemed entirely practicable that nurses whose duties require them to pursue a

professional or scientific training equivalent to that represented by graduation from a college or university of recognized standing shall be included in the professional service, and that other nurses who are not required by their duties to have attained full professional standing shall be classified in the subprofessional service."

### Examinations for the U. S. Public Health Service

The Treasury Department Bureau of the Public Health Service, Washington, D. C., has announced the following examinations for entrance into the regular corps of the United States Public Health Service: New Orleans, February 20; Washington, D. C., March 13; San Francisco, March 13, and Chicago, April 3. Candidates must not be less than 23 years of age nor more than 32. They must have graduated in medicine from some reputable medical college, and have had one year's hospital experience or two years in professional practice. Oral, written and clinical tests must be passed before a board of medical officers. Successful candidates will be recommended for appointment by the President with the advice and consent of the Senate. For further information apply to the Surgeon-General, U. S. Public Health Service, Washington, D. C.

### Brigadier Generals in Officers' Reserve Corps

Two more members of the medical profession have been selected by the Surgeon-General of the Army and approved by the President for appointment as brigadier generals in the Officers' Reserve Corps of the Army. They are: Dr. Charles Y. Zimmerman, Cleveland, and Dr. Henry A. Shaw, Worcester, Mass. The nominations have been submitted to the Senate.

### Liaison Officer with Red Cross

Lieut.-Col. Paul C. Hutton, Medical Corps, U. S. Army, on duty at the office of the Surgeon-General of the Army, has been detailed as liaison officer between the War Department and the Red Cross National Headquarters.

### Reduction in Number of Army Officers

A sweeping reduction in the number of army officers on duty in Washington has been announced by Secretary of War Weeks. The inspector general of the army has been detailed to make an investigation and study of the personnel and activities of every branch of the department to bring about a decrease in the officers stationed at the national capital. It is expected that the cuts will be made in the medical department of the army because of the number of officers in this department who are on duty in Washington. The Walter Reed General Hospital as well as the Army Medical School will suffer losses in personnel.

### Appropriations for Government Medical Activities

The Committee on Appropriations has presented a bill to the House of Representatives covering appropriations for the Department of the Interior for the coming fiscal year. Among the provisions applicable to public health are appropriations of \$30,000 for the suppression of traffic of intoxicating liquor among the Indians; \$370,000 for the prevention and treatment of contagious and infectious diseases among the Indians, as well as for the maintenance and operation of the general hospitals for their benefit. The bill also contains appropriations to provide for the medical and sanitary relief of the Eskimos in Alaska covering the cost of physicians, nurses and other necessary expense. The sum of \$1,000,000 is appropriated for the operation of St. Elizabeth's Hospital in Washington, with an additional \$100,000 for repairs and another \$128,500 for a laboratory building and an isolation building. A total appropriation of \$111,020 is made for the Freedmen's Hospital.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Jan. 9, 1922.

#### Steinach's Rejuvenation Operation

In a previous letter (*THE JOURNAL*, June 18, 1921, p. 1776), the sudden death was reported of a Mr. Wilson, who had undergone Steinach's rejuvenation operation (ligature of the vas deferens), on the eve of a lecture which he was about to deliver in the largest hall in London on his own successful case. At this time, an attempt was being made to interest the British medical profession in the operation, but this dramatic case seems to have brought all such efforts to an end. In the *New York Medical Journal*, Dec. 21, 1921, appears a "Preliminary Communication Regarding Steinach's Method of Rejuvenation" by Dr. Harry Benjamin of New York, who reports successful cases and bears out Steinach's claims. But the article contains one gross misstatement of fact which should not be allowed to pass uncontradicted. He asserts that the death of the man in question after his remarkable improvement was due to pneumonia and was unfairly used against Steinach. "He had been so overjoyed with his newly gained physical and mental strength that he overdid the enjoyment of life." He may have overdone the enjoyment of life, which one would imagine is a serious danger to old men who have been rejuvenated. Though almost unnoticed by medical writers, the fact is well known that the marriage or liaison of an old man with a young woman is detrimental to his health and often cuts short his life. If undue sexual activity in the old is dangerous, although some sexual power still persists, how much more dangerous is it likely to be when sexual power has been restored artificially after its natural disappearance? This objection does not appear to have troubled the advocates of Steinach's operation on old men. It does not apply perhaps to men who are prematurely senile. To return to Dr. Benjamin's narrative: The statement which he has accepted and repeats—that Mr. Wilson died from pneumonia—is untrue. The evidence given by his physician at the inquest was that he died from angina pectoris. The necropsy revealed all the organs normal.

#### Municipal Medical Socialism

The attempt of the Willesden Urban District Council to set up a local medical service, partly at the expense of the ratepayers, providing medical treatment at a fixed tariff, has been reported in a previous letter (*THE JOURNAL*, Dec. 24, 1921, p. 2072). It is opposed by the local physicians and the local division of the British Medical Association, who contend that it is the business of the council to provide only a preventive service, as they have not the means of providing a treatment service also. The council has made a reply asserting that, as the local sanitary and educational authority, it has certain duties and powers placed on it by law. It is unable to accept the view that its function is to deal with the health of the necessitous poor only. In its opinion, it has to safeguard the health and act in the interest of the entire community. The majority of the patients dealt with at the municipal school, maternity and child welfare clinics would not go for advice to the private physician until their health was undermined. The council considers advice in health and early treatment on the first manifestations of disease to be primary factors in preventive medicine. Its clinics provide treatment by specialists, and there is a staff of visiting consultants whose services would not otherwise be generally available for the persons attending the clinics. The

council denies the statement that it neglects preventive for curative work; for, in 1920, the death and infant mortality rates of the district were the lowest recorded. It is prepared to consider any scheme which the local division of the British Medical Association may submit for the clinics, reserving the right to come to the final conclusion thereon. It will consider it from every point of view, including that of the physicians in particular and the community in general, and the matter of administration and finance.

### PARIS

(From Our Regular Correspondent)

Jan. 20, 1922.

#### The Future of Gynecology

In giving an account of the last congress of the association of gynecologists and obstetricians of French-speaking countries, I mentioned the address of Dr. J.-L. Faure, professor of clinical gynecology of the Faculté de médecine of Paris and president of the congress, who, with a certain note of sadness, uttered a somewhat gloomy prophecy with respect to the future of surgical gynecology. Faure was of the opinion that during the course of the twentieth century, the methods of medicine would gradually wrest from surgery what the latter had taken from medicine (*THE JOURNAL*, Nov. 12, 1921, p. 1586). Dr. L.-M. Pierra, editor-in-chief of the *Revue française de gynécologie et d'obstétrique*, discusses Faure's prophecy somewhat at length in an interesting article, "Has the Surgical Era of Gynecology Come to a Close?" He recalls that for centuries gynecology was an almost purely medical subject. Doubtless Faure was right in vaunting the miraculous developments of gynecologic surgery, which first revealed to us our power. But why did the president deliberately omit all reference to the dark sides of the picture? When the physicians of earlier generations, disdaining work purely manual, gave their orders to the "chirurgiens inciseurs," this "work of the hands" assumed too important a place in the therapeutics of gynecology. Note what Professor Richelot said, in 1904, in his inaugural address before the Congrès de gynécologie, d'obstétrique et de pédiatrie, of which he was the president: "We must confess we have merited more than one criticism. We have sacrificed everything, we have subordinated everything to our manual work, and some assert that the sureness of our hands has caused us to believe in the infallibility of our minds. . . . The *Bulletin de la société de chirurgie* is no longer anything but a collection of reports on operative medicine. Perhaps it would be worthy of our ambitions to publish something besides reports of operative procedures. . . ." And the fact is that, for a period of thirty or forty years, gynecology has been almost exclusively surgical; whereas, according to the opinion of even a surgeon, Dr. F. Jayle, the therapeutics of gynecology presents an aspect mainly surgical in no more than half the cases. During all this period, gynecology has been the appanage of general surgeons, and, since many of these received no special training in gynecology, it can be assumed that they have not always applied to the "other half of the cases" the therapeutics that was most appropriate. But the most serious harm that has come from this lack of training in gynecology, as regards the majority of surgeons, is the fact that many have gone too far in the matter of removal of organs—mutilating operations, which the Italians designate by the expressive term "*démolitrices*." At the present time, methods of physiotherapy are gradually winning back all the ground lost through the widespread introduction of operative methods. We know today that surgical intervention is sometimes not merely contraindicated but actually useless, and that other methods can be substituted to advantage: kinesitherapy



in prolapses and less marked displacements of the uterus; hydrotherapy, including the employment of mineral spring water, in most nervous affections, troubles of nutrition and circulation, and in certain cases of salpingitis without cysts; roentgen irradiation and radium in many fibromas of moderate size, and radium in cancer of the uterus.

But from the fact that physical agents are rendering immense service in cases in which, until recently, surgical intervention would have been resorted to, does it necessarily follow that the knife must always give way to them? By no means, Pierra thinks, and contends that the future of gynecologic surgery lies in an ever closer combination of medical, surgical and physiotherapeutic methods. We must no longer be men of one system, of one method. Gynecologic surgery is not yet ready to leave the field, and it is doubtful whether it ever will be. However, from now on, it must expect to have to meet the competition not only of medical methods but also of physical agencies. If this competition between diverse methods, which it would be absurd to regard as opposing each other absolutely, has the effect of compelling the gynecologist to draw the lines closer in determining the therapeutic indications in each individual case, the patients cannot but benefit by the result.

#### A Munificent Gift to the Faculté de Médecine

Mme. Georges Dieulafoy, widow of the late professor of clinical medicine, recently presented to the Faculté de médecine of Paris securities netting an annual income of 26,000 francs, which will be thus partitioned: (1) 8,000 francs to the medical clinic of the Hôtel Dieu, of which Georges Dieulafoy was formerly the head and which is now in the hands of Professor Gilbert; (2) 8,000 francs to the medical clinic of the Hôpital Cochin (Professor Widal); (3) 5,000 francs to the medical clinic of the Hôpital Saint-Antoine (Professor Chauffard); (4) 5,000 francs to the chair of internal pathology, the present incumbent of which is Professor Rénon, a former pupil of Dieulafoy. When Chauffard and Rénon give up their respective chairs, 2,000 francs of income will be deducted from each of their portions and will be added to the gifts to the clinics of the Hôtel Dieu and the Hôpital Cochin, which will bring their revenue up to 10,000 francs each. The remaining 6,000 francs of income will serve to found six scholarships of 1,000 francs each, which will bear the name of the donor, Claire Georges-Dieulafoy, and will be allotted to deserving students of limited means. Mme. Dieulafoy had previously founded, in memory of her husband, two scholarships of 500 francs each.

#### The Dangerous Effects of Certain Motion Picture Exhibits

At one of its recent meetings, the council of the Ligue d'hygiène mentale discussed the bad influences that may be exerted by certain motion pictures on the mentality of subjects who are easily affected by suggestion. It is certain that the influence of the motion picture is, in this respect, much more intense than that of the theater. As has been stated by Dr. Labrousse, an alienist and a member of the French senate, the visual perception is not so exclusively engrossed in the theater, for attention is diverted from the visible by the auditive perception and by the text of the play, which causes reflection; whereas, in the case of the motion picture, the eyes constitute the exclusive port of entry by which the attractions of the film impress themselves on the brain. Only recently a young criminal confessed that he had learned at the motion picture show the method of perpetrating his crime. It is, therefore, advisable that films be subjected to public control. In some countries there is censorship of films, and it was in connection with a communication from Dr. Billström, psychiatric expert for the bureau of censorship of Stockholm, that the Ligue d'hygiène mentale

took up the discussion of this delicate question. There is a certain control of films, at the present time, in certain cities of France. For example, at Saint-Etienne the director of the Bureau municipal d'hygiène performs the duties of censor; but such a practice can hardly be generally recommended, since, when the censorship is left to one person, he is likely to be accused of being arbitrary. The Ligue d'hygiène mentale would favor rather the creation of a board of censors composed of members from different professions, with a view to reducing to a minimum errors of judgment. It even proposes that the question be made more comprehensive and that a special commission be appointed that would be charged with "safeguarding the interests of mental hygiene in connection with literary and artistic productions." However, it is easy to foresee that this comprehensive manner of viewing the interests of mental hygiene would not fail to encounter great difficulties in actual practice; in France especially, where the principle of the "liberty of art" is looked on as almost unassailable.

#### Open-Air Schools

The municipal council of Paris recently established, in the budget of 1922, a credit of 100,000 francs to defray the expenses of open-air schools. This credit may be used for the support of existing schools or for the study of questions in regard to installation and methods of management.

#### BELGIUM

(From Our Regular Correspondent)

LIÈGE, Jan. 11, 1922.

#### A New Medical Enterprise

A very interesting movement that deserves the attention of the medical profession in general is found in the medico-surgical cooperation that has recently been launched in the industrial district of Liège. A large group of workmen, about 50,000 in number, organized, several years ago, a federation the purpose of which is to afford mutual aid in case of sickness or accident. This is only the prelude, for the organization of such mutual aid societies is quite a common thing, they being recognized and favored by the state authorities. But, in this particular case, the most interesting feature, from the medical point of view, is the peculiar method of coordination of medical effort. It is this organization that we wish to describe somewhat in detail. Among this group of 50,000 workmen (which, with the women and children, comprises 120,000 persons), a population included within an average radius of about 12 miles (19 kilometers), the medical services are assured by local practitioners who keep in constant touch with the Institut médical central. In view of the progress that has been made and is constantly being made in all branches of medicine, the general practitioner cannot pretend to be omniscient, and the assertion is made today that, in order to have the best chances of arriving at an accurate diagnosis, the collaboration of a certain diagnostic group is necessary, such a group being made up of physician, surgeon, certain specialists, bacteriologist and roentgenologist. I suppose, from this point of view, the organization of the Mayo brothers in Rochester, Minn., gives the highest form of guarantee, owing to the multiplication of services and the mutual dependence of the different specialists. The new organization that is now functioning at Seraing is a repetition, on a small scale and for a restricted clientage, of the Rochester plan. The 50,000 members and their families, 120,000 persons in all, receive in their homes, at the residence of their physician or in the various organized policlinics, the care of numerous specialists. But in order to coordinate all these efforts, the rule was established at the start that every chronic case and every case in which the indications are that sur-



gical intervention may be necessary shall be referred, at the request of the attending physician, to the *cabinet central consultatif* (a diagnostic group). This cabinet or council consists of a surgeon and an internist, who have at their disposal all the means of research that they desire: laboratory and roentgenologic services, and various specialists. If an obscure case comes to light at their consultation, after the examination in common with the attending physician, the patient is referred first of all to a certain specialist, the laboratory researches are ordered and the roentgenologic examinations are carried out. When these findings have been reported, the cabinet central consultatif "strikes the pathologic balance" for the patient, and it is only after the council is in possession of all the facts, nothing being left to chance, that the diagnosis is pronounced and the operative indications are finally established. It will be easy to see that considerable scientific and professional interest attaches to an organization of this kind.

This federation of workmen, having at its disposal very limited resources, by daily savings of a few cents has succeeded in founding a coherent organization that promises to be very fruitful of results. But the movement has not stopped here. Wishing to create a tangible center for their organization, the federation has recently founded a hospital in which the various services might be housed. This hospital is already under roof and its opening is promised at no distant date. The hospital is located in the center of the industrial region that it is to serve, and will have about sixty beds, two operating rooms, a laboratory and a roentgenologic department. The medical personnel consists of two physicians, two surgeons, two anesthetists, an ophthalmologist, an otorhinolaryngologist, two gynecologists, a pediatrician, a roentgenologist, a laboratory specialist, a dermatovenerologist, a urologist and two dentists. The estimated cost of the hospital is 2,000,000 francs. Aside from the general medico-surgical services, there will be prophylactic and antivenereal services following the suggestions of the minister of the interior and the Comité supérieur d'hygiène. This ensemble reminds one very forcibly of the organizations for "group practice" and of the "pay clinics" that have been heralded by the American press, during recent months.

#### Standardization of the Measurement of the Chest Girth

It is a well known fact that the interest in anthropologic measurements has received a marked impetus since studies on physical culture have become more general, especially in connection with the campaign against tuberculosis and the movement to bring more of our young men up to the standard of military fitness. At a recent meeting of the Société d'anthropologie of Brussels, Monsieur Galet pointed out that it is exceedingly important that all military examining boards should endeavor to take the chest girth in accordance with a uniform method, for if different methods are employed a considerable discrepancy in the measurements is likely to result. From researches carried out in the anthropologic laboratory of Forest Prison, it appears that, in taking measurements of the lower thorax, preference should be given to the dorsal recumbent position. The figures obtained indicate that the chest expansion taken under these conditions does not differ at all from the chest expansion taken in the standing position, with the arms extended laterally or in front of the body. Measurements of the thorax taken with the subject in the dorsal recumbent position require possibly a little more time, but they reduce the percentage of error.

#### Medical Inspection of Schools

The reforms in social medicine that we touched on in a previous letter are to be put into force in a short time. In this connection, Monsieur Péchère, speaking recently before

the Société médico-chirurgicale of Brabant, made some interesting suggestions from the medical point of view. If the medical profession wishes to go to the trouble and desires to measure up fully to its task, it is in a position to assume a preponderant rôle. It is regrettable to note that all too often the assignment of children to classes is based on such empiric data as height and age instead of on the child's intellectual equipment. In certain communes it has been shown that 30 per cent. of the children are in classes in which they do not belong. The use of the Binet and Simon tests would make it possible to avoid such reprehensible errors in classification. It is the duty of the medical inspector of schools to conduct such tests as will bring to light all somatic and psychic troubles. Since May, 1914, the law requires the communes to establish a service of medical inspection. It is the duty of physicians to see to it that the law is carried out. Péchère called attention to the communications presented by Professor Demoor to the Conseil supérieur d'hygiène and the practical proposals that he made: surveillance of school buildings, and examination of children on first being admitted, to discover any pathologic conditions affecting the eyes, ears, nose, lungs, chest and musculature. He emphasized the importance of individual record cards; that they should be made out in duplicate, one remaining on file at the school, and the other remaining in the possession of the pupil as he passes from one school to another. He also pointed out the relations to be established between the medical inspector, the principal of the school, the family of the pupil and the family physician, and took up the question of professional secrecy or privileged communications. The psychic, medicopedagogic examination would make it possible not only to determine the "mental age" of the child but also to establish an orientation on a professional basis; whereas all too often everything is left to chance or to entirely fortuitous circumstances. He emphasized the important rôle to be played by the medical inspector from the prophylactic and hygienic standpoint, with respect both to the individual and to society in general.

#### BERLIN

(From Our Regular Correspondent)

Jan. 13, 1922.

#### The Maternity Hospitals of Prussia

In 1919, there were seventy-three maternity hospitals in Prussia in operation—three less than in the previous year. Private maternity homes with less than eleven beds are not included in these figures. The seventy-three institutions may be divided into three classes: university clinics, ten; public institutions, forty-two, and private institutions, twenty-one. In these seventy-three institutions, there are 3,339 beds for patients. The total number of women who were confined in these institutions in 1919 was 42,831, as compared with 38,144 in 1918. In about one birth out of ten, an obstetric operation was necessary, namely, in 4,876 instances in 1919, and in 3,814 cases in 1918. Death following the operation resulted, in 1919, in one case out of 327. An examination of the reports reveals the fact that the proportion of children born in these institutions, as compared with the total number of births, steadily increased up to 1918; 1919, however, shows a decrease over the three previous years. By the present statistics, it becomes established beyond a doubt that confinements within an institution are fraught with much less danger for mother and child. General recognition of this fact doubtless causes more and more prospective mothers to prefer to be confined in an institution, in which decision, aside from the prospect of better medical attention and better nursing, the bad housing conditions and the scarcity of coal doubtless play a part. The decrease in 1919 is perhaps to be explained by the greatly



increased charges demanded by the institutions. Of the patients treated in the maternity hospitals in 1919, 291 contracted puerperal fever, among whom there were 102 deaths. The mortality rate in 1919 for puerperal fever was 23.81 per 10,000 confined in these institutions. Of the new-born, 944 died in the institutions in 1918 during the treatment of the mothers, and in 1919 the number rose to 1,072. The number of abortions was 4,331 in 1918, and 4,217 in 1919.

#### Societies for Popular Instruction in Hygiene

As an example of a simple, inexpensive, yet efficient mode of popular instruction in hygiene, Dr. E. Welde refers in the *Deutsche medizinische Wochenschrift* to the Leipzig Verein für Volksbelehrung in Säuglings-, Kinder- und Mutterpflege. Since 1915 this society has organized mothers' courses in the care of infants and children, in which, up to 1919, over 2,000 mothers, prospective mothers and others interested have taken part. Then, in 1920 a society was formed which, in addition to the mothers' courses, holds evening gatherings once a month. The society has also met with success in the rural districts. Various guilds in the suburbs of Leipzig have organized similar courses in the small cities and villages. The verein or society was also entrusted with the training of welfare workers and midwives. These courses have been attended with marked success. They are given in a large room at a hotel and from 300 to 500 women, girls and men of all classes take part. Greater general interest in the undertaking is awakened by the fact that various forms of social entertainment, sometimes even dances, are combined with the lecture and instruction courses. Many come at first mainly on account of the social attractions, but receive, nevertheless, valuable instruction in hygiene. Another excellent feature is that these local gatherings of the most diverse elements of the population, for a common purpose, tend to bring about an intellectual approach among the various classes of the people that have become estranged by the stress of events of recent years.

#### Finger Prints of Mental Defectives

Before the Berlin Psychiatric Society, the subject of finger prints of mental defectives was recently discussed. Professor Poll described the triangle method for the analysis of finger prints. The three principal typical elements of finger prints—arches, loops and whirls—are recorded as they occur on the three sides of a right-angled triangle, the positions being designated by the numbers 1 to 10, while within the triangle certain square fields are examined. Every such field represents a possible type of occurrence of the three main distinguishing marks found on the fingers of man. The percentages of a group of persons are now entered in the proper fields. Thus, a survey of a group according to their fundamental types of finger prints is secured. Various groups were tested according to age and sex; and, before examining the finger prints of pathologic subjects, the normal types of healthy subjects were established. Later Poll examined 1,500 mental defectives and schizophrenics. Although the numbers examined thus far are too small to justify a definite conclusion, the indications are that a relationship exists between the character of the finger prints and the quality of the nervous system, since not only in the mentally defective subjects but also in the schizophrenics it could be established that there were abnormal types and distributions. Since the genesis of the various patterns of finger prints is based on the laws of heredity, it is likely that the hereditary course of the types of finger prints that point toward mental defects will be eventually worked out, and that by observation of the finger types of parents it will be possible to recognize in the children the dangerous types that point to a tendency to idiocy.

## Marriages

GEORGE C. MEDAIRY, U. S. Public Health Service Hospital, Fort McHenry, Md., to Miss Eva Mary Hilton at Baltimore, January 21.

CHARLES HOLTON BABBITT, Nashua, N. H., to Miss Ethel May Verner of Hazleton, Pa., in New York, January 1.

ARTHUR S. NUCKOLS, Ponca City, Okla., to Mrs. Hazel Hyatt of Arkansas City, in Oklahoma City, January 10.

EDWARD CHADWICK McCLEES, Elm City, N. C., to Miss Jane Bullock of Montgomery, Ala., December 29.

KEITH SHERWOOD McKEE, Bakersfield, Calif., to Miss Sarah Gladys Downing of Macomb, Ill., December 31.

ERWIN PHELPS MILLER, Gibbon, Neb., to Miss Myrl Rodgers of Red Oak, Iowa, December 19.

WILLIAM LEIR WHITEHEAD to Mrs. Birdie Toomer Rollins, both of Perry, Ga., December 29.

CLAUDE BASIL NORRIS to Miss Fannie Inez Bell, both of Oklahoma City, February 1.

OSCAR C. HOPPER to Mrs. Jeanne Jacques, both of Stanton, Neb., December 12.

## Deaths

Pearce Bailey ⊕ New York City; College of Physicians and Surgeons of Columbia University, New York City, 1889, died at his home, February 11, from pneumonia, aged 57. Dr. Bailey was graduated from Princeton University in 1886, and following his medical graduation studied abroad, much of the time in France. He was adjunct professor of neurology at Columbia University, from 1906 to 1910, and consulting neurologist to St. Luke's, Roosevelt, New York and other hospitals. Dr. Bailey was a member of the editorial board of the *Archives of Neurology and Psychiatry*; he contributed extensively to medical periodic literature and was author of "Accident and Injury; Their Relation to Diseases of the Nervous System," published in 1898. During the war he served as colonel, M. C., U. S. Army, in charge of the neuropsychiatric division in the Surgeon General's Office, in recognition of which he received the distinguished service medal. He was a former president of the American Neurologic Association; chairman of the New York State Commission for Mental Defectives; one of the founders of the New York Neurologic Institute, and originator of the Classification Clinic recently established in New York City for determining mental efficiency and aptitude of young men for various vocations. Dr. Bailey, while devoting himself to one of the medical specialties, was a man of public spirit and broad vision.

Ernest Gustavus Zinke ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1875; was found dead in bed, from heart disease, at a hotel in Palm Beach, Fla., January 30. Dr. Zinke was born in Spremberg, Prussia, May 29, 1846. He served in the Prussian navy from 1862-1870. After his graduation, Dr. Zinke served as assistant to the chair of ophthalmology and otology, 1876-1879, prosector of anatomy, 1877-1879; adjunct professor of obstetrics, 1891-1896, at the Medical College of Ohio, Cincinnati; emeritus professor of obstetrics and clinical gynecology, Medical Department of the University of Cincinnati; formerly gynecologist and abdominal surgeon, German Hospital, and chief of staff since 1888; obstetrician, Ohio Maternity Hospital. He was a member of the Southern Surgical and Gynecological Association; first vice president of the Ohio State Medical Association; former president of the Cincinnati Academy of Medicine; chairman of the section on obstetrics, gynecology and abdominal surgery, American Medical Association, 1914, and at one time president and for ten years secretary of the American Association of Obstetricians and Gynecologists.

Estell H. Rorick, Fayette, Ohio; University of Michigan, Ann Arbor, 1869; member of the Ohio State Medical Association; formerly superintendent of the State Hospital for the Insane, Athens, Ga., and of the Institution for the Feeble-Minded, Columbus, Ohio; representative for Fulton County, 1890-1892; member of the state board of administration; died, January 27, from cerebral hemorrhage, aged 79.

⊕ Indicates "Fellow" of the American Medical Association.



**Clarence Thomas Campbell**, London, Ont., Canada; Western Homeopathic College, Cleveland, 1865; Homeopathic Medical College, Philadelphia, 1866; former member of the Ontario Medical Council; served as vice president, 1892, president, 1893, of the Canadian Medical Association; chairman of the London board of education for many years; served as alderman and in 1905 was elected mayor of London; died recently, aged 79.

**George Washington Tully**, Pryor, Okla.; Chattanooga Medical College, Tenn., 1901; member of the Oklahoma State Medical Association; formerly health officer of Mayes County; president of the Mayes County Medical Society; served during the late war, M. C., U. S. Army, with the rank of captain; died, December 17, in Muskogee, Okla., aged 50.

**William Marshall Trimble**, Fort Worth, Texas; Baylor University College of Medicine, Dallas, 1908; member of the State Medical Association of Texas; county physician; formerly principal of the North Side High School and organizer of Arlington College; died, January 22, from cerebral hemorrhage, aged 54.

**Stephen Beasley Longino**, Sulphur Springs, Texas; University of Louisville, Medical Department, Louisville, Ky., 1886; member of the State Medical Association of Texas; was instantly killed, December 14, when the automobile in which he was riding was struck by a passenger train, aged 65.

**William Castein Mason**, Bangor, Me.; Medical School of Harvard University, Boston, 1878; member of the American Academy of Medicine; surgeon to the Eastern Maine General Hospital, and consulting physician to Home for Aged Women; died, January 19, from angina pectoris, aged 69.

**Dorvil Miller Wilcox**, Lee, Mass.; Berkshire Medical College, Pittsfield, Mass., 1866; member of the American Academy of Medicine; since 1872 served as member of the school board; Civil War veteran; former president of the Berkshire County Medical Society; died, January 25, aged 81.

**Emil Theodore Grasser** ♂ Louisville, Ky.; Kentucky School of Medicine, Louisville, 1900; vice president of the Jefferson County Medical Society; former instructor in the laboratory of histology, Kentucky School of Medicine; died, January 23, aged 48.

**August K. Detwiler** ♂ Omaha; University of Pennsylvania, Philadelphia, 1894; professor of clinical therapy, John A. Creighton Medical College, Omaha; member of the Omaha Pathological Association; died, January 30, aged 52.

**Charles Tearmy Dulin** ♂ Tucson, Ariz.; St. Louis College of Physicians and Surgeons, St. Louis, 1893; served during the World War, with the rank of first lieutenant, M. C., U. S. Army; died, January 20, aged 52.

**Henry C. Bartleson**, Lansdowne, Pa.; Jefferson Medical College, Philadelphia, 1870; member of the Medical Society of the State of Pennsylvania; Civil War veteran; died, January 29, from heart disease, aged 77.

**William O. Green**, Seymour, Ind.; Medical Department, University of Louisville, Ky., 1873; member of the city board of health; was found dead in his office, January 30, from heart disease, aged 73.

**Floyd J. Gregory, Jr.**, Keysville, Va.; Vanderbilt University Medical Department, Nashville, 1901; member of the Medical Society of Virginia; died, January 20, from pneumonia, aged 46.

**George Lennon Clark**, Clarkton, N. C.; University of the City of New York, 1876; member of the Medical Society of the State of North Carolina; died, January 24, from pneumonia, aged 70.

**George W. Orr** ♂ Lake Linden, Mich.; University of Michigan, Ann Arbor, 1877; founder and president of the Lake Superior General Hospital, Lake Linden; died, January 23, aged 74.

**Marion Theodore Sigler**, Odell, Neb.; John A. Creighton Medical College, Omaha, 1916; member of the Nebraska State Medical Association; died, January 20, from scarlet fever, aged 28.

**George P. McKenney**, Denver; Rush Medical College, Chicago, 1890; member of the Colorado State Medical Society; died, January 22, from cerebral hemorrhage, aged 66.

**Daniel F. Rose**, Carrick, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1906; medical instructor of the borough schools; died, January 22, aged 42.

**Caleb Eugene Mathis**, Kansas City, Mo.; Rush Medical College, Chicago, 1884; died, January 15, following an operation for prostatic hypertrophy, aged 63.

**Arthur M. Heilman** ♂ Butler, Pa.; University of Pennsylvania, Philadelphia, 1902; died, January 30, in a hospital at St. Petersburg, Fla., from cerebral hemorrhage, aged 42.

**Samuel W. Johnson**, Dallas, Texas; Bellevue Hospital Medical College, New York, 1882; Atlanta Medical College, Atlanta, Ga., 1878; died, January 8, aged 68.

**James Irvin Hoverder**, Atco, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1884; died suddenly, January 22, from heart disease, aged 62.

**Charles Adams Finefrock**, Monrovia, Calif.; Starling Medical College, Columbus, Ohio, 1905; formerly of Prospect, Ohio; died, January 21, aged 39.

**J. Rufus Humphrey**, Bluemont, Va.; University of Maryland School of Medicine, Baltimore, 1874; died, January 10, after a lingering illness, aged 68.

**Hiram Howard Burris**, Dongola, Ill.; Chicago Physio-Medical Institute, Chicago, 1889; died, January 19, from carcinoma of the bladder, aged 55.

**W. E. Atwell**, Zanesville, Ohio; Western Homeopathic College, Cleveland, 1869; veteran of the Civil War; died, January 19, from senility, aged 82.

**Thomas N. Cochran** ♂ Trenton, Tenn.; University of Tennessee College of Medicine, Memphis, 1886; died, January 23, from pneumonia, aged 59.

**William W. Stonehocker**, Bladensburg, Ohio; Columbus Medical College, Columbus, 1881; died, November 15, from chronic nephritis, aged 66.

**Edwin Baxter Brigham**, Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1895; died, January 9, from diabetes mellitis, aged 64.

**Charles L. Boyd**, Paoli, Ind.; Medical Department, Butler University, Indianapolis, 1881; also a druggist; died, January 25, from paresis, aged 67.

**Charles W. Ewing**, Olathe, Kan.; Jefferson Medical College, Philadelphia, 1888; died, January 17, from heart disease, at Kansas City, aged 60.

**William Henry Kirkland**, Gallion, Ohio; Homeopathic Hospital College, Cleveland, 1878; died, January 24, from bronchopneumonia, aged 81.

**William C. Waters**, Zanesville, Ohio; Columbus Medical College, Columbus, 1882; died, November 22, from chronic nephritis, aged 74.

**William S. Carrion**, St. Joseph, Mo.; Meharry Medical College, Nashville, Tenn., 1888; died, November 15, from myocarditis, aged 56.

**Alexander Reynolds**, Graham, Va.; Medical College of Virginia, Richmond, 1855; veteran of the Civil War; died, January 21, aged 91.

**Louise F. Jessup Smith**, Wabash, Ind.; Northwestern University Woman's Medical School, Chicago, 1882; died, February 1, aged 69.

**John Edward Rankin**, Kentfield, Calif.; University of Buffalo, N. Y., 1891; formerly of Petoskey, Mich.; died, January 7, aged 80.

**Robert E. Massey**, Topeka, Kan.; Kansas Medical College, Topeka, 1898; died in a local hospital, from pneumonia, aged 60.

**William Nelson Burdick** ♂ Prescott, Ariz.; University of Michigan, Ann Arbor, 1873; died, December 26, from aneurysm, aged 71.

**William Wooden Johnston**, Greensburg, Pa.; Bellevue Hospital Medical College, New York City, 1881; died, January 3, aged 70.

**John W. Murray**, Emmett, Kan.; University of Louisville, Louisville, Ky., 1886; died, January 10, from biliary calculi, aged 59.

**Robert C. Wallis**, Rockdale, Texas; Missouri Medical College, St. Louis, 1881; died, January 15, from acute indigestion, aged 67.

**Allen B. Gunn**, Belleville, Ill.; Missouri Medical College, St. Louis, 1875; died, January 22, from pneumonia, aged 74.

**John Gartman Martin**, New Orleans; Tulane University of Louisiana, New Orleans, 1901; died, January 19, aged 47.

**J. M. Stalling**, Grantville, Ga.; Atlanta Medical College, 1861; died recently, from cerebral hemorrhage, aged 90.

**Francis Marion Bayes**, Paintsville, Ky.; Louisville Medical College, Louisville, 1889; died, December 17, aged 69.

**George H. Gorham** ♂ Boston; Tufts College Medical School, Boston, 1903; died, November 28, aged 50.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### UROTROPIN OMITTED FROM N. N. R.

#### Report of the Council on Pharmacy and Chemistry

Urotropin is a proprietary name applied to the substance which is known in chemical literature as hexamethylenetetramin and which is designated Hexamethylenamine in the U. S. Pharmacopeia. The Council has authorized publication of the following report explaining that Urotropin was omitted from New and Nonofficial Remedies because (1) Schering and Glatz, Inc. (which markets this brand of hexamethylenamine in the United States) refused to place the U. S. Pharmacopeia name, hexamethylenamine (*hexamethylenamina*) on the label and in its advertising so as to make clear to physicians the identity of the product and (2) it was sold under therapeutic claims which the Council held unwarranted.

W. A. PUCKNER, Secretary.

#### COMMERCIAL HISTORY OF HEXAMETHYLENAMINE

The substance which is generally referred to in chemical literature as hexamethylenetetramin, the cyclic condensation product of formaldehyd and ammonia, appears to have been described first in 1860 (Butlerow: *Ann. d. Chem.* **115**: 322, 1860). Subsequently, numerous references to the preparation, properties and constitution of the substance appeared in chemical literature.

Hexamethylenetetramin is said to have been first used for therapeutic purposes by G. Bardet, who, in 1894, reported to the Société de Thérapeutique that he believed this substance to be a uric acid solvent. At about the same period, A. Nicolaier, who gave Bardet credit for suggesting the use of hexamethylenetetramin as a uric acid solvent, announced the discovery of its antiseptic action (*Centralbl. f. d. med. Wissensch.* **32**:897, 1894; *Deutsche med. Wchnschr.* **21**:541, 1895). Shortly thereafter as a result of Nicolaier's publication, the Chemische Fabrik auf Aktien vorm. E. Schering, Berlin, Germany, began to offer the product to the medical profession under the trademarked and non-descriptive name "Urotropine." In the United States, it was marketed by Schering and Glatz, who then were acting as American agents for the Schering works of Germany.

It soon became evident that hexamethylenetetramin was a valuable drug. As the substance was introduced at a time when new "synthetic" drugs were rapidly appearing and when unlimited and uncritical confidence was placed in them, and before the medical profession became skeptical of the claims advanced by manufacturers for their respective "discoveries," it was not long before this new drug was placed on the market by many firms, each applying its own name and often keeping the chemical character of it in the background. Some of the names which were thus applied to hexamethylenamine were Cystogen, Aminoform, Formin, Uritone, Urisol, Cystamine.

In 1907 the late Professor J. O. Schlotterbeck, then a member of the Council, protested against the confusion caused by the marketing of a given drug under different names. He stated that it was not uncommon for a physician to prescribe two or more of these identical substances in the same mixture, expecting to get the combined action of different urinary antiseptics; also, that patients had been treated first with hexamethylenamin under one name and later by the same substance under another name (*THE JOURNAL*, Jan. 19, 1907, p. 241).

Hexamethylenetetramin was admitted to the eighth revision of the U. S. Pharmacopeia. In part because of this official recognition and standardization and in part because the extravagant reports of its virtues had been largely discounted, physicians have in general, prescribed the drug by its pharmacopeial name, with one notable exception: Urotropin. One reason for this is that Urotropin was the first proprietary brand of hexamethylenetetramin introduced; a second reason is that through the extensive and persistent advertising of the proprietary name under which the substance was introduced, it has become firmly fixed in the minds of many physicians. Another is that the product was claimed

to be of greater purity than the product sold under the pharmacopeial or other name although no evidence confirmatory of this claim has ever been published. On the other hand, Danial Base, as long ago as 1907, found that hexamethylenamin sold under its pharmacopeial name is just as pure as when sold under proprietary names. When, in 1907 urotropin was admitted to New and Nonofficial Remedies, the published description showed that it was manufactured by the Chemische Fabrik auf Aktien vorm. E. Schering, Berlin, and that Schering and Glatz were the United States agents. In 1919, the description was revised to show that Schering and Glatz were no longer selling the German product.

While it is the general practice to omit articles that are admitted to the U. S. Pharmacopeia for the reason that their quality is guaranteed under the federal Food and Drugs Act and because pharmacopeial nonproprietary articles are rarely advertised with claims that require the Council's control, yet, in the case of Urotropin, it was retained because it was sold under a name not recognized in the pharmacopeia and because special (proprietary) claims were made for it.

#### UROTROPIN MARKETING UNDER UNWARRANTED THERAPEUTIC CLAIMS

The period for which Urotropin stood "Accepted" expired with the close of 1921. To determine its continued eligibility for New and Nonofficial Remedies, the Council examined the labels and circular matter sent by Schering and Glatz for the purpose and also a booklet "Urotropin," subsequently sent by the firm to physicians.

It was found that the pamphlet contained a number of unwarranted statements. Particularly objectionable are the claims made for the use of Urotropin as an antiseptic in body fluids that are alkaline, such as the cerebrospinal fluid, bile, aqueous humor of the eye, saliva, the excretions caused by middle ear infection and other excretions of the nasal, bronchial, laryngeal and mucous membranes. The lack of efficacy of hexamethylenamin in alkaline secretions is generally admitted and the clinical references to the use of hexamethylenamin in the pamphlet are obsolete. In the introduction to the pamphlet, Schering and Glatz state that they are well acquainted with the scientific research work discrediting the efficiency of hexamethylenamin in nonacid mediums, but that they feel that the accumulated evidence for its efficacy in such conditions should not be "brushed aside." However, the pamphlet is not made up of quotations, but of unqualified statements. With one exception, all references to the antiseptic properties of the drug in alkaline mediums are previous to 1913, that is, before the importance of reaction of the medium was fully appreciated. To quote these earlier articles without regard to the later work, which in most eyes discredited them, constitutes in effect an exploitation of this brand of hexamethylenamin under unwarranted therapeutic claims.

#### UROTROPIN A BRAND OF HEXAMETHYLENAMINE, U. S. P.

In consideration of the confusion which arises from the application of different names to an identical article, the rules of the Council provide that when an article which has been accepted for New and Nonofficial Remedies is admitted to the U. S. Pharmacopeia under another name, it will be retained, provided the official name is given prominence on the label and in the advertising of such article. Neither the label nor the advertising for Urotropin gives prominence to the pharmacopeial name as a synonym nor indeed does it bring out the fact that Urotropin is a brand of hexamethylenamine, U. S. P. Schering and Glatz, Inc., was advised that Urotropin could be retained in New and Nonofficial Remedies only on condition that the objections to the therapeutic recommendations were removed and on agreement that the U. S. P. name appear on the labels and circular matter. The firm did not offer to make the product eligible for continued recognition; accordingly the Council directed the omission of Urotropin because of conflict with Rule 6 (Unwarranted Therapeutic Claims) and with Rule 8 (Objectionable Names).

**Local Injection of Emetin in Oriental Sore.**—G. T. Photinos reports the prompt cure in thirteen cases of tropical leishmaniasis by treatment with local injection of emetin. The drug seemed to kill off the parasites in a single injection. The cure of the lesion was complete in from twenty to thirty days and there has been no sign of recurrence in any of his cases to date. The age of the patients was from 3 to 81 years. He describes his technic with illustrations of some of the cases in *Grèce Médicale* **22**:81, 1921.



## Correspondence

### "ACTION OF MAGNESIUM SULPHATE ON THE BLADDER"

*To the Editor:*—The editorial in THE JOURNAL, February 4, tends to repeat an error which has been made and published by many men. I refer to the numerous quotations of the work of Meltzer, on the effect of magnesium on the duodenum, the papilla of Vater and the gallbladder. To my knowledge, Lyon, Synnott, Smithies and others have all stated that Meltzer, in a series of experiments, determined that magnesium sulphate relaxes the papilla of Vater, and causes contractions of the gallbladder. I can find no references in the literature to support such a statement. Most of the magnesium work that Meltzer did was done by Meltzer and Auer, and consisted of either intravenous injections of magnesium or local applications of magnesium to the peripheral nerves, or intraspinal injections of magnesium solutions.

There is only one reference that I can find wherein magnesium sulphate solution was actually put into the intestine. That article (*Archives of Internal Medicine* 15:955 [June] 1915) notes that peristalsis ceased in a loop of intestine when the lumen was filled with magnesium sulphate solution. It makes no reference to the papilla or to the gallbladder, nor does any other experiment of Meltzer and Auer involve the biliary apparatus in this respect.

It is essential that all of us clearly understand that Meltzer suggested or tried to predict what the action of magnesium would be when applied to the papilla. That is as far as he went.

The proponents of the Lyon test have made free use of the weight and authority of the name of Meltzer to support their contention. I am writing this that the revered name of Meltzer be not taken in vain, and that, at least, we concretely understand just what experiments Meltzer did perform bearing on the subject, and what work, erroneously credited to him, he did not perform.

BURRILL B. CROHN, M.D., New York.

### THE COEXISTENCE OF HODGKIN'S DISEASE AND AMEBIASIS

*To the Editor:*—The present statement is a preliminary note on a study of Hodgkin's disease in its relation to amebiasis which has been pursued since October, 1921.

In that month, H. M. S. of Melbourne, Australia, came to Dr. Boyers suffering from Hodgkin's disease, diagnosed by excision and microscopic examination of a cervical lymph node, showing typical lesions.

As Dr. Boyers had been associated with Professor Kofoid for more than two years in studying the clinical aspects of amebiasis, in the service of Dr. R. T. Legge at the University of California Infirmary at Berkeley, and in private practice, it occurred to him to submit specimens of stool from the patient to Professor Kofoid and Dr. Swezy. The stools were found to carry *Endameba dysenteriae* and *Councilmania*.

The patient, besides the usual treatment with the roentgen ray and a supplementary single treatment with radium, was given at once in a period of twelve days 36 grains (2.3 gm.) of bismuth emetin iodid, 6 grains (0.4 gm.) of emetin hydrochlorid, and three doses of neo-arsphenamin of 0.3, 0.6 and 0.6 gm. Coincidentally he was given antimony oxid for the *Councilmania* infection over a period of five weeks.

The patient sailed for Australia the last of November. On shipboard he improved markedly. On reaching Tahiti, during very hot weather, he died suddenly of a profuse nasal hemorrhage.

The coexistence of Hodgkin's disease and amebiasis in the patient was so striking that Dr. Boyers called the coincidence to the attention of Prof. C. A. Kofoid, and submitted the preparation of cervical lymph node in the hope that he could identify the ameba in the stained section.

Another case of Hodgkin's disease was sought and found in A. J. P. Subsequent to a diagnosis of Hodgkin's disease, her stools also were found to carry *Endameba dysenteriae*.

Prior to the treatment of H. M. S. for amebiasis, three stools were examined, and typical four-nucleate cysts of *Endameba dysenteriae* were found in each in abundance. There was a concurrent infection by the recently described human intestinal ameba *Councilmania lafleuri* Kofoid and Swezy. One month after treatment, one stool examination was made with negative results for the two amebas named. Examination of the stained slide of the cervical gland revealed typical endothelioid cells with vesicular nuclei and central karyosome. We were unable to find evidence that these were amebas. Certain pale ameboid cells, few in number and apparently dead, occurred in the section, with several small vesicular nuclei which resembled certain of the multinucleate amebas in bone lesions in arthritis deformans (Kofoid and Swezy, and Ely, Reed and Wyckoff: *California State J. Med.*, February, 1922).

Two stools were examined in the second case (A. J. P.), one a warm stool in a vacuum bottle. This had typical four-nucleate cysts of the ten-micron race of *Endameba dysenteriae*. The second stool was negative. We have no sections of glands from this case.

Sections of glands and other organs of the case described by Lincoln (1908) have been sent to us by that investigator. These exhibit a few pale ameboid cells of the peculiar type noted by us in the section from Boyers' case (H. M. S.). Attention is directed to Lincoln's statement that the stools in his case contained cells resembling ova; but no worms were found at necropsy. These so-called cells might have been amebic cysts.

The authors desire additional material, especially properly fixed excised glands in early stages of the disease and necropsy material, and also from three to six successive stools from clearly established cases of Hodgkin's disease. A grant from the Carnegie Institution of Washington has been made in support of the research on these protozoan infections. The cooperation of physicians having cases of this rather rare disease under observation will be greatly appreciated.

CHARLES A. KOFOID, PH.D.,  
OLIVE SWEZY, PH.D.,  
LUTHER M. BOYERS, M.D.,  
Berkeley, Calif.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### THYROXIN—LIVER EXTRACTS—QUINIDIN

*To the Editor:*—1. For what is thyroxin employed and found efficacious, and where may it be obtained? 2. Is organic liver extract of any value in diagnosis and treatment of diseases of the liver? 3. Where may quinidin sulphate be obtained, how is it, or in what form is it marketed, and what is the price?

LOUIS HANNAH, M.D., Sylvania, Ga.

ANSWER.—1. According to New and Nonofficial Remedies, 1921, p. 354, thyroxin is used essentially for the same purposes as Dried Thyroids, U. S. P., but the dosage may be more accurately determined and results more quickly obtained. It is indicated in cases of diminishing or absent thyroid functioning, such as simple goiter, cretinism and myxedema. Thyroxin is manufactured by E. R. Squibb and Sons, New York.



2. We know of no evidence to indicate that liver extracts have any therapeutic value, and no preparations of this kind have been accepted for New and Nonofficial Remedies by the Council on Pharmacy and Chemistry.

3. Quinidin sulphate is marketed by chemical manufacturing concerns such as the Mallinckrodt Chemical Works, St. Louis; the New York Quinin and Chemical Works, Inc., New York, and the Powers-Weightman-Rosengarten Company, Philadelphia. It is sold in crystalline form at about \$1 an ounce (wholesale).

#### PHYSICIANS AND THE INCOME TAX

*To the Editor:*—1. Suppose your income with deductions is not enough to be taxable, why is it necessary and on what authority is a return to be filed? 2. If a physician moves, may he deduct the freight on his office equipment? 3. Should a physician go to a neighboring state to look over a location, would his carfare be a deductible expense? Please omit my name.

H. W. D., Kansas.

**ANSWER.**—1. The law requires that an income tax return shall be filed by every citizen whose gross income for 1921 amounted to \$5,000, or whose net income amounted to \$1,000 if single or \$2,000 if married. The instructions read "Under the above conditions a return must be filed even though no tax is due." The burden of proving exemption rests on the citizen, who must present sufficient evidence that his net income, minus allowable deductions, is below the taxable limit.

2. If a physician moves from one locality to another, his moving expenses are necessary business expenses and are deductible.

3. Expenses of trips for business purposes are deductible.

*To the Editor:*—In your article on the "Income Tax and Physicians," you put the amount of contributions that may be deducted as not over 15 per cent. of the gross income. Taken from the instructions, it should not exceed 15 per cent. of the net income, without benefit of the paragraph containing this exemption. It might save physicians trouble if this statement was corrected.

E. T. F., Alabama.

**ANSWER.**—The article on the income tax in *THE JOURNAL*, February 4, says that the total amount deductible for contributions and subscriptions to philanthropic, religious, humane and educational institutions "must not exceed 15 per cent. of the total income." The total income in this case was intended to mean total net income.

#### GRADUATE MEDICAL WORK ABROAD

*To the Editor:*—I expect to go abroad in about six weeks, and should like to know whether you can give me any information as to the best place to get work in dermatology and urology, and whether there are at present any agencies through which work can be arranged in London, Paris and Vienna.

X. Y. Z., St. Louis.

**ANSWER.**—Information concerning clinics available to American physicians in the foreign cities mentioned may be obtained from:

Miss M. Willis, The Fellowship of Medicine and Postgraduate Medical Association, 1 Wimpole Street, London, W. 1.

Miss Carolyn B. K. Levy, Collège des Etats-Unis d'Amérique, Third Floor, 10 rue de l'Elysée, Paris, France.

Office of Information, School of Medicine, Salle Beclard, rue Ecole de Médecine, Paris.

Mrs. E. Kreidl, The American Medical Association of Vienna, Café Klinik, Spital and Lazarethgasse, Vienna, Austria.

The "American University Union," which has offices in London and Paris, the Paris address being 1 rue de Fleures.

#### KOENIG'S NERVE TONIC

*To the Editor:*—Can you let me know the analysis of a preparation called "Pastor Koenig's Nerve Tonic," put up by Koenig's Medicine Company of Chicago, Illinois. Kindly omit name, using initials when replying.

L. F. F.

**ANSWER.**—Koenig's Nerve Tonic was declared misbranded by the federal authorities in a bulletin issued by the Department of Agriculture, Feb. 8, 1917. The government charged that such claims as: "A Natural Remedy for Epileptic Fits," "Nerve Tonic against Epileptic Fits, St. Vitus' Dance," etc., "were false and fraudulent in that said article did not produce the cure or therapeutic effects which purchasers would be led to expect" and that these claims "were applied to the said article with a knowledge of their falsity for the purpose of defrauding purchasers." For some reason the federal authorities did not give the results of their analyses as is usually done in such cases. The matter is briefly referred to in "Nostrums and Quackery," Vol. 2 (1921), page 144.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vigne, Juneau.  
ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd. Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, March 14. Sec., Elec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.

MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.

MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.

MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.

RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

### OPPORTUNITIES FOR A RESEARCH CAREER IN MEDICAL SCIENCE

GEORGE W. MC COY, M.D.

Chairman, Division of Medical Sciences, National Research Council,  
1920-1921

WASHINGTON, D. C.

There is perhaps no professional calling that leads to so many satisfactions in life as does that of the medical man, and this may properly be emphasized with respect to the man who devotes his talents to attempts at lighting the dark places in the fields of preventive and curative medicine. It is difficult to conceive of larger opportunities for service to one's fellows than are to be found in research activities in medical science, using the expression in its wider sense. While we have gone far in this exploration of many of the problems of medicine, none are exhausted, many have been only inadequately studied, and some are virgin fields.

In order that we may see clearly the kind of work in medical research which is still to be done, it will be advantageous to consider briefly two of the remarkable achievements of medical research in the relatively near past. First, there is the epoch making work of American investigators on the means by which yellow fever is carried. Prior to 1899 we knew nothing as to the manner in which the scourge of yellow fever was conveyed from person to person, and as a result we were quite at sea with respect to the control of the disease. Wherever it appeared in our country, panic and consternation prevailed. By a few well thought out experiments, Surgeon Walter Reed, of the U. S. Army, and his colleagues found that the dreaded tropical scourge was conveyed by a certain mosquito and only by this agency. At once we had placed in our hands means of checking the spread of this disease, and, indeed, of completely eradicating it, which amply justify the ambitious program of one of our large foundations, which has for its aim the extermination of yellow fever from the face of the earth.

The second splendid piece of research which illustrates the service of advancing medical knowledge is the work of Dr. Joseph Goldberger of the U. S. Public Health Service. This investigator undertook the work of establishing the cause of a disease far more prevalent than yellow fever ever was in this country, one that was and is a cause of much invalidism and many deaths—pellagra. By experimental feeding of



persons under various conditions it has been proved beyond the shadow of a doubt that pellagra is due to deficiencies in diet, and that relatively simple changes in food supply suffice to prevent pellagra, or, where it has already existed, to cure it.

What service can any man render his own and future generations that can lead to a more profound sense of satisfaction than that experienced by men who have made discoveries that have contributed so much to the alleviation of human suffering? Of course, it is given to few to make such large and important contributions as the ones mentioned, but there are many fields that offer inviting prospects of successful service through medical research.

What, then, are some of these problems that challenge the medical research investigator of this generation? One's mind turns at once to tuberculosis, that most common of human diseases, causing even now about 10 per cent. of all deaths. While many important facts are known, those essential to the control of the disease remain to be discovered.

Next in importance is cancer; here our knowledge is so sketchy as to be almost worthless. While the surgeons have made much progress in the early recognition and treatment of this most dreadful disease, which is the cause of so much suffering and of so many deaths, the means of prevention are quite beyond our present day knowledge.

One might enumerate a long list of promising fields for research in diseases that come under daily observation, but let us turn to a few of those fortunately rare in this country. Leprosy, unless some recent and optimistic reports are well founded, remains an enigma as to how it is transmitted and as to how it may be cured. To illustrate: A single problem in this field that would be worth a lifetime of careful work is the question of why this disease is apparently fairly easily communicated at some places and not at all communicable in others. Whoever gives us the solution of this may have solved the whole problem of the transmission of leprosy.

We know much of plague and of cholera, but much remains to be learned before our control of these is on a satisfactory basis.

This is an appropriate place to state that medical research is not confined to diseases of man. The field of veterinary diseases is a large and important one. Indeed, comparative studies of diseases of animals and of man have thrown much light on the latter, and may reasonably be expected to lead to very valuable developments in human pathology.

It is not alone in the fields of infectious diseases that our knowledge may be expected to advance. The chronic diseases, such as chronic interstitial nephritis, rheumatism, heart disease, and the whole group of mental disorders await study.

The opportunities for medical research are to be found chiefly in laboratories and hospitals. The large, well-equipped medical institutes, such as the Rockefeller Institute in New York, the Mayo Foundation in Minnesota and the Hooper Foundation in California, all furnish surroundings that are admirably adapted to research work.

The various governmental agencies, federal, state and municipal, carry on research work largely in connection with the routine health administration activities, and in so doing accumulate data which become the bases for studies in the spread of epidemics and health conditions in various industries and classes of the population. The statistical studies made by some of these institutions are often of the greatest value.

The best representatives of these are the Hygienic Laboratory of the Public Health Service, the Army Medical School, and the Naval Medical School, all at Washington, D. C. Of state institutions, those of New York, Massachusetts and Iowa are particularly to be mentioned. The demand

by such agencies for capable research talent is limited only by the funds which they have available.

A few hospitals are in position to carry on work along research lines, but the facilities that various institutions have for research purposes in the care of the sick often are not adequately utilized by reason of lack of financial support.

The financial rewards of medical research investigations compare favorably with those of research in other fields. The holder of a bachelor's degree may expect to begin on a salary of from \$1,500 to \$2,000 a year, and if his work shows promise, he should reach from \$2,500 to \$3,000 in about two years. Beyond this, there is no regularity of advancement, this being dependent largely on advancement of those above as in other lines of work.

#### Arkansas November Examination

Dr. J. W. Walker, secretary, Arkansas State Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 8-9, 1921. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Ten candidates were examined, all of whom passed. Fifteen candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
University of Kansas School of Medicine.....	(1920)		79
Hospital College of Medicine, Louisville.....	(1894)		82
University of Louisville Medical Department.....	(1910)		83
Tulane University.....	(1905)	83, (1921) 82,	83, 85
Washington University.....	(1915)		83
University of Nashville.....	(1898)		81
University of Tennessee.....	(1914)		81

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University.....	(1921)		Illinois
Rush Medical College.....	(1897)		Nebraska
Tulane University.....	(1919)	Mississippi, (1920)	Louisiana
University of Louisville Medical Department.....	(1910)		Tennessee
(1921) Kentucky			
Johns Hopkins University.....	(1920)		Virginia
University of Michigan Medical School.....	(1918)		Michigan
Washington University.....	(1913)		Missouri
Meharry Medical College.....	(1909)		Tennessee
Memphis Hospital Medical College.....	(1894)		Mississippi
University of Tennessee.....	(1921, 2)		Tennessee
Vanderbilt University.....	(1915) (1921)		Tennessee

#### Colorado October Examination

Dr. David A. Strickler, Colorado State Board of Medical Examiners, reports the written examination held at Denver, Oct. 4, 1921. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 11 candidates who took the physicians' and surgeons' examination, 6, including 5 osteopaths, passed, and 5, including 1 osteopath, failed. Twenty-five candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Northwestern University.....	(1921)*		87.1
Osteopaths.....	75.1, 76.6, 82.5, 87.1,		89.2

College	Year Grad.	Per Cent.
Kansas City College of Medicine and Surgery.....	(1921)	72.6
St. Louis College of Physicians and Surgeons.....	(1920)	68
University of West Tennessee.....	(1921)	48.7
University of Naples.....	(1921)†	63.3
Osteopath.....		60.3

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Atlanta College of Physicians and Surgeons.....	(1907)		Georgia
Loyola University.....	(1921, 2)		Illinois
Northwestern University.....	(1920)		Illinois
Rush Medical College.....	(1890) Iowa, (1896)		Ohio
College of Physicians and Surgeons, Keokuk.....	(1888)		Iowa
Keokuk Medical College, College of Phys. and Surg.....	(1907)		Iowa
Kansas Medical College, Topeka.....	(1909)		Kansas
College of Physicians and Surgeons, Baltimore.....	(1907)		Maryland
Harvard University.....	(1920)		California
Saginaw Valley Medical College.....	(1901)		Michigan
University of Minnesota Medical School.....	(1913)		Minnesota
American Medical College.....	(1883)		Nebraska
Barnes Medical College.....	(1893)		Missouri
Kansas City Medical College.....	(1892) Missouri, (1905)		Kansas
St. Louis College of Physicians and Surgeons.....	(1908)		Illinois
Washington University.....	(1919)		Missouri
University of Nebraska.....	(1921)		Nebraska
Medical College of Ohio.....	(1903)		Ohio
Ohio State University College of Medicine.....	(1914)		Ohio
Memphis Hospital Medical College.....	(1906)		Tennessee



University of Nashville.....(1907) Kansas  
University of Virginia.....(1892) Tennessee  
\* This candidate has finished the medical course and will obtain the  
M.D. degree after he has completed a year's internship in a hospital.  
† Graduation not verified.

### Florida October Examination

Dr. William M. Rowlett, secretary, Florida State Board of Medical Examiners, reports the written examination held at Tallahassee, Oct. 11, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 32 candidates examined, 20 passed and 12 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Birmingham Medical College.....	(1910)	77.3	
University of Alabama.....	(1909)	83.2	
Atlanta College of Physicians and Surgeons.....	(1913)	86	
Atlanta Medical College.....	(1915)	77.5, 78	
Atlanta School of Medicine.....	(1908)	76.5	
Georgia College of Eclectic Medicine and Surgery.....	(1911)	75	
University of Georgia.....	(1899)	78.2	
American Medical Missionary College.....	(1910)	78.6	
Tulane University.....	(1920)	87.4	
College of Physicians and Surgeons, Baltimore.....	(1896)	75.9	
University of Maryland.....	(1906)	88.2	
Columbia University.....	(1904)	85.4	
Medical Dept. of the Univ. of the City of New York.....	(1895)	77.5	
University and Bellevue Hospital Medical College.....	(1920)	91.9	
University of Pittsburgh.....	(1902)	81.6	
Woman's Medical College of Pennsylvania.....	(1898)	82.2	
University College of Med., Richmond.....	(1911)	85.1, (1913) 88.9	
National University, Athens.....	(1913)*	75	
FAILED			
University of Alabama.....	(1911)	72.3	
University of Georgia.....	(1891) 69, (1912) 61.6, (1914)	72.1	
Chicago Homeopathic Medical College.....	(1903)	66.2	
College of Physicians and Surgeons, Baltimore.....	(1882)	62.7	
St. Louis College of Physicians and Surgeons.....	(1903)	71.7	
Long Island College Hospital.....	(1889)	73	
Medical College of Ohio.....	(1894)	65.8	
University of West Tennessee.....	(1911)	58	
University College of Medicine, Richmond.....	(1901)	63.2	
University of St. Thomas Medical Department.....	(1910)	59.5	
* Graduation not verified.			

### Georgia October Examination

Dr. C. T. Nolan, secretary, Georgia State Board of Medical Examiners, reports the written examination held at Atlanta, Oct. 11-13, 1921. The examination covered 10 subjects and included 100 questions. An average of 80 per cent. was required to pass. Three candidates were examined, all of whom passed. Six candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Emory University.....	(1917)	86.2	
College of Physicians and Surgeons, Boston.....	(1911)	89.7	
Jefferson Medical College.....	(1914)	89.8	
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Alabama.....	(1911)	Alabama	
Southern Medical College.....	(1889)	Alabama	
Tulane University.....	(1884), (1921)	Louisiana	
Meharry Medical College.....	(1921, 2)	Tennessee	

### Missouri October Examination

Dr. Cortez F. Enloe, secretary, Missouri State Board of Health, reports the written examination held at Kansas City, Oct. 10-12, 1921. The examination covered 14 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 23 candidates examined, 20 passed and 3 failed. Eight candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Howard University.....	(1921)	82.9, 83.3, 85.8	
Rush Medical College.....	(1921)	74.1	
Indiana University.....	(1921)	78.2	
University Medical College of Kansas City.....	(1901)	79.1	
University of Kansas School of Medicine.....	(1921)	82.1	
Harvard University.....	(1921)	86.6	
Tufts College Medical School.....	(1921)	78.8	
St. Louis College of Physicians and Surgeons.....	(1917)	75.1,	
(1919) 74.1			
Columbia University.....	(1919)	87	
Meharry Medical College.....	(1921) 72.6, 74.9, 79.7, 80.1, 80.9,		
(1922)* 74.8			
Marquette University.....	(1913)	74.9	
University of Naples.....	(1916)†	75	
FAILED			
St. Louis College of Physicians and Surgeons.....	(1918)	45.9, 53.6	
Meharry Medical College.....	(1921)	68.7	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Physicians and Surgeons, Little Rock.....	(1910)		Arkansas
Kansas Medical College.....	(1910)		Kansas
University of Kansas School of Medicine.....	(1919, 2)		Kansas
John A. Creighton Medical College.....	(1917)		Nebraska
University of Pennsylvania.....	(1920)		Penna.
Meharry Medical College.....	(1909)		Texas
University of Texas.....	(1920)		Texas
* License withheld until 1922.			
† Graduation not verified.			

## Social and Industrial Medicine

### SEROLOGIC SURVEY OF THE DENVER FLORENCE CRITTENTON HOME \*

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DENVER

The Denver Florence Crittenton Home operates under the Federated Charities in conjunction with the local courts. Its special function is the care of delinquent girls, especially the unmarried expectant mother. From the very nature of the social status of the inmates, it is safe to presume that practically all of them have been exposed to venereal disease. Yet the diagnosis of venereal disease is by no means easily made in the individual case. Either wilfully or through ignorance, the girls almost invariably deny the occurrence of an initial lesion, a leukorrhea, a rash, sore throat, mucous patches or any of the other common symptoms of syphilis, whose incidence among these girls is our special problem. In fact, experience with the attempt to obtain a history of syphilis is so uniformly unsatisfactory that it becomes incumbent on the observer to resort to other means for diagnosis.

The serologic examination of the blood has been found to be of greatest value. It is not our purpose here to discuss the relative merits of the Wassermann reaction. Like every other diagnostic aid, it has its limitations and it is by no means an infallible sign. However, for our purposes, we have regarded a strongly positive Wassermann reaction as diagnostic of syphilis.

TABLE 1.—WASSERMANN REACTION ON THE INMATES OF THE DENVER FLORENCE CRITTENTON HOME FOR A PERIOD OF TWO YEARS

Total number of persons examined.....	248
Number giving positive Wassermann reaction.....	115
Number giving negative Wassermann reaction.....	123
Number giving unsatisfactory Wassermann reaction.....	10

In September, 1919, we began to take a routine Wassermann reaction on every patient entering the home. In two years, 248 patients were examined serologically, and of these, 115, or 46 per cent., gave a positive reaction; 123, or 49 per cent., gave a negative reaction, and the remaining 5 per cent. had serums that were anticomplementary, and the brief residence of the patient in the institution precluded a satisfactory test. From these data alone it is safe to conclude that approximately half of the girls admitted to this home have contracted syphilis.

These delinquent girls must not be confused with confirmed prostitutes. Most of them are youngsters in their teens, hardly beyond their puberty. Their ages vary from 13 to 21, and their average age is 16. Many of them are first offenders, and some of them are committed to the home at the convenience of the court without reflection on their previous moral character.

As soon as a diagnosis of syphilis has been made, vigorous antisiphilitic treatment is instituted, consisting of intravenous

\* Read before the City and County of Denver Medical Society, Dec. 20, 1921.



injections of arsphenamin, intramuscular injections of mercuric salicylate, and mercurial inunctions. The course of treatment followed is that established by usage in the large clinics of this country and requires little further comment.

#### SEROLOGIC EXAMINATION

A considerable proportion of the inmates are expectant mothers. It is the custom of the home to care for these patients throughout their pregnancies and then to afford them a refuge for at least six months afterward. With reference to the serologic examination of the infants of these mothers, this was not attempted at first, chiefly because of the difficulty of obtaining the necessary sample of blood. However, it was decided to utilize the bleeding from the umbilical cord of the new-born. The manner of obtaining the blood from the new-born consists of severing the umbilical cord in the usual manner during labor, and permitting the stump to bleed directly into a test tube just before ligating it. In this manner, the blood of 110 new-born was obtained and examined.

TABLE 2.—WASSERMANN REACTION ON EXPECTANT MOTHERS COMMITTED TO THE HOME, AND THEIR INFANTS

	Number Examined	Positives	
		Number	Per Cent.
Mothers .....	110	22	20
New-born .....	110	3	2.7

The mothers of these infants were examined several weeks before labor, and of the 110 mothers, twenty-two, or 20 per cent., gave a positive reaction; whereas, of the 110 new-born, three, or 2.7 per cent., gave a positive reaction.

Of the twenty-two expectant mothers who had positive reactions, nineteen had been in the home a sufficient period prior to their labor to permit of antisiphilic treatment; three had had no treatment prior to their labor. Of the three new-born with positive reactions, only one came from a mother with a positive reaction; the other two came from others with negative reactions.

This does not indicate that the mothers were free from syphilis, for in several instances a mother's reaction became positive after delivery, whereas it had been persistently negative before. A study of the case histories reveals that frequently a positively reacting mother has a negatively reacting infant, that a negatively reacting mother may have a positively reacting infant, and that a negatively reacting mother may have a negatively reacting infant, when the clinical manifestations would indicate a positive reaction in both. A positively reacting mother with a positively reacting infant is rare; only one such case was found in the 110 pregnancies in which there was reason to believe a large amount of syphilis existed.

#### ILLUSTRATIVE CASES

The following condensed case reports illustrate some of these representative occurrences:

A. A. M. gave a negative reaction, Feb. 25, 1921. April 7, the baby was delivered and gave a positive reaction.

B. P. F. gave a positive reaction, May 13, 1921. August 25 the baby was delivered and gave a negative reaction. After delivery the mother's reaction became negative and remained so.

C. M. A. gave a negative reaction, Dec. 26, 1920. The baby was delivered, Jan. 8, 1921, and gave a negative reaction. February 4, the mother's reaction became positive.

A. G. S. gave a positive reaction, Aug. 6, 1920. The baby was delivered, October 30, and gave a positive reaction. Jan. 7, 1921, the mother's reaction became negative and has remained such.

In several negatively reacting infants of negatively reacting mothers, the clinical signs of hereditary syphilis are present. The infants have the appearance of shriveled old men; their skin is pale, anemic and faded. They are undersized, underweight and ill developed; snuffles makes an early appearance, and this is sometimes followed by gastro-intestinal distur-

bances and skin disorders; in several instances, death has occurred.

#### COMMENT

In attempting to analyze the incidence of syphilis in this group of patients, we are confronted by some old dogmas handed down from a former age before the bacteriology and serology of the disease was understood. Profeta pronounced the law, which bears his name, and which has since been shown to be fallacious, that "children may be born of syphilitic parents and remain healthy and present immunity against syphilis which is absolute or which modifies the syphilis so that it runs a very mild course." And Colles formulated that "a syphilitic child cannot infect its own mother after its birth." Likewise, we talk no longer of a child born of a healthy mother and a syphilitic father. Today the general consensus is that the infection is always conveyed from the mother to the child through the placenta and umbilical vein, the fetus in this way becoming infected with syphilis, which implies that the mother is already infected during the growth of the fetus.

There is another feature that calls for explanation, namely, the low incidence of positive Wassermann reactions in apparently syphilitic infants, because this result is in direct variance with published results, reported by reputable observers. Noguchi<sup>1</sup> reports 100 per cent. positive reactions in four cases of congenital syphilis. Craig<sup>2</sup> reports 82.2 per cent. positive reactions in twenty-five cases. Veeder<sup>3</sup> reports 96 per cent. positive reactions in 128 cases. However, these authors examined the blood of infants and children considerably older than the new-born of this study. Veeder also points out that a number of observers have called attention to the fact that a small percentage of new-born infants give a negative reaction and later a positive, which may be explained on the basis that the infection occurred shortly before or during birth, and that some time must elapse before the formation of the reactive bodies.

Our results are not unlike those reported by De Buys and Loeber,<sup>4</sup> who examined the blood of 106 infants coming to a foundling home, 40 per cent. of which were known to be of illegitimate birth. They performed the luetin and Wassermann reaction simultaneously. The blood was obtained in infants with open fontanels from the longitudinal sinus; when the fontanel was closed, from the veins at the bend of the elbow, and in a few instances from the vein over the inner malleolus. The luetin reaction was positive in seventy-nine infants, whereas the Wassermann reaction was negative in every single case in spite of the fact that there was an abundance of clinical symptomatology indicative of syphilis.

#### SUMMARY

The Wassermann reaction was taken on 248 delinquent girls, whose average age was 16.

Forty six per cent. of them give a positive reaction, indicating a high incidence of syphilis among them.

The blood of 110 mothers in this group of delinquent girls and the blood of their new-born infants was examined serologically.

Twenty per cent. of the mothers give a positive Wassermann reaction, whereas only 2.7 of the new-born give a positive reaction.

Noguchi, Craig and others have reported a very much higher percentage of positive Wassermann reactions than occurred in our series; on the other hand, our results are not unlike those published by De Buys and Loeber.

1. Noguchi: Serum Diagnosis of Syphilis, Philadelphia, J. B. Lippincott Company, 1911, p. 117.

2. Craig: The Wassermann Test, St. Louis, C. V. Mosby Company, 1919, p. 114.

3. Veeder, B. S.: Am. J. M. Sc. 152: 522 (Oct.) 1916.

4. De Buys, L. R., and Loeber, Maud: Study in a Foundling Institution to Determine the Incidence of Congenital Syphilis, J. A. M. A. 73: 1028 (Oct. 4) 1919.



## Miscellany

### MEDICAL IMPRESSIONS OF SOUTH AMERICA

Profound admiration is expressed by William Sharpe (*Med. Rec.* **100**:1062 [Dec. 17] 1921), of the excellent surgical work being carried on in the hospitals in Brazil, Uruguay, Argentina and Chile. Although many of the hospitals are old—in fact, some of them were constructed almost 200 years ago—yet the wards are clean and the patients are as well cared for as is possible, without the assistance of trained nurses (as we here understand that term). In spite of this definite handicap in the operative technic, Sharpe was deeply impressed by the operative ability of the individual surgeon, who, assisted by only one young doctor, would perform most skilfully and rapidly major operations of extreme complexity. The surgery of North America has little to offer these brilliant surgeons in a technical way, although the services of an assistant nurse to take care of the instruments, needles, sponges, etc., would be a great asset in their work. There is one feature, however, in the surgical work of South America that, Sharpe says, is much more advanced than in North America, and this is the skilful use of local anesthesia. It was the exception to see ether or chloroform used as a general anesthetic, even for operations of the character of total laryngectomy, carcinoma of the lower lip with bilateral resection of the cervical glands, thyroidectomy, double inguinal hernia, or posterior gastro-enterostomy for extensive pyloric cancer. Procain is used extensively not only as a local anesthetic but also as a means of spinal anesthesia in abdominal and pelvic operations. In one clinic, an accurate record of more than 5,000 patients does not show one serious complication, of either a local or a permanent general character. Rectal anesthesia is also being successfully used in selected patients. The clinic is not delayed by this extensive use of local anesthesia, in that the assistants and even advanced medical students are instructed in the practical technic, and in this manner there is no long interval between operations. Surgical ability and skill of the younger men is rare in North America because a surgeon cannot develop much operative ability under 40 years of age, owing chiefly to the fact that he has not the control of the patients of a ward, but remains an assistant to the older surgeon until a vacancy occurs, possibly when he is over 45 years of age. This method does not develop surgical ability and originality to the extent that the system used in Argentina and Chile does—where the older surgeons permit their various assistants each to control a ward of from forty to eighty patients for whom the assistant is responsible. The younger group of surgeons develop a surgical technic far superior to that to be observed in a similar group of surgeons in North America. Sharpe also discusses the hospitals and the medical college situation in San Salvador.

### PHYSIOLOGIC IMPORTANCE OF RADIOACTIVITY

The pathologic and therapeutic effects of radioactive substances have attracted so much attention that the question whether they have any physiologic importance has been almost entirely neglected. In 1906, N. R. Campbell discovered the radioactivity of potassium, an element present in every organism. Only a few authors, however (Achalme, Stoklasa and Matousek) have referred to this fact as a possible explanation of the influence of radioactive substances. No real progress was made until Zwaardemaker<sup>1</sup> took up the investigation. The studies were made on a surviving frog's heart perfused by Kronecker's<sup>2</sup> method. A heart which ceased to beat after the potassium was removed from the solution resumed its automatism when the potassium was replaced by

any one of the radioactive substances. But while the ordinary replacements of ions follow the equal molecular weights, potassium was replaced by approximately equally radioactive amounts. The addition of  $3 \times 10^{-12}$  radium per gram of the circulating fluid was found sufficient to maintain the automatism of the heart, for the radioactivity of potassium is low. It consists only of beta and gamma rays, and corresponds to one thousandth of the beta and gamma activity of uranium, which itself equals only one-one millionth of the beta activity of radium. However, the rays of potassium are more penetrating. But, most important of all his findings, not only did the radioactive substances replace potassium, but the rays of radium or mesothorium coming from a capsule outside the heart acted in the same way, so that interesting quantitative determinations could be made. Similar investigations were made on other organs by Zwaardemaker's pupils. Hamburger proved the importance of radioactivity for many tissues, but not for the leukocytes. Among other interesting results, an antagonism between the substances giving roentgen rays and beta rays was found, but both can replace potassium. Zwaardemaker has not, however, considered the purely chemical properties of potassium. R. F. Loeb<sup>3</sup> and Jacques Loeb<sup>4</sup> showed that Zwaardemaker's principle does not apply in the development of eggs of sea urchins, in which potassium can be replaced only by kindred chemical ions without regard to their amount of radioactivity. Moreover, R. F. Loeb believes that the influence of radioactive substances on the heart can be explained by the liberation of oxygen. Yet there remains at least the action on other organs, for instance, the permeability of kidneys for sugar (Hamburger and Brinkman), the antagonistic action of different rays and, the most important fact, that the replacement of potassium is ruled approximately by the amounts of radioactivity in certain cases. While not directly applicable at this time to any practical purpose, these fundamental researches are of the greatest importance in advancing our knowledge of several sciences.

## Book Notices

**SOAPS AND PROTEINS: THEIR COLLOID CHEMISTRY IN THEORY AND PRACTICE.** By Martin H. Fischer, Doctor of Medicine, Eichberg Professor of Physiology in the University of Cincinnati, with the collaboration of George D. McLaughlin, and Marian O. Hooker, Doctor of Medicine. Cloth. Price, \$4 net. Pp. 272, with 114 illustrations. New York: John Wiley & Sons, Inc., 1921.

In this book, depending on the reader's previous impression of him and his works, the author either succumbs to the temptation, or fulfils the promise, involved in the statement in the preface of the third edition of "Oedema and Nephritis" that "the fact that the cellular changes discussed in these pages and characteristic of disease are in essence changes in the colloid state of protoplasm has constituted an ever present temptation to discuss in greater detail the developments of pure colloid chemistry itself and its theoretical deductions." The book is divided into three main parts, of which the first and third are of immediate interest to the investigator in biology and medicine, while the second, "the colloid chemistry of soap manufacture," deals more with the technical problems of industry. While the object of the book is undoubtedly to entrench the author's position with regard to the physical state of protoplasm in health and disease, the first and longest part deals with a subject not directly applicable, namely, the colloid chemistry of soaps. In this chapter the author takes up the water holding power of a series of soaps of the fatty acid series and also of a number of unsaturated acids, like oleic acid, showing that the hydration capacity increases in a given series with the molecular weight, and varies with the metallic radicals combined. The theory of soap gels is considered, and gelation explained as essentially a change from a solution of soap in water to one of water in soap. Salting

1. Zwaardemaker, H.: Ueber die restaurierende Wirkung der Radiumstrahlung auf das durch Kaliumentziehung in seiner Funktion beeintrachtigte isolierte Herz, *Arch. f. d. ges. Physiol.* **169**: 122 (Sept.) 1917.

2. Zwaardemaker, H.: Die Bedeutung des Kaliums im Organismus, *Arch. f. d. ges. Physiol.* **173**: 288, 1919.

3. Loeb, R. F.: Radioactivity and Physiological Action of Potassium, *J. Gen. Physiol.* **3**: 399 (Nov.) 1920.

4. Loeb, Jacques: Chemical Character and Physiological Action of the Potassium Ion, *J. Gen. Physiol.* **3**: 237 (Nov.) 1920.



out is considered a dehydration phenomenon. The washing property of soap is due to its emulsifying capacity for dirt, much more than to alkaline dissociation. In general, electrolytic dissociation and mass action are considered of minor importance in these colloid systems. In Part III the author attempts with more than fair success to show that the points established for the better understood and more easily investigated alkali-fatty-acid mixtures hold also for the more complicated alkali-amino-acid mixtures, that is, proteins. The behavior of egg globulin-water and gelatin-water systems under conditions of reaction change and water concentration is delineated, with the conclusion that these proteins show all the types of hydrophilic colloid systems described for the soaps, these protein-water systems being investigated in the same manner as soaps in Part I, although more briefly. The graphic manner of expressing results, for which Fischer is noted—always more convincing than tabulated figures—is again good. The text leaves sufficient room for argument to those who disagree with this polemic writer. To many it will seem irony, indeed, to be told by this author that their “chemical, electrical, surface tension and adsorption theories of stability in colloid systems are not always wrong, but suffer universally from onesidedness.” On the other hand, in his further development of the concept of free and combined water, as opposed to mere ionic dissociation, in relation to the reaction of a colloidal mixture, the author goes a measurable distance in answering those criticisms of his acid hydration theory which have been based on indicators and observed hydrogen ion concentrations.

STUDIES IN THE HISTORY AND METHOD OF SCIENCE. Edited by Charles Singer. Volume II. Cloth. Price, \$9.50. Pp. 559, with illustrations. New York: Oxford University Press, 1921.

This stately volume is the second to be issued under the distinguished editorship of Dr. Charles Singer, leading medical historian of Great Britain, and professor in the history of medicine at the University College, London. Volume I, which appeared in 1917, was notable for Singer's essay on Saint Hildegard. The present volume is chiefly notable for his essay on Greek science. In addition, he has contributed to this number a chapter entitled “Steps Leading to the Invention of the First Optical Apparatus,” which should be of particular interest to ophthalmologists. Other contributions include an essay by John L. Dreyer on medieval astronomy; by Robert Steele on Roger Bacon and the state of science in the thirteenth century; by Hopstock on Leonardo Da Vinci, first anatomist; by Withington on the priests of Asclepius, and by Cole on the history of anatomic injections. There are also four essays on the history of science, dealing with nonmedical subjects. The volume is excellently printed and lavishly illustrated. There are twenty-five plates taken from early manuscripts, and more than forty cuts in the general text. Editorial notice has been given in THE JOURNAL to Dr. Singer's contrast between Greek and modern science. In this essay the author points out the faults and advantages of modern research methods. He is a man of broad learning and thoroughly interested in the evolution of modern medicine from that of the past. This volume is an important addition to any medical library.

THE PRACTICE OF UROLOGY. A Surgical Treatise on Genito-Urinary Diseases Including Syphilis. By Charles H. Chetwood, M.D., LL.D., F.A.C.S., Visiting Surgeon to Bellevue Hospital. Third edition. Cloth. Price, \$8. Pp. 830, with 310 illustrations. New York: William Wood & Company, 1921.

This is a valuable guide for the student or beginner, but the needs of the specialist, of the surgeon in particular, are rather meagerly treated. The urethroscopic and cystoscopic pictures are not complete. In the chapter on urethral stricture, only trauma and gonorrhea are quoted as etiologic factors, no mention being made of intra-urethral chancre. The eccentric hypertrophy of the bladder as a sequel of obstruction is not mentioned. Exactness of definition is often lacking, for instance: “The pathology of hydrocele is that of the sac, its fluid contents, and the condition of the testicles.” In the chapter on prostatic hypertrophy, the discussion of the fundamental work of Zuckerkandl and Tandler is entirely omitted. In the chapter on renal surgery, the color tests are given an

undue prominence, while the other tests based on physiologic premises are omitted, although those are the tests precisely which furnish information as to how a kidney will stand up under a sudden strain or burden. The syphilographic chapters are condensed into 120 pages.

A TEXT-BOOK OF SURGICAL ANATOMY. By William Francis Campbell, A.B., M.D., F.A.C.S., Surgeon-in-Chief, Trinity Hospital. Third edition. Cloth. Price, \$6 net. Pp. 681, with 325 illustrations. Philadelphia: W. B. Saunders Company, 1921.

The author in his preface to this edition states that “the third edition presents a thoroughly revised text with many new illustrations.” There are six new illustrations and six more pages of text in the new edition, all but about thirty pages remaining exactly the same as in the two previous editions. It is up to the standard of the other editions, with additional features pertaining to the hand and wrist, the abdomen and the feet. Many of the illustrations are from drawings superimposed on photographs, which give realistic relations. The conventional division into six parts—on the head and neck, the thorax, the upper extremity, the abdomen and pelvis, the spine, and the lower extremity—is followed in all three editions. The contents are well selected, the language is clear and the paragraphs are short, making it a very practical and readable book.

THE LIFE OF JACOB HENLE. By Victor Robinson, M.D. Boards. Price, \$3. Pp. 117, with 4 illustrations. New York: Medical Life Company, 1921.

Jacob Henle was of the great anatomists. He founded our knowledge of the epithelial tissues; he discovered the presence of smooth muscle in the smaller arteries, and his name is associated with many structures that he first described, as, for instance, Henle's tubules of the kidney, and Henle's glands. Through the *Zeitschrift für rationelle medizin* (1842-1869), which he founded with Pfeufer, he exerted a wholesome influence on German medicine. His large handbook of systematic anatomy is one of the anatomic classics. He was one of Koch's teachers, and his wonderfully clear statement in 1840 of the conception of living contagion may have influenced Koch to become interested in the problems of infection. Henle was a skilful artist and musician, an inspiring teacher, loved and admired by students, and the friend of many of the great scientists and artists of his home. Dr. Henle's life, his remarkable career as student and professor-scientist is sketched in an interesting manner. The style is journalistic, rather than that of the medical historian.

L'INFECTION MÉNINGOCOCCIQUE. Par le Dr. Ch. Dopter, Professeur à l'École du Val-de-Grace. Paper. Price, 48 francs. Pp. 536, with 99 illustrations. Paris: Librairie J.-B. Baillière & Fils, 1921.

The title of meningococcal infection and not epidemic meningitis has been chosen because we know now that the effects of the meningococcus are not limited to the leptomeninges, as formerly believed. The meningococcus may produce a great variety of lesions in other parts of the body which may precede, accompany or succeed the meningitis. Indeed, meningitis may be absent in rare cases of meningococcus infection. The author, who first showed that there are distinct varieties of meningococci, presents a thorough study of all phases of meningococcal infection—epidemiologic, etiologic, anatomic, clinical and therapeutic—and the book is a valuable addition to the literature of the disease with which it deals.

ELEMENTOS DE FÍSICA. Por Walter Guttman, Subinspector de Primera Clase de la Reserva en la Academia de Medicina Militar del Kaiser Guillermo. Traducido de la Vigésima Edición Alemana por Julio Palacios Martínez, Catedrático de Termología de la Universidad Central. Paper. Price, 12 pesetas. Pp. 243, with 185 illustrations. Madrid: Calpe, 1921.

This is a Spanish translation of the twentieth German edition of Guttman's well known book on elementary physics, intended especially for physicians and pharmacists. The text fulfils the author's purpose of “setting out the most important laws and facts of physics, briefly, clearly and understandably.” The twelve page appendix, with its brief summary of important definitions, laws and formulas is most valuable.



## Medicolegal

### Infection from Laceration from Catheter Accidental

(*Frommelt v. Travelers Insurance Co. (Minn.)*, 184 N. W. R. 565)

The Supreme Court of Minnesota, in affirming a judgment for the plaintiff on a policy of accident insurance issued to her husband, says that the insurance was against loss resulting from "external, violent and accidental means." It appeared that at about 1 a. m. on the 16th of the month the insured was, without premonition, taken sick at his home. He was suffering from a stricture of the urethra, which prevented urination. A physician was called and arrived at 7 a. m. The evidence was in conflict, but there was competent evidence that, in passing a metal catheter through the urethra, the physician caused a severe laceration. No relief was afforded. At 11 a. m., a trocar was passed into the bladder through an incision below the umbilicus and by this means the bladder was drained. At 3 p. m., the perineal operation, which consisted of an incision at the point of obstruction and the insertion of a drainage tube through the urethra into the bladder, was performed. The patient grew rapidly worse and died on the 23d. The testimony for the plaintiff consisted of her own testimony, giving the history of the case and the symptoms shown, and the testimony of two physicians who performed a necropsy five months later. The two physicians gave the opinion that an infection set in in the urethra, worked up to the kidneys and caused death. If this infection was caused by the laceration from the use of the catheter at 7 a. m., on the 16th, it might fairly be said to be the result of accident. If arising from one of the operations later in the day, it could not be said to be accidental. One of the physicians who performed the necropsy gave the opinion that the infection was the result of the laceration. As basis in part for his opinion, he indicated that it was probable from the symptoms and facts developed that infection set in very early; that there were indications that it had set in before the operation in the afternoon, and that there was much greater probability of infection from a laceration caused by a catheter at a point within the body, where there had been no cleansing or sterilization, than by an operation with a knife in the hands of an experienced surgeon, and at a point where cleansing and sterilization were easy. The court thinks the evidence sustained a finding of accidental death. But the policy covered only cases of loss through external, violent and accidental means "independently of all other causes," and by its terms excluded cases of death or other loss caused wholly or partly by bodily infirmity. The defendant contended that the other of the two physicians who performed the necropsy admitted that death was due partly to preexisting disease, not to the stricture, but to a subacute nephritis. This question was submitted to the jury, which by its verdict decided it adversely to the defendant; and the court is of the opinion that the finding should not be disturbed. If the physician's testimony contained the admission contended for, the admission of that one witness would not conclude the plaintiff, while the court cannot be certain that he intended an opinion that the insured had preexisting nephritis. This question was properly submitted to the jury.

### Tuberculosis Sanatorium in Residential District

(*Brink et al. v. Shepard (Mich.)*, 184 N. W. R. 404)

The Supreme Court of Michigan, in affirming a decree for the plaintiffs enjoining the defendant from conducting a sanatorium for the treatment of tuberculosis, in a residential district, says that it is persuaded that, under the former holdings of this court, the plaintiffs were entitled to such relief. The testimony was quite persuasive that the institution, if properly conducted, would cause no actual danger to nearby residents; that there was little or no danger of communicating disease such a distance as intervened between the plaintiffs' residences and the defendant's institution; but the fear of the disease was present. The record disclosed that in Michigan tuberculosis stands at the head of diseases in the toll it annually collects. The record like-

wise disclosed the herculean efforts of the medical profession and the antituberculosis societies to alleviate this condition. Circulars had been sent out, advice had been given, preventive measures had been advocated and adopted, and much had been accomplished. The public had been advised of its ravages and had a well-grounded fear of its effect. It is a communicable disease as a matter of fact and is so declared to be by Section 5099 to the Compiled Laws of Michigan of 1915. The maintenance of a hospital for the treatment of this communicable disease in a strictly residential district could not fail to deprive residents of nearby homes of the comfort, well-being, and enjoyment to which they were entitled, and this, coupled with their financial loss, justified an appeal to a court of equity for relief. Nor did the plaintiffs lose their rights because this proceeding was not launched until something like a year after the defendant had commenced the operation of the sanatorium, inasmuch as during that time the plaintiffs did not have definite, positive proof of the character of the institution and that the defendant was conducting a tuberculosis sanatorium.

### Liability for Injury to Child Born in Hospital

(*Ford Hospital v. Fidelity & Casualty Co. et al. (Neb.)*, 183 N. W. R. 656. *Weston's Administratrix v. Hospital of St. Vincent of Paul (Va.)*, 107 S. E. R. 785)

The Supreme Court of Nebraska, in affirming a judgment in favor of the Ford Hospital against an insurer, in consequence of a child's having recovered judgment against the hospital company for \$5,500 damages for injuries, says that the child was born in the hospital, August 16, while its mother was an inmate and a patient there for the purposes of accouchement. Within two or three weeks, the mother went home, taking the child with her, but she returned alone to the hospital from time to time for the temporary treatment of ailments resulting from conditions attending childbirth. For this purpose, she returned to the hospital, November 7, but she was detained until the next day on account of having to undergo an operation. In the meantime the child was brought to her for nourishment and was left in the exclusive care of the hospital. While a hospital nurse, in the performance of her duties, pursuant to a rule of the hospital, was giving the child a bath, November 8, its left hand, through the negligence or the mistake of the nurse, came in contact with a hot appliance and was severely burned; and it was for the injuries thus inflicted that the judgment was recovered. The insurer contended that, within the meaning of its policy, the child was a mere licensee when injured; was not a "patient"; and was not receiving "hospital treatment." But the court holds otherwise. The hospital had a department for obstetrics. In that department, the mother was both an inmate and a patient. The child was expected. It was born helpless. It had the same right to room and care as the mother, and was not a mere licensee. Both mother and child were under the care of hospital nurses. The liability of the hospital for mistakes or negligence in "hospital treatment" extended to both. These conditions and relations were obvious in a hospital with a department equipped for obstetrics. Accouchement included the right of the mother to return for any hospital treatment required as a result of conditions attending childbirth, and compensation for room and services to her included the care of the child in the meantime while necessarily in the hospital. These conditions and relations existed when the child was injured. Both were then under the care of hospital nurses. A rule of the hospital required a bath for the child. When given, it was "hospital treatment" within the fair import of that term as used in the insurance policy. For the purpose of hospital care, while the mother was in charge of hospital nurses, the helpless child was both an "inmate" and a "patient" when being bathed by a hospital nurse in compliance with an established rule. Pecuniary gain is not the sole aim of a modern hospital equipped for obstetrics. It has a mission requiring a degree of care prompted by the ordinary dictates of humanity.

The Supreme Court of Appeals of Virginia had a case in which a child, immediately on birth, was delivered to the night nurse on that hall, and was given the treatment usually given in such cases, that is, it was placed in a basket on a



sterile towel, with a little blanket folded over it, with a hot water bottle next to these coverings. The towel and the blanket were between the baby and the hot water bottle; but when the baby was taken up at the usual time thereafter to be bathed and dressed, it was found to be so badly burned by the hot water bottle that it died of the burns in the course of a week. But the Hospital of St. Vincent of Paul was a charitable institution; and the court holds that the duty which it owed to the child was the exercise of due care in the selection and retention of the nurse in charge of the patient; that negligence in respect of this duty had not been shown, and, consequently, that no error was committed in sustaining a demurrer to the evidence of the plaintiff and rendering judgment for the defendant. The father of the child engaged the room, board, nursing, etc., for the prospective mother, and the latter voluntarily entered the hospital pursuant to such engagement, and submitted to its care and treatment, and they thereby assumed the risk for the child as well as for the mother.

#### Extra Compensation for Company Physician

(*Woodward Iron Co. v. Dabney (Ala.)*, 88 So. R. 873)

The Supreme Court of Alabama, in affirming a judgment in favor of plaintiff Dabney, says that he sued to recover reasonable compensation for operations performed on two employees of the defendant company, who were injured and received first medical and surgical attention at Dolomite, while he was the company physician at Vanderbilt. The defendant contended that the plaintiff was required by the terms of his employment to operate on or treat patients as the occasion required, whether they received injuries at Vanderbilt or elsewhere. He denied this. His testimony tended to show that during the five years of his employment by the defendant he had not treated employees of the company other than those who worked at Vanderbilt, who paid for his services by the company collecting a designated sum of money for "medical services" required or desired by them, and that he had never been called on to treat other employees, with the exception of the ones in question. The treatment of the latter was turned over to him by the assistant physician at Dolomite, who testified that he had no authority (on his own initiative) to employ any other physicians for the company at that or other points, but that he had discussed these cases with the superior executive officers of the company, though he did not inform them that the plaintiff was going to make a charge for the services he rendered these men, while, on cross-examination, he stated that the vice president of the company said he was not willing to pay a large sum for the operation on the man first injured, and it was understood that the assistant physician at Dolomite had authority from the vice president to employ somebody else at a reasonable price to assist or render the necessary medical and surgical aid. The court thinks that a jury question was presented as to the company's liability for the medical and surgical treatment of that man by the plaintiff; and that the assistant physician having been held out as the company's agent, to transfer an injured employee to the Birmingham hospital and place his operation and treatment in the hands of the plaintiff and another physician was a declaration or ratification of the authority of the assistant physician at Dolomite to transfer a patient from there to Birmingham for medical or surgical attention that could not be given at Dolomite, and of the transfer of the second man from the point where he received first aid to the hospital in Birmingham. If the defendant company was in duty bound to extend medical and surgical aid to this second man before and after his removal from Dolomite, it could not terminate or discharge that duty by his delivery to the Birmingham hospital through its agent and resident physician at Dolomite. That physician, as its physician having the patient in charge, was its agent in the transfer from the point of first treatment to the hospital; and, by the same token, the care of the patient was transferred from such physician to the plaintiff. The duty, if it existed, of furnishing other and further surgical or medical attention to the patient still lay on the defendant, which was discharging that duty through the plaintiff to the injured employee. Therefore, the liability of the defendant to the plaintiff was dependent on the extent

of the company's contract with him as its physician and surgeon at its Vanderbilt furnace, as to whether this contract extended to the care and treatment of employees in Birmingham hospitals who were not injured or sickened at Vanderbilt furnace but at other points of the defendant's activities. The jury was properly instructed that the plaintiff discharged the burden on him when he showed to the reasonable satisfaction of the jury that he treated the defendant's employees at its request, and was under no legal obligation to treat them without additional charge and did not agree to do so, if the jury was reasonably satisfied from the evidence that he did show this. Evidence of the custom prevailing at the Vanderbilt furnace at the time of the treatment of these patients, as relating to the treatment of men from other plants of the company, was competent and relevant.

#### Duty of Injured Persons in Selecting Physicians

(*McIntosh v. Atchison, T. & S. F. Ry. Co. (Kan.)*, 198 Pac. R. 1084)

The Supreme Court of Kansas approves, in this personal injury case, an instruction which told the jury, among other things, that a person injured by the negligent acts of another does not insure that the surgeons, doctors, or nurses employed by him will be guilty of no negligence, want of care or skill, or error in judgment. The liability to a mistake in judgment, or in the efforts or means used in an endeavor to effect a cure or to remedy a condition, is an incident to the original injury, and, the injured party having used ordinary care in the selection of attendants, the injury resulting from such mistake is in law regarded as one of the immediate and direct damages resulting from the injury. A person injured by the negligence or wrong of another is entitled, the supreme court says, to recover from the wrongdoer the damages which naturally result from the wrong. It is the duty of a person injured through the negligence of another to use ordinary and reasonable diligence in securing medical or surgical aid, and he cannot recover for suffering or ailment due to his own want of such diligence. In that respect, he is only required to do what a reasonable person would do under the circumstances. If he exercises that degree of care in the selection of physicians or surgeons, their mistakes or lack of skill in treatments or operations which aggravate or increase his injuries cannot be counted as the fault of the injured person, but are regarded by the law as a part of the original injuries for which the wrongdoer is responsible, and is a result which reasonably ought to have been anticipated by him. However, if the original injury is aggravated by the failure of the injured person to exercise reasonable care in obtaining medical aid or surgical assistance, or in failing to follow the advice or instructions of the physicians or surgeons, the enhanced damages are to be excluded from the recovery.

#### Waiver of Privilege by Wife as Against Husband

(*McCarthy v. McCarthy (Wash.)*, 199 Pac. R. 733)

The Supreme Court of Washington says that in this suit for divorce brought by the wife, she introduced the testimony of the family physician to the effect that the defendant had inquired of him concerning her chastity, and as to what physical examinations made by the witness indicated in that respect. To this testimony the defendant objected on the ground that it was privileged and within the statute. He did not cite any authorities in support of his argument, nor does the court believe there are any. The wife might have claimed the privilege under the statute; but she alone could do it, and, she having waived it, the defendant could not claim it.

## Society Proceedings

#### COMING MEETINGS

Conference on Medical Education, Hospitals and Public Health, American Medical Association, Chicago, March 6-10.  
Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.  
Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Medical Sciences, Philadelphia

January, 1922, 163, No. 1

- \*Kidney Function. A. N. Richards, Philadelphia.—p. 1.  
Quantitative Variations in Vibration Sensation. E. J. Wood, Wilmington, N. C.—p. 19.  
Peripheral and Radicular Types of Epidemic Encephalitis. F. Kennedy, New York.—p. 30.  
\*Blood Sugar Tolerance Test as an Aid in Diagnosis of Gastro-intestinal Cancer. J. Friedenwald and G. H. Grove, Baltimore.—p. 33.  
\*Symptoms of Appendicitis in Acute Pericarditis. M. H. Fussell and J. A. Kay, Philadelphia.—p. 40.  
\*Pericarditis in Chronic Nephritis. A. L. Barach, New York.—p. 44.  
Biliary Tract Disease: Some Lessons Learned from Duodenobiliary Drainage. Future Problems. Citation of Cases. B. B. V. Lyon, H. J. Bartle and R. T. Ellison, Philadelphia.—p. 60.  
Visceral Adhesions and Bands; Normal Incidence. J. Bryant, Boston.—p. 75.  
Cervical Rib, Report of Two Cases. P. C. Colonna, Richmond, Va.—p. 80.  
\*Skin Tests with Foreign Proteins in Various Conditions. F. M. Rackemann, Boston.—p. 87.  
Enzyme Mobilization by Means of Roentgen-Ray Stimulation. W. F. Petersen and C. C. Saelhof, Chicago.—p. 101.  
\*Relation of Pituitary Gland to Epilepsy. P. S. Lowenstein, St. Louis.—p. 120.

#### Circulation in Glomerulus Index of Kidney Function.—

Many observations made by Richards on the effects of certain measures on the circulation in the glomerulus have led him to the conclusion that even under the most favorable of operative conditions, i. e., with the least loss of blood, all the glomeruli of the kidney of the frog do not receive blood simultaneously. Conditions which depress the circulation, such as blood loss or destruction of the cord, or agencies which constrict blood vessels in the kidney, such as constrictor doses of epinephrin or pituitary extract, lessen the number of glomeruli which receive blood. Not only is the number of glomeruli showing active circulation altered but also the number of capillary loops within a single glomerulus which take part in the capillary blood flow. The dilator agencies, urea, caffeine, etc., have the power of transforming a glomerulus of the latter type into one of the former. Epinephrin, on the other hand, in constrictor dosage transforms a glomerulus showing a multiplicity of channels with rapid flow into one with fewer patent capillary loops and slow flow. Making the assumption that these observations are applicable to the mammalian kidney, gives a conception of glomerular circulation different from that previously held. It is not difficult to understand how relatively enormous changes can take place in glomerular blood flow without correspondingly great changes in the size of the kidneys as registered by the oncometer, for obviously the capsule does not collapse when flow through the tuft ceases. It becomes easier to understand how a kidney might eliminate from blood of the same composition, for a urine issuing as the result of highly active blood flow and high glomerular pressure in a smaller number of glomeruli must be different from that which issues as the result of slower blood flow and lower glomerular pressure from a larger number of glomeruli. The resorptive powers of the tubules would be effective to different degrees.

**Blood Sugar Tolerance in Gastro-Intestinal Cancer.**—Of seventy-five cases of cancer of the gastro-intestinal tract in which the blood sugar tolerance was determined by Friedenwald and Grove, seventy-two responded positively to the test, so that its value as a diagnostic measure is great when taken in consideration with clinical evidence.

**Appendicitis in Acute Pericarditis.**—Fussell and Kay have seen three cases of acute pericarditis in children: one with a purulent exudate, and the other two apparently without pericardial effusion, which were positively diagnosed appendicitis. In one of these an operation was ordered, but was not performed.

**Pericarditis in Chronic Nephritis.**—A description is given by Barach of the clinical and laboratory characteristics of a group of thirty cases of chronic nephritis at the time of

development of an acute pericarditis. A marked nitrogen retention in the blood, a constantly present acidosis, a high blood pressure, severe secondary anemia and a tendency to hemorrhage were conspicuous features. It is pointed out that pericarditis is not a terminal complication in the sense that it always terminates the life of the patient. The average duration of life after the onset of the pericarditis was twenty-nine days. Excluding a patient who lived one year thereafter the average figure was sixteen days. Death in many of these cases did not seem linked with an advancing heart failure or to the acidosis, but rather to the progressive retention of nitrogen in the blood. Except in one case the diagnosis was made by the presence of pericardial friction and not by the signs of effusion. The diagnosis was made clinically in 90 per cent. of the cases. In four cases direct culture of the pericardium yielded pyogenic organisms. Reasons are given for believing that the majority of cases of pericarditis in chronic nephritis are of noninfectious origin.

**Skin Tests with Foreign Proteins.**—Skin tests with foreign proteins were made by Rackeman on 939 patients presenting various clinical conditions. Fifteen or more different substances were used in each case of hay-fever (simple) cases, 42 per cent. were positive; asthma all causes, 30 per cent.; dust and food asthma, 100 per cent. Aside from its use in diagnosis the skin test is of use in the treatment of such conditions as hay-fever in order to determine the dilution of pollen extract to use at the start. Clinically, at least, positive tests should be taken seriously only in case they are compatible with the patient's history or in case further study and clinical experiment can prove their importance as an etiologic factor.

**Relation of Pituitary Gland to Epilepsy.**—Sixteen cases, representing all types and degrees of presumed epileptic convulsions without regard to any presupposed etiologic factors except tumors were investigated and the results are given by Lowenstein. Five cases were apparently benefited by pituitary gland administration. The preferable product seemed to be the extract of the whole gland, and the most satisfactory mode of treatment was hypodermically. No cases showing the "typical epileptic constitution" were benefited. There was no improvement in those patients with abnormalities of the fundi or visual fields. Neither physical signs referable to the hypophysis, mental reactions (except the "typical epileptic constitution"), changes in the sella turcica demonstrable by the roentgen rays or variations in weight or health offered any criteria by which the relative degree of success or failure of the treatment could be predicted.

#### American Journal of Ophthalmology, Chicago

January, 1922, 5, No. 1

- Hole in Macular Region of Both Eyes Due to Simultaneous Injury. T. M. Li, Peking, China.—p. 1.  
\*Treatment of Tumors of Hypophysis. J. Fejer, Budapest, Hungary.—p. 5.  
Classification of Corneal Affections. F. P. Calhoun, Atlanta, Ga.—p. 8.  
Destructive Tuberculosis in Eye of Child. H. R. Stilwell, Denver, Colo.—p. 14.  
Asthenopia with Tuberculosis. A. C. Magruder, Colorado Springs, Colo.—p. 16.  
\*Ocular Symptoms of Epidemic Encephalitis. M. L. Foster, New Rochelle, N. Y.—p. 20.  
Melanosarcoma of Choroid. L. Levy, Memphis, Tenn.—p. 24.  
Meibomian Seborrhoea. H. W. Cowper, Buffalo, N. Y.—p. 25.  
\*Certain Appearances Observed in Eyeground of Tuberculous. J. A. Patterson, Colorado Springs, Colo.—p. 30.  
Disciform Keratitis Following Smallpox. C. L. Smith, Independence, Kan.—p. 32.  
Removal of Cinder from Anterior Chamber. H. W. Scarlett, Philadelphia.—p. 35.  
Permanent Vascularization Following Parenchymatous Keratitis. R. Von Der Heydt, Chicago.—p. 35.  
New Trial Frame. M. E. Smukler, Philadelphia.—p. 36.  
Case of Sympathetic Ophthalmia. C. McClelland, Detroit, Mich.—p. 38.

**Roentgen Ray in Hypophysis Tumors.**—Fejer reports two cases of hypophysis tumor in which marked subjective improvement, especially with regard to vision, followed treatment with the roentgen ray.

**Eye Symptoms of Epidemic Encephalitis.**—Foster records two cases in which careful note was made of all the eye symptoms manifested. Two points are emphasized: (1) The observation of the nurse that the appearance of a ptosis



seemed to be a precursor of an onset of drowsiness; (2) insensitiveness of the cornea.

**Tortuosity of Retinal Vessels in Tuberculosis.**—Patterson has observed a special fullness and tortuosity of the retinal vessels in patients suffering from tuberculosis, and those whose family history included cases of this disease. No heart lesions were present in these patients.

### American Journal of Public Health, Chicago

January, 1922, 12, No. 1

- Half Century of Public Health. S. Smith.—p. 3.  
First Report of Committee on Municipal Health Department Practice of American Public Health Association, November, 1921.—p. 7.  
Influence of Sanitary Engineering on Public Health. G. W. Fuller, New York.—p. 16.  
Wider Development of Standard Methods. R. G. Perkins, Cleveland.—p. 23.  
Opportunities of Vital Statisticians. W. A. Plecker, Richmond, Va.—p. 30.  
Hygiene of Cardiac Children. C. H. Smith, New York.—p. 35.  
Practical Means of Reducing Maternal Mortality. R. W. Lobenstine, New York City.—p. 39.  
Proper Size of Sand for Rapid Sand Filters. W. H. Dittoe.—p. 44.  
Botulism from Regulatory Viewpoint. C. Thom, Washington, D. C.—p. 49.

### Archives of Dermatology and Syphilology, Chicago

February, 1922, 5, No. 2

- \*Diagnosis of Some Eruptions on Hands and Feet. C. M. Williams, New York.—p. 161.  
Ringworm of Hands and Feet. J. H. Mitchell, Chicago.—p. 174.  
\*Subcutaneous Fibroid Syphilomas of Elbows and Knees. H. Fox, New York.—p. 198.  
\*Incidence of Positive Wassermann Reactions in Four Hundred and Eighty-Four Supposedly Nonsyphilitic Patients. R. A. Kilduffe, Pittsburgh.—p. 207.  
Globulin Content of Blood Serum in Syphilis. M. E. Bircher and A. R. McFarland, Rochester, Minn.—p. 215.

**Epidermophyton Eruption on Hands and Feet.**—Cases are cited by Williams in which the lesions consisted of a well defined group of eruptions on the feet, occurring often as a complication of tinea cruris, in which a mycotic organism can usually be demonstrated, and this organism is often the epidermophyton. A somewhat similar group of eruptions occurs on the hands, but it is more variable and the demonstration of a parasite is much more difficult.

**Syphilomas on Elbows and Knees.**—A rare manifestation of late syphilis is described by Fox in the case of a negress, aged 45. Undoubted evidence of syphilis was shown by a circinate group of nodules on one arm and the four plus Wassermann reaction. On both elbows and knees were extremely hard, painless, subcutaneous nodules which had appeared two years previously and remained unchanged during this time. They had no apparent relation to the bursae. A histologic examination of one of the lesions showed a dense fibrous gumma. Two other similar cases from the literature are quoted at some length. The similarity of juxta-articular nodules is discussed.

**Wassermann Reaction of Nonsyphilitics.**—The results of 567 Wassermann tests on 484 unselected patients admitted to hospital are reported by Kilduffe. Approximately 12 per cent. of positive reactions were obtained; in twenty of the fifty-seven cases in which the patients reacted positively, there were either clinical or historical findings to corroborate the results of the Wassermann test.

### Archives of Neurology and Psychiatry, Chicago

February, 1922, 7, No. 2

- Multiple Cerebral Tubercles (Two Cases). G. Fumarola.—p. 154.  
Study of Internal Stigmas of Degeneration in Relation to Metabolism and Disturbance of the Cerebral Cortex in Children. E. R. Jatho and S. D. Ludlum, Philadelphia.—p. 167.  
\*Pathology of Choroid Plexus in General Paralysis. A. E. Taft, Boston.  
Mental Pathology of Races in United States. P. Bailey, New York.—p. 183.  
\*Involvement of Peripheral Neurons in Diabetes Mellitus. W. M. Kraus, New York.—p. 202.  
Equilibration and Vestibular Apparatus. T. H. Weisenburg, Philadelphia.—p. 210.  
Factors Inhibiting Return of Motor Function Following Nerve Injuries. K. W. Ney, New York.—p. 220.  
\*Colloidal Gold Chlorid Curve in Epidemic Encephalitis. K. M. Howell, Chicago.—p. 229.  
Review of Recent Literature on Neurosyphilis. H. C. Solomon, Boston.—p. 235.

**Pathology of Choroid Plexus in General Paralysis.**—In the sections studied by Taft a progressive fibrous change was traced, beginning with general increase of connective tissue, followed by obliteration of capillaries, with formation of fibrous tufts, in which calcium salts are deposited, and final cystic condition of the plexus. At this stage the capillaries have entirely disappeared, but the ependymal cells remain and are little changed morphologically.

**Involvement of Peripheral Neurons in Diabetes.**—Analysis of the records of others and Kraus' own experience with diabetes indicate involvement of the motor cells and roots or of the intramedullary portions of the sensory roots and their continuance within the spinal cord. Its analogues, the mid-brain, pons and medulla, may be affected similarly. Both motor and sensory involvement may occur at the same time. Satisfactory clinical evidence of primary extramedullary involvement of the peripheral neurons, that is, peripheral neuritis, has not been obtained, either from a review of the clinical and pathologic reports in the literature or from experience.

**Colloidal Gold Chlorid Curve in Epidemic Encephalitis.**—No characteristic colloidal gold chlorid curve was obtained by Howell with cerebrospinal fluids in epidemic encephalitis. When there was a color change, it occurred in the lower spinal fluid dilutions (syphilitic zone). This result agrees with those in the recent publications of Davis and Kraus, Happ and Mason, and Neal. There was no relation between the colloidal gold chlorid reaction and the duration of the disease. The colloidal gold chlorid curve apparently was not influenced by the total cell count, nor by the polymorphonuclear or mononuclear leukocytic percentages. The colloidal gold curve did not depend on the globulin content of the fluids. There was no relationship between the colloidal gold chlorid reaction and the colloidal benzoin precipitation reaction. The Wassermann reaction with all fluids was negative. Spinal fluid from a patient with epidemic encephalitis may give a typical paretic curve with colloidal gold chlorid when there are no symptoms or history of syphilis.

### Archives of Ophthalmology, New Rochelle, N. Y.

January, 1922, 51, No. 1

- Double Luxation of Eyeballs in Exophthalmic Goiter. W. R. Parker, Detroit.—p. 1.  
Relation of Headache to Functional Monocularity. A. C. Snell, Rochester, N. Y.—p. 5.  
Trephining Cornea for Relief of Glaucoma. F. Tooke, Montreal.—p. 14.  
Presbyopia. E. Fuchs, Vienna.—p. 21.  
Differential Pupilloscopy. O. Barkan, San Francisco.—p. 29.  
Early Cataract (Senile), Ptosis and After-Cataract. H. Smith, London, England.—p. 40.  
Diagnosis and Treatment of Congenital Syphilis. P. G. Doyne, London.—p. 47.

### Boston Medical and Surgical Journal

Jan. 26, 1922, 186, No. 4

- Treatment of Carcinoma of Prostate. J. H. Cunningham, Boston.—p. 99.  
\*Cesarean Section. J. M. Birnie, Springfield, Mass.—p. 105.  
Jejunostomy. I. J. Walker, Boston.—p. 108.  
Cesarean Section: Death on Tenth Day from Cerebral Hemorrhage. R. S. Titus, Boston.—p. 111.  
Tribute to Pioneer in Modern Pathology. J. C. Warren and S. J. Mixter, Boston.—p. 113.  
Responsibility for Diphtheria. J. Barland, Boston.—p. 115.

**Cesarean Section.**—In the past twelve and one-half years, 217 cesarean sections were performed in the five hospitals of Springfield. Two of these were done by surgeons from a distance, so have been excluded from analysis, leaving a series of 215 cases. During this same period there have been, in Springfield, 39,069 deliveries, making an incident of cesarean section of one in 180 cases. In 20,000 cases at the Sloan Maternity the incident was one in 133. The maternal mortality in the Springfield series of 215 cases was 11 per cent. The fetal mortality was 20.5. The cases were not selected, in fact many of them were contraindicated if one holds strictly to the idea that cesarean section should not be performed on a woman who has had frequent vaginal examinations or attempts at delivery. The maternal mortality varied widely in the different hospitals. In one hospital there were thirty-nine sections, and in another forty-one. The maternal mortality in the first hospital was 20.5 per cent., and in the second hospital, 4.8 per cent. The fetal mortality



in the first was 20.5 per cent., and in the second 17 per cent. The mortality in the other hospitals varied between these two extremes. Section was performed for the following conditions: Contracted or deformed pelvis, 64 cases; toxemia, 53 cases; placenta previa, 39 cases; uterine inertia, 22 cases; breech presentation, cervical scar tissue and previous cesarean section, 4 cases each; aged primipara, 3 cases; transverse presentation and bicornate uterus, 2 cases each; face presentation, brow presentation and hydrocephalus, 1 case each. The maternal mortality in the toxemia cases was 24.5 per cent.; fetal mortality, 21.8 per cent.

Feb. 2, 1922, 186, No. 5

Baroness Von Olnhausen. A. Worcester, Waltham, Mass.—p. 135.

\*Recurrent Inguinal Hernia. R. W. French, Fall River, Mass.—p. 138.

\*Fracture and Dislocation of Cervical Vertebrae without Paralysis.

Report of Case. W. E. Hartshorn, New Haven, Conn.—p. 141.

Progress in Surgery. E. H. Risley, Waterville, Me.—p. 144.

**Recurrent Inguinal Hernia.**—The causes of the recurrence of an inguinal hernia are summarized by French as follows: (1) tension of the sutures; (2) impaired innervation; (3) infection; (4) failure to approximate the internal oblique and Poupart's ligament sufficiently low; (5) leaving the internal ring too large; (6) failure to recognize a direct hernia during an operation for the indirect type.

**Fracture and Dislocation of Cervical Vertebrae Without Paralysis.**—Hartshorn reports a case of comminuted fracture of the second and third cervical vertebrae with anterior dislocation of the first, second and third the result of being hit by locomotive while walking on railroad tracks. No paralyses were present at any time. Moderate traction was applied in order to secure proper splinting of the head and neck. Extension was carried over the head of the bed. Moderate rigidity of the head and neck was secured by sandbags. On leaving bed, a mechanical support was applied. Six months after discharge: no paralysis; no secondary neuralgias; marked stiffness of neck.

### Canadian Journal of Mental Hygiene, Montreal

October, 1921, 3, No. 3

Present Day Aspect of Canadian Medical Jurisprudence. E. W. Ryan, Kingston, Ont.—p. 221.

Problem of Feeble-minded in South Africa. J. T. Dunston.—p. 229.

Mental Outpatient Clinic—Whom Does It Help? E. S. Abbot.—p. 239.

Mental Disturbances of Childhood. H. B. Moyle, Mimico, Ont.—p. 249.

Relation of General Medicine to Mental Medicine. A. T. Mathers, Winnipeg, Man.—p. 259.

Gifted Child. W. D. Tait.—p. 265.

Juvenile Courts in Canada. G. S. Mundie, Montreal.—p. 275.

### Georgia Medical Association Journal, Atlanta

January, 1922, 11, No. 1

Management of Certain Types of Malignancies. J. W. Landham, Atlanta.—p. 1.

Syphilis Among Insane. G. L. Echols, Milledgeville.—p. 8.

Our Milk Problem. L. Gerdine, Athens.—p. 12.

Cholecystectomy. H. R. Donaldson, Atlanta.—p. 17.

Acute Inflammation of Middle Ear in Infants. E. S. Colvin, Atlanta.—p. 18.

Hippocrates. H. C. Hardegree, Atlanta.—p. 21.

Some Aspects of Endocrine Therapy. A. B. Patton, Athens.—p. 23.

### Journal of Bone and Joint Surgery, Boston

January, 1922, 4, No. 1

Army Experiences with Tendon Transference. C. L. Starr, Toronto, Can.—p. 3.

Amyotonia Congenita: Report of Case. C. A. Stone, St. Louis.—p. 21.

\*Treatment of Tuberculosis of Ankle in Adult. J. Calvé, Berck-Plage, France.—p. 33.

Treatment of Paralytic Flat Feet. L. Mayer, New York.—p. 39.

Osteitis Deformans (Paget's Disease); Report of Three Cases. P. Lewin, Chicago.—p. 45.

\*Chronic Osteomyelitis Secondary to Compound Fracture. T. S. Mebane, Ft. Sheridan, Ill.—p. 67.

\*Malformation of Carpus. J. Eaves and P. Campiche, San Francisco.—p. 78.

\*Fracture of Spine: Report of Cases. S. Kleinberg, New York.—p. 80.

Delayed Union and Non-Union of Fractures. J. A. Nutter, Montreal, Can.—p. 104.

\*Reconstruction of Internal Lateral Ligament of Knee Joint. J. C. Wilson, Los Angeles.—p. 129.

**Treatment of Tuberculosis of Ankle.**—Of the thirty different approaches to the ankle joint referred to by Calvé the Kocher method appears to be the most generally applicable and has been the method employed in the cases reported by Calvé.

**Treatment of Chronic Osteomyelitis.**—The results obtained and the methods employed in the treatment of 359 such cases are analyzed by Mebane. Thirty-three, or approximately 10 per cent., were unhealed after two years of hospital treatment. Chronic osteomyelitis of spongy bone, i. e., of the epiphysis of long bones, carpal and tarsal bones, is more difficult to cure than osteomyelitis of compact bone of the shafts. Extensive tarsal involvement, where healing has not occurred within six months, requires amputation. The same applies to epiphyseal osteomyelitis, where resection is impractical. Of the long bones, osteomyelitis of the femur is the most difficult to cure; 45 per cent. of unhealed cases were involvements of this bone. Of the operative measures, careful effacements and partial closure gave the best and quickest results. The end-results of extensive effacements were excellent. The employment of chemicals at time of operation is of secondary importance. Careful, thorough surgery is of first importance. Plastic operations facilitate healing and are indicated for adherent scars or soft part defects. Refraction is frequent in chronic osteomyelitis. The femur and tibia are most frequently fractured. Union is the rule. Nonunion occurred only twice in fourteen such fractures.

**Malformation of Carpus.**—In this case in the left carpus the navicular was about one-half normal size and the styloid process of the radius was absent. In the right hand there was a total absence of the navicular and a poor development of the styloid process of the radius. The radial pulse in both hands was found to be at the middle of the wrist.

**Immediate Laminectomy for Fractured Spine Contraindicated.**—Kleinberg stresses the fact that there are at present no means of knowing in any given case of fracture of the spine, with injury to the cord, whether the nerve symptoms are due to irreparable damage, a removable obstruction, or to conditions which will be relieved by conservative treatment. Hence many surgeons believe that the only safe procedure is early laminectomy, as soon after the injury as the patient can stand the operation, to relieve pressure from the cord. To this advice there are three objections: (1) The motor and sensory symptoms disappear in many cases under conservative treatment, i. e., rest and immobilization. (2) Decompression laminectomy is often not followed by relief of the motor and sensory disturbances. In some cases the improvement occurs so late after the operation as to make it doubtful if the improvement is due to the operation. (3) The reported mortality from decompression laminectomy for fracture of the spine is very large. In view of these facts, it is difficult to advise laminectomy in fractures of the spine, with nerve symptoms, without waiting a few days to observe the effects of rest and efficient support.

**Reconstruction of Internal Lateral Ligament of Knee Joint.**—Persistent abnormal abduction of the leg in extension without abnormal anteroposterior or lateral mobility in flexion Wilson asserts probably is due to laceration of the internal lateral ligament. Persistent instability due to laceration of the internal lateral ligament will require correction by surgical procedure. A fascial transplant taken from the fascia lata embedded in the femur and tibia near the origin and insertion of the internal lateral ligament has proven a satisfactory method of repair in two cases.

### Laryngoscope, St. Louis

December, 1921, 31, No. 12

Nystagmus: Clinical Significance. H. Neuman.—p. 911.

Alterations of Orientation in Labyrinth Lesions and of Central Nervous System. F. Lasagna.—p. 922.

Case of Peritonsillar Abscess Followed by Phlebitis of Internal Jugular Vein. J. C. Kirby, Boston.—p. 926.

Fibrolipomas of Membrana Tympani: Case Report. E. Vernon, Chicago.—p. 928.

Otiobiosis (Ear Tick Disease). N. Toomey, St. Louis.—p. 930.

Epiphora After Extirpation of Lacrimal Sac. J. J. Gilbert, Providence, R. I.—p. 938.

Early Stages of Hyperplastic Ethmoiditis (Larval Ethmoiditis). S. McCullagh, New York.—p. 941.

Aspergillus of Maxillary Sinus. R. H. Skillern, Philadelphia.—p. 946.

Copper Sulphate for Vincent's Angina. C. R. King, Toledo, Ohio.—p. 950.

Arrested Laryngeal Tuberculosis; Abscess of Zygomatic Fossa Following Pneumonia, Exostosis of External Auditory Canal. H. S. Wieder, Philadelphia.—p. 953.



- Hay-Fever and Asthma. M. J. Gottlieb, New York.—p. 957.  
 New Method of Measuring Hearing Power by Means of an Electric Acumeter. J. Guttman, New York.—p. 960.  
 New Method and a New Instrument for Endoscopic Examination of Maxillary Antrum. H. L. Baum, Denver.—p. 965.  
 New Tonsil Instrument and Method of Use. T. E. Walker, Cleveland.—p. 969.  
 New Perichondrium Elevator for Resection of Septum. C. A. Campbell, Steubenville, Ohio.—p. 973.

### Medical Record, New York

Jan. 28, 1922, 101, No. 4

- Medical Treatment of Hyperthyroidism. S. P. Beebe, New York.—p. 135.  
 \*Diagnosis of Toxic Thyroid States by Serum Fixation Test. Further Report. W. N. Berkeley, New York.—p. 139.  
 \*Need of Calcium Therapy in Tuberculosis. F. Tweddell, Great Neck, N. Y.—p. 141.  
 Rating Losses of Industrial Vision Under New York State Compensation Law. W. Mehl, Buffalo, N. Y.—p. 145.  
 \*Blood Clotting and Control of Hemorrhage. C. A. Mills, Cincinnati.—p. 149.  
 Neuropathology of Neurasthenia. G. F. Boehme, Los Angeles.—p. 151.

#### Diagnosis of Thyrotoxicosis by Serum Fixation Test.—

The serum of patients with toxic thyroidism will under certain circumstances bind complement in the presence of antigen made from normal thyroid glands of dogs and guinea-pigs. This finding is the basis of the test used by Berkeley for diagnostic purposes. The total number of tests made by him, diagnostic and control, amounts now to about 250—on almost as many subjects. The controls have covered a wide range of ages, diseases, and dyscrasias, except the acute infectious diseases. All the controls were negative except one. The number of thyroid cases is about eighty-five. Of these about twenty-five were chronic or subchronic goiters in which a hypothyroid condition was to be suspected. In only one of these was a positive result obtained. Of the remaining sixty, fifty reacted positively. In all these the clinical course of the disease seems to have borne out the diagnosis. The positive tests have run all the way from one plus to four plus, and the serum test has appeared to keep pace with the clinical course of the disease, the reaction disappearing when the patient had recovered or had passed over into a hypothyroid condition.

**Calcium Therapy in Tuberculosis.**—Tweddell claims that pulmonary tuberculosis does not exist among lime and gypsum workers and that this immunity is due to the action of finely divided particles of lime and gypsum inhaled into the lungs. Lime in contact with water or the moist tissues of the lungs forms calcium hydroxid, which acts as a caustic and antiseptic and is then absorbed. Gypsum is also absorbed. This action appears to be specific in early pulmonary tuberculosis, for some unknown reason. Tweddell's investigations among manufacturers of lime and gypsum confirm the clinical observations that their employees are apparently immune to tuberculosis. He also cites other observations and references to show that sufficient calcium content of food not only helps to prevent tuberculosis but also favors the healing of wounds and fractures.

**Tissue Fibrinogen Aids Blood Clotting.**—Mills reports on his use of a tissue fibrinogen to aid in clotting blood. He has found that the lungs yielded the most potent product and that this is capable of greater activation to increased effectiveness by cephalin addition than is brain extract. Tissue fibrinogen has no toxic effect on the body unless clotting of the blood is induced. The albumins, however, possess a histamine-like action in every case and are quite toxic. The use of the purified substance is therefore indicated, especially since its ease of preparation renders it almost as accessible as the crude extracts. Great care must be exercised, however, to avoid injecting the substance directly into the circulating blood as there is very great danger of immediate death from intravascular clotting.

### New York Medical Journal

Jan. 18, 1922, 115, No. 2225

- Position of Medicine at Beginning of Twentieth Century Illustrated by State of Cardiology. J. Mackenzie, St. Andrews, Scotland.—p. 61.  
 Prognosis in Heart Disease. R. O. Moon, London.—p. 66.  
 Syphilis of Medium and Smaller Arteries. A. S. Warthin, Ann Arbor, Mich.—p. 69.

- Etiology and Treatment of High Blood Pressure, Arterial Hypertension and Arteriosclerosis. G. E. Barnes, Herkimer, N. Y.—p. 73.  
 Place of Electrocardiography. L. F. Bishop, New York.—p. 77.  
 Death of Heart in Diphtheria. S. C. Smith, Philadelphia.—p. 78.  
 Neurotic Element in Organic Cardiovascular Disease. S. Neuhof, New York.—p. 80.  
 Significance of Variation in Quality of Heart Sounds. F. B. Cross, Brooklyn.—p. 82.  
 Prevention of Arterial Disease. H. Brooks, New York.—p. 86.  
 Importance of Posture in Physical Examination of Heart. W. Gordon.—p. 89.  
 Aortic Incompetence. A. E. Renner, New York.—p. 95.  
 Tumors of Heart; Report of Ten Cases. H. I. Goldstein, Camden, N. J.—p. 97.

### Ohio State Medical Journal, Columbus

February, 1922, 18, No. 2

- Wounds and Injuries of Scalp: Their Complications and Treatment. J. E. Pirrung, Cincinnati.—p. 93.  
 Contrecoup Damage to Brain in Head Injuries. J. A. Caldwell, Cincinnati.—p. 96.  
 Gastro-intestinal Diagnosis: Advantage of Present-Day Methods as Seen by Surgeon. F. G. Leonard, Cleveland.—p. 99.  
 \*Heart Size in Relation to Thorax Size. A. Friedlander and S. Brown, Cincinnati.—p. 103.  
 \*School Child—Future Citizen. P. B. Brockway, Toledo.—p. 106.  
 Working of Hughes-Griswold Health Law in Lucas County. C. Koenig, Toledo.—p. 108.  
 Requisites of Modern Obstetrics and Professional, Social and Moral Obligations of Present Day Obstetricians. W. D. Fullerton, Cleveland.—p. 117.  
 Medical and Public Health Phases of Salem Typhoid Fever Epidemic. R. M. Schwartz, Salem.—p. 122.  
 \*Diagnosis of Twin Pregnancy by Means of a New Stethoscope. J. P. Gardiner, Toledo.—p. 125.  
 Simplified Infant Feeding by the Caloric Modification of Cow's Milk. P. F. Southwick, Sandusky.—p. 126.

**Heart Size and Thorax Size.**—Friedlander and Brown have worked out a formula for the estimation of heart size as measured by the total transverse diameter in relation to thorax size. Teleoroentgenograms are taken at 7 foot distance and heart tracings made therefrom. The transverse diameter is then compared with the estimated heart size as determined by the formula. The method is applicable to individuals of all ages, and the various types and weights. It offers an additional method of determining the existence of hypertrophy or dilatation of the heart.

**Teach Health Habits in Public Schools.**—Brockway would teach health habits and social hygiene in preference to anatomy and physiology in the schools. Such instruction is calculated to be of far more benefit to the schoolchild as a future citizen. While correction of defects in physique or health is a tremendous problem in itself, it only scratches the surface of what needs to be accomplished in preventive medicine. In the Toledo schools the system of revised health instruction is already beginning to show results.

**Diagnosing Twin Pregnancy with Stethoscope.**—By attaching two or more diaphragms to the ordinary ear piece of a stethoscope, Gardiner has been able to diagnose twin pregnancy as well as to differentiate between the fetal and maternal circulation. The same device may be used to compare heart action and respiration.

### Public Health Journal, Toronto

January, 1922, 13, No. 1

- Isolation, Its Value and Limitations. C. V. Chapin, Providence, R. I.—p. 1.  
 Control and Treatment of Venereal Diseases. J. K. McCord.—p. 10.  
 Possibilities of Heart Clinic in Children's Hospital. A. M. Goulding.—p. 13.  
 Introduction to Study of Social Hygiene. J. A. Dale.—p. 20.  
 Duty of State to Unmarried Mother and Her Child. J. N. Nathanson, Ottawa, Ont.—p. 30.  
 Legal Aid for Poor. F. Held, Toronto.—p. 34.

### South Carolina Medical Association Journal, Greenville

January, 1922, 18, No. 1

- Ples Planus or Flat Foot. L. W. Milford, Anderson.—p. 329.  
 Fitting Eyeglasses and Spectacles. T. E. Wannamaker, Jr., Cheraw.—p. 334.  
 Plea for More Careful Consideration of Therapeutic Effect of Remedies. L. O. Mauldin, Greenville.—p. 336.  
 Appendectomy as Relief for Definite Symptom Complex; Case Reports. C. B. Epps, Sumter.—p. 338.  
 Treatment of Acute Empyema. J. R. Boling, Columbia.—p. 340.  
 Goiter. J. P. Shearer, Florence.—p. 342.



**Texas State Journal of Medicine, Fort Worth**

January, 1922, 17, No. 9

- Diagnostic Types and Treatment of Cerebrospinal Syphilis. M. L. Graves, Galveston.—p. 424.  
Etiology and Pathology of Cerebrospinal Syphilis. J. J. Terrill and G. F. Witt, Dallas.—p. 426.  
Cerebrospinal Fluid Pressure in Diagnosis and Treatment. E. R. Carpenter, Dallas.—p. 428.  
Importance of Early Diagnosis and Treatment of Syphilis. N. Andronis, Galveston.—p. 430.  
State Control of Venereal Diseases. H. E. Kleinschmidt, New York.—p. 435.  
Psychology of Publicity in Health Work. O. Dowling, New Orleans.—p. 438.  
Proper Technic for Collection and Shipment of Specimens to Public Health Laboratory. G. M. Graham, Austin.—p. 441.  
Recurrent Headaches of Obscure Origin. J. M. Woodson, Temple.—p. 442.

**United States Naval Medical Bulletin, Washington, D. C.**

January, 1922, 16, No. 1

- Mosquito Eradication. A. H. Allen.—p. 1.  
Hospital Morale. E. L. Munson.—p. 8.  
Pathologist as an Essential Factor in Clinic Diagnosis. J. Harper.—p. 14.  
Tonsillectomy, A Surgical Procedure. G. B. Triple.—p. 17.  
Cholelithiasis. W. A. Brams.—p. 25.  
With Anson to Juan Fernandez. Part I. W. M. Kerr.—p. 35.  
Bronchopneumonia and Bronchostenosis Following Appendectomy. I. W. Jacobs.—p. 57.  
Chronic Cholecystitis. C. S. Norburn.—p. 63.  
Impressions from One Hundred Mastoid Operations. J. W. Green.—p. 69.

**Wisconsin Medical Journal, Milwaukee**

January, 1922, 20, No. 8

- Fate of Bone Graft. A. F. Jonas, Omaha.—p. 407.  
Unlocalized Intracranial Injuries, Indications for Surgical Treatment. C. A. Evans, Milwaukee.—p. 410.

**FOREIGN**

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

**Annals of Tropical Medicine and Parasitology, Liverpool**

December, 1921, 15, No. 4

- West African Ceratopogoninae. A. Ingram and J. W. S. Macfie.—p. 313.  
Effect of Saline Solutions and Sea-Water on *Stegomyia Fasciata*. J. W. S. Macfie.—p. 377.  
Prevalence and Character of Tuberculosis in Hongkong. III. Morbid Anatomy as Met with in Cases Among Children. H. H. Scott.—p. 381.  
On Genus *Cylicostomum*. J. E. W. Ihle.—p. 397.  
Australian Cestodes. I. Previously Described Cestodes in New Hosts. P. A. Mapstone.—p. 403.  
Id. II. *Angularia Australis*. P. A. Mapstone.—p. 407.  
Ulcerative Granuloma. P. A. Mapstone.—p. 413.  
Structural Differences in Ova of *Anopheles Maculipennis*. A. Bifurcatus and *A. Plumbeus*. M. E. MacGregor.—p. 417.  
\*Trypanocidal Effect of Phenylglycine Amido Arsenate of Sodium on *T. Brucei* in Rats and *T. Rhodesiense* in Mice. S. Adler.—p. 427.  
\*Bismuth as a Trypanocide. S. Adler.—p. 433.  
Malaria in a Venezuelan Oilfield. J. W. W. Stephens.—p. 435.  
Culicidae Collected in Venezuela. A. M. Evans.—p. 445.  
Synonymy of Genus *Zschokkeella*, Ransom, 1909, and of Species *Z. Guineensis* (Graham, 1908). T. Southwell and P. A. Mapstone.—p. 455.  
Mosquitoes and Other Blood-Sucking Arthropods of Upper Shiri River, Nyasaland. J. B. Davey and R. Newstead.—p. 457.  
Breeding Places of Anopheline Mosquitoes in Freetown, Sierra Leone. B. Blacklock.—p. 463.  
Apparatus for Individual Breeding of Mosquitoes. B. Blacklock.—p. 473.  
Treatment of Case of Rhodesian Sleeping Sickness by Preparation Known as "Bayer 205." W. Yorke.—p. 479.

**Trypanocidal Effects of Phenylglycine Amido Arsenate of Sodium.**—Phenylglycine amido arsenate of sodium used in freshly prepared solutions in distilled water for intraperitoneal injection into rats and mice had no appreciable action on trypanosomes in vitro nor had the blood of treated animals immediately (twenty-four hours) after becoming trypanosome-free. The drug had no curative effect on mice infected with *T. rhodesiense*. A remarkable feature of this drug is its relatively high minimum lethal dose. Although the drug

contains 26 per cent. arsenic, the minimum lethal dose was found to be 1.2 gm. per kilogram for rats and 3 gm. for mice.

**Bismuth Sodium Tartrate as Trypanocide.**—Soluble bismuth sodium tartrate was used by Adler in solutions of various strengths on animals infected with *T. rhodesiense* and *T. brucei* (*Nagana ferox*), respectively. In no case was a cure obtained. In animals which died after injection of bismuth sodium tartrate deposits of bismuth were found in all cases in the liver, frequently in the spleen, and less frequently in the kidneys.

**British Medical Journal, London**

Jan. 14, 1922, 1, No. 3185.

- Specific Sensitiveness and Anaphylaxis. H. H. Dale.—p. 45.  
\*Diagnosis and Treatment of Intrathecal Tumors of Spinal Cord. W. Thorburn.—p. 49.  
\*Value of Freedom and Exercise After Operations. R. P. Rowlands.—p. 52.  
Treatment of Tuberculosis with Colloid of Calcium. E. E. Prest.—p. 53.  
\*Postoperative Hemorrhage. F. Fergus.—p. 54.  
Antimony in Leprosy. G. H. Wildish.—p. 55.  
Antenatal Treatment of Congenital Syphilis with Arsphenamin and Mercury. J. Adams.—p. 56.  
Case of Meningitis Simulating Tetanus. L. S. Fry.—p. 56.  
Oesophageal Pouch. A. Brownlee.—p. 57.  
Labor Complicated by Malignant Growth. J. C. Davies.—p. 57.

**Intrathecal Tumors of Spinal Cord.**—Thorburn pleads for greater care in the diagnosis of intrathecal tumors of the spinal cord because early removal leads to recovery, at least consistent with comfort if not complete recovery. He also urges the great importance of exploring doubtful cases of transverse lesion of the cord—that is to say, all cases which are not obviously hopeless. One is more likely to do good than harm should a diagnosis of a thecal tumor prove incorrect. Thorburn holds that there is a strong probability that many early cases of transverse myelitis may be arrested and cured by incision and drainage of the dura mater—a possibility fully in accord with the view held that such myelitis is often due to infection spreading along the spinal nerves and then necessarily crossing the meninges and the intradural space before the cord itself is attacked. If this view of the causation of transverse myelitis be correct—and there is strong evidence in its favor—one may hope to arrest the infection in its course and save the cord before it is irretrievably damaged. Thorburn also is of the opinion that the infections usually come from the urinary organs.

**Freedom and Exercise After Operations.**—Rowlands suggests that the need of rest after operations has been greatly exaggerated, with the result that patients are kept in bed much longer than is really necessary. The public fear of operations he maintains is very largely due to the same cause. It is kind and wise to describe and explain the plan of after-treatment before the operation, so that the patient may expect and welcome the method. It cheers him to know that he may move as much as he likes in bed from the first, have the freedom of the room after four days, of the bath after seven days, and may take short walks or drives in the open air after ten days. Rest in bed is valuable while the nervous system is exhausted and the body is in pain immediately after a severe operation, but when reaction has set in and pain and tenderness have subsided, as they generally do after a few days, it is no longer necessary.

**Hematemesis After Cataract Extraction.**—About twelve hours after the extraction of a cataract, Fergus' patient was suddenly seized with very acute pain in the neighborhood of the stomach which lasted for some considerable time, and then a severe hematemesis occurred. There was no recurrence of the hemorrhage. The possibility of the case having been one of esophageal postoperative digestion is suggested by Fergus.

**Glasgow Medical Journal**

January, 1922, 97, No. 1

- Health of Munition Workers in Shell Filling Factory. J. Anderson and E. D. Anderson.—p. 1.  
Septic (Nonvenereal) Infections of Bladder and Kidney in General Practice. J. Ferguson.—p. 16.  
Pyogenic Infection of Urinary Tract in Infancy and Childhood. L. Findlay.—p. 28.  
Diagnosis and Treatment of Nonvenereal Pyogenic Infections of Urinary Tract; Urinary Antiseptics. C. H. Browning.—p. 38.



**Journal of State Medicine, London**

January, 1922, 30, No. 1

- Tuberculosis in Relation to Industry. S. L. Cummins.—p. 4.  
 Health and Welfare in Coal Mining Industry. E. L. Collis.—p. 15.  
 Efficiency of Clayton System of Disinfection and Disinfestation.—p. 28.

**Lancet, London**

Jan. 14, 1922, 1, No. 5133

- \*Some Rare and Obscure Pulmonary and Pleural Conditions. R. Hall.—p. 61.  
 \*Duodenal Ulcer in Infancy. D. Paterson.—p. 63.  
 \*Symptoms and Frequency of Ulcer of Lesser Curvature of Stomach. K. Faber.—p. 65.  
 Percussion and Width of Heart. W. Gordon.—p. 68.  
 \*Mental Factor in Visceroptosis. W. H. B. Stoddart.—p. 69.  
 Examination of Heart for Life Assurance. F. W. Price.—p. 71.  
 Hemosalpinx and Pyosalpinx with Torsion of High Fallopian Tube. W. G. Nash.—p. 78.

**Obscure Pulmonary and Pleural Conditions.**—The conditions discussed by Hall are: cavity simulating pneumothorax; ballooning of the lung; bronchopleural fistula; sodden pleura; interlobar effusions; loculation of fluid, and acute congestion of the lungs. Cases are cited to illustrate points made.

**Duodenal Ulcer in Infancy.**—As only three of the 100 cases of duodenal ulcer in infants recorded in the literature came from the United Kingdom, Paterson raises the question whether this condition does not exist in the infants of the British Isles to as great an extent as elsewhere, or whether postmortem examinations are at fault. He analyzes these cases. As predisposing causes it seems there are two main factors—lowering of general vitality and previous digestive disturbance. It seems generally agreed that duodenal ulcer is due to a thrombosis of one of the small vessels in the duodenum with autodigestion of the affected area. There is considerable evidence that the primary cause of the thrombosis is probably infective. In more than 70 per cent. of the cases the ulcer was single but in some of the remainder there were two and in some three ulcers. In no case was the ulcer below the papilla. The ulcers were invariably in the posterior wall of the duodenum varying in size. Other conditions, such as pneumonia, meningitis, jaundice, colitis, melena neonatorum and pyloric stenosis were found alone with the ulcer. In a large proportion, however, nothing was found but the ulcer in a marasmic child. The vomiting of blood and the passing of blood in the stools are the most characteristic and important signs of this condition. The diagnosis is extremely difficult, and is, in the vast majority of cases, not made. Paterson reports two cases. In one of these cases the diagnosis of duodenal ulcer had been suggested in life. The other case looked the picture of a case of summer diarrhea. Both infants died. In one case the ulcer was single; in the other case there were two ulcers.

**Ulcer of Lesser Curvature of Stomach.**—Faber analyzes fifty cases of undoubted chronic ulcer of the corpus of the stomach treated in the medical department of the State Hospital (Rigshospitalet), Copenhagen. The diagnosis was made by the demonstration of hour-glass constriction with roentgen rays, with or without Haudek's notch. The notch was found nineteen times, and in nineteen of the cases the diagnosis was confirmed by operation.

**Mental Factor in Visceroptosis.**—Stoddart urges that every case of neurosis or psychoneurosis should be examined for visceroptosis; and every doctor confronted with a case of visceroptosis should make inquiry respecting causes or symptoms of anxiety, fear, dread or allied emotional states.

**Medical Journal of Australia, Sydney**

Dec. 24, 1921, 2, No. 26

- Studies in Syphilis. N. H. Fairley.—p. 587.  
 Familial Syphilis. R. Fowler.—p. 599.  
 Anatomic Anomalies of Ribs. C. E. Dennis.—p. 603.

Dec. 31, 1921, 2, No. 27

- Principles of Diagnosis. F. G. Griffiths.—p. 617.  
 \*Anoxemia; Account of an Acute Medical Emergency in Infants Due to Oxygen Want. W. F. Litchfield.—p. 620.  
 Broad Ligament Cyst Simulating a Subperitoneal Myoma of Uterus. W. T. Chenhall.—p. 622.

**Anoxemia in Infants.**—In the majority of cases seen by Litchfield the disturbance started with bronchitis of a mild kind. These cases constitute a very definite clinical group, comprising infants not older than two or three months, who, without apparent cause or following a slight bronchial catarrh, develop periodic breathing, culminating in alarming attacks of apnea, a varying amount of cyanosis and a liability to a quiet death succeeding a term of rapid, shallow breathing. The condition is due to anoxemia or oxygen want. Oxygen is the main remedy and must be given promptly and continuously while the danger lasts.

**Medical Journal of South Africa, Johannesburg**

December, 1921, 17, No. 5

- \*Carcinoma of Liver in Natives and Its Frequent Association with Schistosomiasis. J. H. H. Pirie.—p. 87.  
 Dead Teeth. G. Friel.—p. 98.  
 Local Authorities and Public Health. A. Mitchell.—p. 99.

**Carcinoma of Liver Associated with Schistosomiasis.**—Pirie says that carcinoma of the liver is met with much more commonly than any other form of carcinoma in natives, whereas in European statistics it at best forms but an insignificant proportion of all carcinomas. Cirrhosis was present in all but two of thirty-three cases. In a few it is early and only apparent in microscopic sections, but in the majority it is gross and would be obvious even on naked eye inspection. Of the two cases in which there was no apparent cirrhosis, one was an undoubted duct-cell carcinoma, and the other was probably of both liver and duct-cell origin. It is evident that, if some cause bringing about a more frequent cirrhosis of the liver among South African natives can be traced, a likely explanation will be found for the more common occurrence of carcinoma of the liver. Pirie believes that the clue is to be found in the frequency of schistosomiasis. Granting that schistosomiasis is a common cause of cirrhosis of the liver, it may as such be a predisposing factor to a later development of carcinoma. In the thirty-six cases reviewed, schistosomiasis was definitely established in ten. In two it could definitely be excluded. In twenty-four information as to the condition of the bladder is lacking, and examination of liver sections is inconclusive.

**South African Medical Record, Cape Town**

Dec. 24, 1921, 19, No. 24

- \*Incidence of Conjunctivitis in Relation to Rainfall. A. W. S. Sichel.—p. 470.  
 Plague in South Africa: Perpetuation and Spread of Infection by Mild Rodents. J. A. Mitchell.—p. 475.  
 Specialism. L. E. Ellis.—p. 478.  
 \*Pregnancy After Removal of Double Pyosalpinx. E. B. Fuller.—p. 478.

**Relation of Conjunctivitis to Rainfall.**—In the course of an investigation of an epidemic of conjunctivitis on Christmas Island Sichel found that there was a relationship between rainfall and the number of cases of conjunctivitis. The sole industry of the Island is the production of phosphate of lime, obtained by the process of quarrying, which work has resulted in extensive excavations running horizontally into the hillside. In this way are formed "pockets" bounded on all sides by walls of dazzling whiteness, and under the tropical sun gives rise to a strong glare. Added to this is a perpetual atmosphere of fine phosphatic dust of a particularly irritating nature. This glare and dust, according to the investigation carried out by Sichel, constitute the main contributory causes in the production of eye trouble. On rainy days the dust is laid, and under cloudy skies the white phosphate is toned down sufficiently to be bearable to the gaze; on the other hand, when the tropical sun rules supreme, the dazzling glare is well-nigh intolerable, and dust is everywhere. Curves made by Sichel show a decided decrease in the number of cases of conjunctivitis during periods of rainfall at least sufficient to lay the dust and to remove the glare of the phosphate dust.

**Pregnancy After Bilateral Salpingectomy.**—Fuller removed both fallopian tubes, the right ovary and half of the left ovary from a woman, aged 26, in December, 1917. In September, 1921, she gave birth to a child. She had menstruated once after leaving the hospital.



**Annales de Médecine, Paris**

November, 1921, 10, No. 5

- \*Coagulation of Blood in Erythremia. C. Laubry and E. Doumer.—p. 341.  
\*Dystrophia of Glands. V. Hutinel and M. Maillet.—p. 362.  
\*Thyroid Treatment and Tuberculosis. E. Coulaud.—p. 386.  
\*Blood Count Under Epinephrin. Danul and Popper.—p. 395.  
\*Test of Liver Functional Capacity. J. Hatiéganu.—p. 400.

**Coagulation of the Blood in Erythremia.**—Tests in five typical cases of erythremia and in two cases of polycythemia showed weaker coagulating power, and explained it as due to the inadequate proportion of fibrin in relation to the excessive number of erythrocytes. The liver is not responsible for the lesser coagulating power.

**Defective Development in Relation to the Endocrine System.**—In this third article on glandular dystrophia, Hutinel and Maillet discuss the various forms of dysplasia of the brain, of the cardiovascular system, of the bones, and of the whole organism. They are not all due to endocrine insufficiency, but this is an important factor, and the resulting nutritional disturbances are transmitted from mother to child. One gland may seem to be incriminated, but usually several of the endocrine glands are involved, and the liver, the kidneys, the pancreas, etc., may share in the etiology of the aplasia. In all such cases there seems to be a general nutritional disturbance, a kind of diathesis which prepares the soil on which various influences induce lesions or interfere with normal development. Organotherapy at the proper time, especially at puberty, may aid in the development of the brain by stimulating nutrition during this crisis, at least temporarily. If not, the aplasia is liable to progress to sclerosis. The endocrine derangement may be personal or inherited, and they remark that hereditary dysplasia has been comparatively neglected to date. The dysplasia of the brain during the stage of active development resembles the retrogressive dysplasia of the aged, and induces dementia in both.

**Thyroid Treatment and Tuberculosis.**—Coulaud relates a number of examples of the flaring up of latent tuberculosis under the influence of thyroid treatment. This was particularly pronounced in three women with "thyroid rheumatism." The severe rheumatism improved materially under thyroid treatment, but the patients began to cough and developed active pulmonary tuberculosis. Souques has reported two similar cases, the women recovering almost completely from their painful polyarticular rheumatism, but dying soon after from pulmonary tuberculosis. All tests for tuberculosis had been negative before. One of these patients took 316 doses of 0.1 gm. of thyroid extract in the course of eight months; the pains and stiffness reappeared when the treatment was suspended. One man of 47 with chronic rheumatism improved spontaneously as pulmonary tuberculosis became installed. As the symptoms of rheumatism returned, thyroid treatment was begun and this seemed to speed up the lung process. The thyroid seems to be exceptionally active during menstruation, pregnancy and the menopause, and in these periods the resisting power to tuberculosis seems to be at its lowest ebb. Rist has recently reported some cases in which the onset of tuberculosis coincided with the beginning of a pregnancy. In Coulaud's experience, in eleven of twelve cases of pulmonary tuberculosis in women with goiter, the tuberculosis began at the menopause. In another woman a course of thyroid and iodine treatment for goiter was followed by a period of coughing and hemoptysis as the goiter improved. This occurred twice in a few years.

**The Blood Count After Epinephrin Injections.**—Danul and Popper report research which confirms that the transient leukocytosis which follows injection of 0.0005 or 0.001 gm. of epinephrin by the vein is due to mechanical factors connected with the arterial pressure, and not to any specific stimulation of centers.

**Stain Tests of Liver Functioning.**—Hatiéganu's tests have confirmed that after intramuscular injection of a warm solution of indigocarmin, in the dose of 0.24 gm. in 20 c.c. of saline, the bile aspirated by the duodenum tube shows the tint of the stain in twenty minutes, with the maximum effect in two or three hours. In all forms of liver disease accompanied with jaundice, none of the stain reaches the duodenum, and

its elimination is retarded in pernicious anemia and in venous cirrhosis, but in wasting diabetes, the whole of the stain is passed on practically unmodified. This evidence of serious insufficiency in diabetes throws new light on the disease. If the duodenal tube is not used, the appearance of the stain in the stools is likewise instructive.

**Bulletin de l'Académie de Médecine, Paris**

Dec. 20, 1921, 86, No. 42

- \*Calcium in Treatment of Tuberculosis. H. Coutière.—p. 410.  
\*Demonstration of Ex-Xiphopagus. G. Le Filliatre.—p. 415.  
\*Index of Skull Measurements. E. Bayle and L. MacAuliffe.—p. 421.  
Malta Fever in Corsica. S. Zuccarelli.—p. 423.

**Direct Inhalation of Calcium in Treatment of Pulmonary Tuberculosis.**—Coutière has been a witness from childhood of the way in which lime-kiln workers seem to escape tuberculosis, or existent lesions heal, and he has been trying to realize conditions similar to those in a lime kiln, as a therapeutic measure. He combines dry heat and pulverized calcium floating in air containing some carbon dioxide, and has found this combination was borne without harm by himself and others and even young children, while the signs of a tuberculous focus became rapidly attenuated or disappeared, with strength and weight regained. Some of his patients repeated the five minute or more inhalations ten or twelve times a day. The mechanical effect of the deep breathing is a further advantage. The carbon dioxide is added to induce a kind of venous stasis unfavorable for the proliferation of tubercle bacilli.

**Separation of Xiphopagus.**—Le Filliatre presented a girl of 8 in good health and apparently normal whom he had cut apart from her sister xiphopagus at the age of 6 weeks, dividing the bridge of liver tissue and soft parts connecting them. In the 16 cases of abdominal or thoracic teratopagus children he has found recorded, an attempt to separate them was made in six cases, three times soon after birth and three times at the ages of 4 months, 7 and 10 years. The mortality in the newly born was only 33 per cent. while it was 66 per cent. in the operations done later. The stumps of the liver healed perfectly in his case as also in Doyen's similar case. He adds that if the operation could have been done in his case at once after birth, before the staphylococcus infection had occurred, both the twins would probably have been saved. In this class of xiphopagus there is no inversion of viscera, the digestive canals are independent, and the uniting bridges seem to be always the same.

**Craniometric Index.**—The measurements of 257 French subjects are compared, both with each other, shape of nose, etc.

Dec. 27, 1921, 86, No. 43

- \*Micrococcus in Salt Foods. H. Martel and R. Germain.—p. 437.  
\*French Medicine in the Far East. T. Tuffier.—p. 440.  
\*Lung Wounds and Tuberculosis. E. P. de la Villéon.—p. 447.

**First Stage of Spoiling of Salted Meats.**—This is a study of the red appearance—*le rouge*—of bacon, hams and other salted foods. It is the work of a micro-organism found in salt, *Micrococcus rubroviscosus*, and its presence indicates the first stage of putrefaction in salted foods.

**French Medical Institutions in the Far East.**—On his return from the inauguration of the Union Medical College at Peking, Tuffier made a tour of inspection through French China, and here describes his impressions. The need for more medical men there is urgent. Those on the spot are doing a great work, especially in training natives in the Hanoi medical school. He relates that amebic dysentery has been practically conquered with cimetin, until now it is impossible to tell from the appearance whether a European has lived for years in the country or is a new arrival—a great change from the former aspect of the old colonials, hopelessly sapped by amebic dysentery.

**Wounds of the Lungs.**—Villéon had charge during the war of a service specializing in operations on the lungs. He operated himself in 410 of the 2,000 brought in with wounds of the lungs. Not one of his patients has developed pulmonary tuberculosis since, the interval up to seven years in some, not even the cases in which the projectile had injured the apex. In some cases of extensive injury of the pleura,



with prolonged suppuration, tuberculosis developed later, but for this the debility from the chronic suppuration was evidently mainly responsible. These experiences throw light on workmen's compensation cases of trauma involving the lungs.

### Brazil-Medico, Rio de Janeiro

Nov. 12, 1921, 2, No. 18

The Normal Neutrophil Count at Bahia. M. C. dos Santos.—p. 269.  
The Municipal Public Health Service. L. Barbosa.—p. 270.

Nov. 19, 1921, 2, No. 19

\*Saving the Remnants of Hearing. G. de Parrel (Paris).—p. 281.  
Evolution of Nematode Dioctophymoidea. L. Travassos.—p. 286.  
Chenopodium. Areobaldo Lelles.—p. 287.

**Treatment of Impending Deafness.**—De Parrel expatiates on the importance of training the ear to utilize the last remnants of hearing, and by functional exercises improve the function. Sound waves and other stimuli, means to improve the blood supply, and mobilization of the muscles of the internal ear all aid in the reeducation of the hearing, and he describes the procedures best adapted for these purposes. With absolute deafness, of syphilitic, meningitic or traumatic or central origin, it is not worth while to attempt to retain the hearing, and there is no recourse but to learn lip reading. But it is astonishing what progress can be made by training the attention, training in listening, and arresting the further progress of the ear disease, as he explains in detail.

### Crónica Médica, Lima, Peru

October, 1921, 38, No. 700

\*Yellow Fever in Peru in 1921. E. Vergne.—p. 309.  
Esthetic Surgery of the Face. M. Lagarde.—p. 321.  
Camphor in Treatment of Furunculosis. J. C. Dianderas.—p. 323.

**Yellow Fever in Peru.**—Vergne is medical inspector in the Peruvian army, and he here relates that in January, 1921, a troop of 49 soldiers, most of them from the hill country, was ordered to a coast town. No individual mosquito nets were provided, and the fourth day 2 developed symptoms of yellow fever. Other cases followed, until 2 of the officers and 23 of the men were down with the disease, and 32 per cent. died. He states that in the epidemic of two years ago, the northern zone of Peru had 5,000 cases, with 600 deaths. He presents the sum of our knowledge on the treatment and prophylaxis of yellow fever, and urges vigorous measures at once or the contagion may spread along the whole coast.

### Gaceta Médica de Caracas

July 31, 1921, 28, No. 14

\*Beriberi in Venezuela. F. R. Páez.—p. 211.  
\*Beriberi. V. de Milita.—p. 220.  
Measurements of Ascaris and Ova. J. M. Romero Sierra.—p. 229.

**Beriberi.**—This address delivered by Páez at the recent national Venezuelan medical congress, reviews the present status of our knowledge of beriberi, and its incidence in Venezuela. Until the last ten years it has been endemic in Ciudad Bolívar, for instance, causing from four to thirty-nine deaths each year, but since 1912 the number has been only two to four, and no cases were reported in 1920. He has seen cases run a fatal course in a few hours; the cases with heart complications are especially grave. Vomiting is an unfavorable sign, particularly when there are girdle pains. Beriberi seems to be a deficiency disease in Asia, but in Venezuela rice is not eaten much, and the diet is varied, and beriberi affects the well-to-do, and contagion of persons sleeping in the same room is common. Recrudescence in the rainy season is the rule, and initial fever is frequently observed. Another feature of beriberi in Venezuela is that a change of residence, even from one part of the town to another, often is followed by prompt recovery. Physicians in Venezuela are inclined to accept beriberi as an infectious disease. It was imported for the first time in 1885. De Milita reports the case of a previously healthy young clerk who recovered promptly from beriberi when taken to a mountain resort, but it recurred and proved fatal on return to the former sleeping room, damp, and lacking sunlight. A recurring attack of beriberi is usually graver than the first. He has been applying heliotherapy in treatment of beriberi since 1915, and has always obtained satisfactory results. Hot sand baths are also useful. His

observation has convinced him that infection occurs through the feet, and in prophylaxis he insists on the footwear being long exposed to the sun.

Aug. 15, 1921, 28, No. 15

\*Protein Therapy. J. de D. Villegas Ruiz.—p. 233.  
Medicine in Carabobo. Lisandro Lecuna.—p. 239.

**Protein Therapy.**—Villegas Ruiz relates that parenteral injection of 5 or 10 c.c. of the mother's or other milk cured promptly and permanently the thirteen infants with grave disturbances from intolerance of milk given this treatment according to Weill's technic. He declares that he recommends it *con entusiasmo y decisión como precioso recurso* in such cases. The infants were from 4 months to 2 years old. Persisting vomiting, colic, with constipation or diarrhea, and fever were the principal manifestations, alone or associated, growing worse directly after each feeding of breast or cow's milk or asses' milk, of good quality. Only one of the infants has had any return of symptoms. This one case teaches that intercurrent infections in infant or wetnurse may inhibit the effects of the vaccination and require its repetition. In such a case he warns to follow the Besredka method, injecting first 0.5 c.c. of the milk; an hour later, 2 c.c., and not until the third hour injecting the rest of the milk, to the total of 5 or 10 c.c.

### Revista de la Asoc. Méd. Argentina, Buenos Aires

September, 1921, 34, No. 203

\*Thyroidectomy in Cattle. E. Hug.—p. 731.  
Influence of Epinephrin on Calcium Content of Blood. J. M. Muñoz.—p. 734.  
Apparatus to Test Psychophysiologic Reaction Time. J. R. Beltrán.—p. 741.  
Pathologic Anatomy of Syphilitic Pneumonia. P. I. Elizalde.—p. 746.  
\*Cirrhosis of Pancreas and Liver. P. I. Elizalde and J. Lacoste.—p. 762.  
Bacteriotherapy of Influenza and Its Sequelae. J. J. Viton.—p. 767.  
\*Importance of Viscosimetry in Gastric Pathology. T. Martini.—p. 770.  
\*Intestinal Reactions in Exophthalmic Goiter. C. Bonorino Udaondo and O. Catalano.—p. 789.  
Cortical Inhibition in Epilepsy. N. Rojas.—p. 798.  
\*Fixation Abscess in Influenzal Pneumonia. Destefano et al.—p. 804.  
\*Intermittent Hydrops of Gallbladder. I. Allende and J. W. Tobias.—p. 812.  
\*Emergency Colectomy with Megacolon. P. L. Mirizzi.—p. 819.  
\*Screw Fixation of Fractured Neck of Femur. M. Merello and C. I. Allende.—p. 839.

**Thyroidectomy in Cattle.**—Hug relates that no symptoms from thyroid insufficiency could be detected in three Durham bulls that had had both thyroids extirpated at the age of 2 or 3 months. They were under observation for a year or seven months thereafter, and seemed to have developed normally except that they were a little smaller than the controls.

**Cirrhosis of Pancreas with Cirrhosis of Liver.**—Elizalde and Lacoste state that when cirrhosis of the liver is found in a cadaver, the pancreas almost invariably shows cirrhosis likewise, and they urge application of tests to determine the functional capacity of the pancreas in cases of cirrhosis of the liver.

**Viscosimetry in Universal Asthenia.**—Martini has found an abnormally low blood pressure and high viscosity of the blood invariably accompanying Stiller's asthenia universalis. The group with gastroparesis seems to be peculiarly liable to sluggish circulation, the extremities and face displaying a cyanotic tendency. Pressure on the skin blanches the spot, and it only slowly returns to its former tint. The hypoxiphysia is generally accompanied by endocrine insufficiency and also insufficiency of the organs with an external secretion, or there may be excessive secretion. The stomach may thus present the picture of gastrosuccorhea or achylia, as the case may be. In addition to the usual measures for a sagging and insufficient stomach, treatment should aim to lower the viscosity of the blood and promote the general peripheral circulation. This will benefit the stomach indirectly but effectually. He has found spartein sulphate useful for this as a heart tonic, supplemented by strychnin sulphate as a nerve and general stimulant, and suprarenal and pituitary extracts to act on the vessels. We thus modify conditions throughout, and his tabulation of the details of ten cases of stomach disturbances, out of a much larger experience, all treated on these principles, apparently confirms the soundness of his deductions. Determination of the viscosity of the blood



will give the clue for treatment in such cases, improving conditions so that specific treatment will prove more effectual.

**Intestinal Reactions in Exophthalmic Goiter.**—Attacks of diarrhea, acute and intermittent, are not rare in exophthalmic goiter, and in the case described here, in a woman of 36, they were so severe that they entailed extreme prostration. The choleric diarrhea, lasting for nearly nine days, had returned five times in the course of a year. Marie has reported a similar tendency to diarrhea in twelve or fifteen cases, and others in about 33 per cent. It may be an early or late symptom. Curschmann has reported a case in which the rebellious diarrhea was almost the only symptom of thyroid toxic action, and it was cured by thyroidectomy. The onset of the diarrhea is sudden, and there are no subjective symptoms, and no mucus or blood in the stools. The stools follow close after a meal or emotional stress, as a rule. No treatment seems to have any effect; the attack stops as abruptly as it began, and there is no further disturbance until another attack develops. In the case described, some improvement was noted under epinephrin enemas. In this case the diarrhea was of the gastrocnous type.

**Fixation Abscess in Influenzal Pneumonia.**—In 15 of the 18 cases in which a turpentine injection was made to induce a fixation abscess, the response was pronounced, and all in this group recovered. In the 3 other cases there was no reaction to the injection, and these 3 all died. The benefit that followed the development of the abscess was more pronounced, the earlier the injection had been made.

**Intermittent Hydrops of Gallbladder.**—A suppurating hydatid cyst in the liver was found to be responsible for the intermittent hydrops of the gallbladder.

**Colectomy for Megacolon.**—Mirizzi has noted that volvulus of the sigmoid flexure loop is borne much better than obstruction of the bowel at a higher point. Consequently the patients are able to stand resection of the bowel at once when the volvulus is reduced. He compares four cases of the kind with those published by others, and discusses the preferable technic on the basis of five cases of iliopelvic megacolon with fecaloma.

**Fracture of Neck of Femur.**—Merello and Allende are warm advocates of Delbet's method of driving a nail or screw axially into the fractured neck. They give four roentgenograms from two cases and emphasize that this technic materially shortens the period of immobilization and this, in turn, is a potent aid in warding off complications liable with long bed rest.

## Revista Española de Medicina y Cirugía, Barcelona

October, 1921, 4, No. 40

- \*Operative Curability of Cancer. S. Cardenal.—p. 571.  
Diagnosis of Hypertrophy of Prostate. J. M. Bartrina.—p. 578.  
Pathogenesis of Filtrable Viruses. A. Salvat.—p. 581.  
Hydatid Cysts Opening into Bile Passages. L. Urrutia.—p. 584.  
Transient Hypertension of Cerebrospinal Fluid. J. Peset.—p. 585.

**Operative Curability of Cancer.**—Cardenal asserts that the beginning of cancer is always hyperplasia of the preexisting epithelium, with or without some fetal inclusion of embryonal epithelial cells. It is thus an essentially local affection at first. This is the stage of simple primary hyperplasia of the epithelium, corresponding to hypertrophy of glands, and benign adenoma. Then comes the precancer stage, and finally the cancer itself. By operating during the second, precancer stage, we ward off the malignant disease, and he affirms that we have ample means for recognizing this stage in time. The microscope shows the regular growth and outlines of the hypertrophied skin papillae in the first stage. This growth becomes more irregular in time, but the outlines of the papillae are still smooth and distinct in the second, the precancer stage. In the third, the cancer stage, the epithelial cells burrow irregularly into the tissues below. The hypertrophy and invasion occur at points subjected to slight but long continued irritation, or irritation frequently repeated at the same spot, such as the natural openings, mouth, anus, vulva, or points where substances pile up and stagnate, as in the cecum, sigmoid flexure and pylorus. For the present we can detect the precancer proliferation of the epithelium only

in the superficial cases and possibly in the uterine cervix. In prophylaxis, everything liable to induce irritation at these danger points must be guarded against. Early and thorough extirpation is still as ever the best of all treatments.

## Revista Médica del Uruguay, Montevideo

October, 1921, 24, No. 10

- \*Enuresis and Myelodysplasia. A. Carrau.—p. 453.  
Diagnosis of Extra-Uterine Pregnancy. C. P. Colistro and A. Canzani.—p. 458.  
Operative Treatment of Hydrocephalus. W. Sharpe (New York).—p. 465.  
Prophylaxis of Venereal Disease in the Army. A. Turenne.—p. 475.

**Enuresis in Children.**—Carrau states that radiography failed to reveal any anomaly in 49 of 68 children with nocturnal enuresis. The 19 others presented three kinds of malformation: sacralization of the fifth lumbar vertebra (2); scoliosis; nonfusion of the posterior lumbar transverse processes and the sacrum (16). Whether these spinal anomalies are accompanied by malformation of cord or nerve roots, which might explain the enuresis, it is impossible to say. The neurosis factor is evidently the principal one in the enuresis.

## Semana Médica, Buenos Aires

Oct. 13, 1921, 28, No. 41

- \*Syphilitic Disease of the Kidneys. C. P. Waldorp and O. Behr.—p. 479.  
The Recent Epidemic of Influenza. A. Vitón.—p. 495.  
\*Hemicapsular Nephropexy. J. Nin Posadas.—p. 498.  
Endarteritis as Industrial Accident. A. A. Masciotra.—p. 500.

**Syphilitic Disease of the Kidney.**—Waldorp and Behr classify syphilitic disease of the kidney in seven groups. The first three belong to the acute phase of acquired or inherited syphilis and include Munk's lipoidic type of syphilitic nephrosis, syphilitic glomerular nephritis, and syphilitic amyloidosis of the kidney. The first and the last of these may subside under specific treatment, but the glomerular nephritis generally passes into a chronic stage or entails sclerosis. Syphilitic disease of the kidney during the tertiary phase may be of the interstitial or multiple fibrous type, or a primary syphilitic sclerosis which may subside under treatment or may run a malignant course; or there may be gummas and sclerosis. The fourth type in this group is paroxysmal hematohemoglobinuria, which is likewise, they say, a syphilitic toxic-lipoidic affection. Eighteen photomicrograms accompany the article, and the clinical picture corresponding to the seven types is outlined. One feature of syphilitic disease of the kidney is that the heart does not enlarge, while the aorta stretches under the influence of the syphilitic mesoarteritis. Other differential features are that the polyuria and albuminuria are moderate, while the hyaline tube-casts are finer and more abundant than in interstitial nephritis from other cause, and the granular tube-casts show droplets of fat; the power of concentration is reduced while that of dilution is intact; the elimination of sodium chlorid is sluggish, and there is anemia or pseudo-anemia; the spleen and liver are enlarged, and the subjects are generally younger than the age at which the phenomena with high blood pressure generally develop. The blood pressure and heart dulness may long be normal, but the second heart sound acquires a metallic ring. The prognosis depends on whether the syphilitic nature is recognized in time for treatment to be effectual. After vascular sclerosis has developed, not much can be hoped from treatment.

**Hemicapsular Fixation of the Kidney.**—Nin Posadas makes four radial incisions in the capsule, cutting down to a grooved sound, on the posterior aspect of the kidney. This allows three triangular flaps to be turned back, and these are sutured to muscle, rib or interspace to suspend the kidney in its normal bed. The sutures are taken by the Albarran technic. The patient is kept on his back for two weeks, and the outcome has been perfect in the cases treated by this method to date.

## Siglo Médico, Madrid

Sept. 10, 1921, 68, No. 3535

- Detection of Tubercle Bacilli in Urine. M. Macstre Ibáñez.—p. 861.  
Trachoma in Almería Province. M. Marín Amat.—p. 862.  
Nocturnal Musical Obsession. V. Ribón.—p. 867.  
Unusual Manifestations of Syphilis. Sicilia.—p. 868.



Sept. 17, 1921, 68, No. 3536

Proposed Ministry of Public Health and Labor. Martín Salazar.—p. 885. Cont'd.

\*Koepp's Microscopy of Living Eye. M. Marín Amat.—p. 887. Conc'n No. 3538, p. 987.

Case of Abdominal Influenza. H. Dasso.—p. 893.

**Microscopy of the Living Eye.**—Marín Amat gives the summary of a course of lectures on this subject by Koepp of Halle, reproducing illustrations showing the technic for microscopic study of the living eye, and interpretation of the findings.

Oct. 1, 1921, 68, No. 3538

\*Extra-Urethral Gonococcus Processes. A. Pulido Martín.—p. 983.

Ministry of Public Health and Labor. Martín Salazar.—p. 985. Conc'n. Tuberculous Arthritis. F. del Río.—p. 941.

Placenta Factor in Changes in the Pregnant. P. Bar.—p. 941. Conc'n No. 3539, p. 962.

War and Hygiene. F. Rico Belestá.—p. 945.

**Treatment of Extra-Urethral Gonococcus Processes.**—Pulido Martín comments on the way in which the gonococcus seems to become less virulent as time passes, so that a process that has lasted for months or years may be cured by a sudden, vigorous course of treatment. He has found that a lurking gonococcus process in the kidney pelvis is more common than generally supposed, and that direct medication with a 1:500 up to 1:100 solution of silver nitrate, through the ureter catheter, often cures a gonococcus pyelitis of long standing. In four such cases less than four instillations of the nitrate permanently eradicated the gonococcus. When mixed infection is responsible for the pyelitis, the effect is less prompt and less certain. The epididymis is not accessible to direct medication in this way, but it can be reached by diathermy, and it is in gonorrheic epididymitis that diathermy has scored its finest successes. The pains subside at the first sitting, in many cases. He explains that the diathermy does not kill the gonococcus. If it did, they would be destroyed at the first sitting, which is not the case. He has seen cases with severe burns from it, the patients applying higher and higher temperatures in their efforts to kill the gonococci by the heat. The effect of diathermy, he reiterates, is indirect, by stimulating the tissues to effectual defense.

In the hundreds of cases in which he has injected an anti-gonococcus vaccine, he has not seen one in which nature alone might not have done as well without the vaccine. Better results in gonococcus rheumatism than with any other measure have been realized, in his experience, with intravenous injection of 1:1,000 solution of mercuric chlorid, according to Baccelli's method of treating acute polyarticular rheumatism. He remarks parenthetically that this is so extremely effectual in this last mentioned disease that he is amazed that it is not applied in every case as the routine procedure from the start. In gonococcus rheumatism it seems to be more effectual the greater the distance of the process from the urethra. The lurking place of the gonococci might be sought in the seminal vesicles when epididymitis recurs.

### Beiträge zur klinischen Chirurgie, Tübingen

1921, 124, No. 2

\*War Wounds of Arteries and Veins. O. Hahn.—p. 241.

\*Bone Bridge for Joint. W. Müller.—p. 315.

Geographical Distribution of Acute Suppurative Osteomyelitis. H. Tichy.—p. 381.

Osteitis Deformans or Enchondroma? K. Stettner.—p. 414.

\*Mobilized Ankylosed Joints. T. Kalima.—p. 423.

\*Neurofibroma of the Scalp. H. Flörcken and W. Steinbiss.—p. 451.

Operative Treatment of Traumatic Incontinence of Urine. H. Flörcken.—p. 458.

Chronic Appendicitis and Movable Cecum. C. ten Horn.—p. 467.

**War Wounds of Vessels.**—Küttner has preserved the records of 600 war wounds of large blood vessels in which he had occasion to operate or advise, and Hahn discusses this material from various standpoints, with sixty-seven illustrations, a number of them colored, traumatic aneurysms in particular.

**Extra-Articular Bridging of a Joint.**—Müller has applied to joints Albee's method of bone implants, and his experiments on twenty-four rabbits and dogs proved the feasibility and excellence of the ankylosis thus obtained. The irritation from the implant insured extensive callus production. It was never complete bony ankylosis; some connective tissue always intervened, so that the condition in a few of the

animals in time was more a pseudarthrosis. Bone tissue seems to respond to persisting mechanical injury or special irritation by a local resorption, without the normal corresponding regeneration of new bone tissue. The regeneration is not quite complete, and roentgenoscopy and the microscope show intermixture of connective tissue cells in the new formed bone and callus.

**Outcome of Mobilization of Ankylosed Joints.**—Kalima's comprehensive study of eighteen large joints in which the ankylosis had been corrected by surgical measures, confirms the necessity for radical removal of the shriveled and otherwise deformed joint capsule and adjoining cicatricial tissue.

**Neurofibroma of the Scalp.**—The elephantiasic tumor lay flat on the scalp, like a large cap. It could be lifted up for several inches. Excised scraps confirmed its connective tissue character.

### Deutsches Archiv für klinische Medizin, Leipzig

Dec. 20, 1921, 138, No. 1-2

\*Route of Infection in Pyelitis. A. Levy.—p. 1.

\*Agglutination in Typhoid After Vaccination. W. Hergt.—p. 18.

Muscle Tests in Myasthenia Gravis. Schäffer and Brieger.—p. 28.

\*Gastric Ulcer. Marie Clauss.—p. 41.

\*Paroxysmal Hemoglobinuria. P. Kaznelson.—p. 46.

Experimental Research on Volume Bolometry. S. Hediger.—p. 58.

Volume Bolograph for Study of Pulse. S. Hediger.—p. 71.

Nitrogen Metabolism in the Aged. G. R. Heyer.—p. 76.

\*Kidney Functioning with Benign Nephrosclerosis. O. Klein.—p. 82.

Action of Blood on Typhoid Bacilli. L. Bogendorfer.—p. 120.

**Route of Infection in Pyelitis.**—Levy relates that in 40 cases of febrile abortion, colon bacilli were found in the blood, and in 24 also in the urine, and yet there were no signs of pyelitis in any instance. He presents this with other arguments to sustain the assumption that primary pyelitis is the result of ascending infection from the urethra.

**Agglutination Test in Typhoid.**—Hergt states that the response to the Gruber-Widal test may be positive merely from the effect of antityphoid vaccination. The response differs, however, both in titer and duration, so that the diagnostic value of the test has not been lost by antityphoid vaccination, as some feared it would be.

**Gastric Ulcer.**—Clauss found in 29 women and 71 men with chronic gastric ulcer, that a nervous predisposition might be incriminated in 45 of the cases. Arteriosclerosis was evident in others, and in these some vascular disturbance may have been an important factor. In 7 cases there was a history of articular rheumatism. Gastroparesis was evident in about half the cases. The gastric acidity was normal in all but 9 cases in which there was hyperacidity. One man in the nervously predisposed group had these stomach disturbances for twenty years only in the summer; during the winters he was free from them.

**Paroxysmal Hemoglobinuria.**—Kaznelson reports two cases of hemoglobinuria from chilling, in a woman of 37 and man of 42, submitted to various tests. As the erythrocytes were destroyed by the test chilling, part of the hemoglobin released passed off through the kidneys, but part was transformed to bilirubin. The bilirubin peak, an hour or two after the chilling, was pronounced even in the absence of all other manifestations of the acute hemolysis from the action of the cold. Applying the cold to the arm below a constricting band, restricted the local jaundice to this region. No effect on the paroxysms from intravenous injection of hypertonic salines could be detected.

**Kidney Functioning with Benign Sclerosis of the Kidney.**—Klein reports that in fifty cases of high blood pressure from arteriosclerosis, 66 per cent. showed signs at times of transient derangement of kidney functioning. This was manifested by the rise in the nonprotein nitrogen in the blood. This transient disturbance seems to be of a functional nature. With actual anatomic changes, the residual nitrogen keeps permanently high.

### Deutsche medizinische Wochenschrift, Berlin

Nov. 17, 1921, 47, No. 46

Renewed Antiseptic Treatment of Tissues. R. Klapp.—p. 1383.

The Testing of Antiseptics. E. Hailer.—p. 1384.

\*Exophthalmic Goiter. A. Loewy and H. Zondek.—p. 1387.

\*Hemoclastic Crisis in Cholelithiasis. F. Kisch.—p. 1389.

Technic of the Cutaneous Tuberculin Reaction. A. Lippmann.—p. 1390.



- \*Indications for Operation in Gastric and Duodenal Ulcer. H. Brütt.—p. 1391. Conc'n in No. 47, p. 1422.  
Peritoneal Absorption of Gases. H. Fühner.—p. 1393.  
Biologic Peculiarity in New-Born. F. Kirstein.—p. 1393.  
Reliability of "Heliodor" Roentgenograms. W. Alwens.—p. 1395.  
Roentgen Irradiation of Carcinomas; the Effect of Stimulating Doses in Increasing Cell Functioning. Fraenkel.—p. 1396. Comment. Halberstaedter.—p. 1396.  
A Method of Preparing Bacterial Nutrient Mediums. G. Brunhübner and W. Geiger.—p. 1397.  
Present Status of Muscular Rheumatism (Myalgia). G. Voss.—p. 1397.  
Bone Fractures in General Practice. Lcdderhose.—p. 1398.

Nov. 24, 1921, 47, No. 47

- Relations of the Carbonic Acid Tension of Alveolar Air to the Physiology and Pathology of Gastric Digestion and to the Chlorids of the Blood Serum. F. Kauders et al.—p. 1415.  
Placenta in Relation to Eclampsia. Liepmann and Schulz.—p. 1417.  
Clinical Blood Examination as a Routine Measure. Arneht.—p. 1418.  
Blood Sugar Determination. R. Offenbacher and A. Hahn.—p. 1419.  
Dermatoses and Internal Secretion. W. Brock.—p. 1420.  
Mastic Test for Spinal Fluid. V. Kafka.—p. 1422.  
Six Cases of Syphilitic Reinfection. F. Lesser.—p. 1425.  
Peculiar Type of Fixed Arspheamin Exanthem. B. Süring.—p. 1426.  
Diathermy for Gonorrhea in Women. I. v. Büben.—p. 1427.  
Trials with a Modified Fluoroscopic Screen. O. Goldstein.—p. 1428.  
Differential Diagnosis of Exanthematous Diseases. Friedemann.—p. 1428.  
Surgical Tuberculosis in General Practice. Lcdderhose.—p. 1431.

**Exophthalmic Goiter.**—Loewy and Zondek recall that until recently, it was the commonly accepted view that in exophthalmic goiter iodine was contraindicated. Neisser pointed out that small quantities of iodine are well borne by patients with exophthalmic goiter, and may improve their condition considerably. In a series of cases they were able to show, in accord with Neisser's findings, that potassium iodide in doses of a few milligrams would improve not only nutrition but also the general subjective condition of the patients. They showed, furthermore, that the improvement was due to the fact that by such medication the pathologically increased metabolism was reduced to normal. The decrease in the gas exchange in three different cases was 19.9, 28.8 and 29.5 per cent., respectively. Successful treatment depends, in a great measure, on a careful regulation of the dosage. At first, 3 drops of a 5 per cent. potassium iodide solution should be given (2.5 mg. per dose). The weight of the patient should be carefully watched and the doses slowly increased as long as the weight continues to increase. The upper limit of tolerance varies individually, 20 drops three times a day being the maximal dose in some cases. When the weight begins to fall and the subjective well-being tends to grow worse, the dosage must be reduced or the use of iodine discontinued for a time.

**The Hemoclastic Crisis in Cholelithiasis.**—Kisch reports the application of the Widal functional test of the liver. A specimen of blood for the purpose of counting the leukocytes was taken immediately before, and then at intervals of twenty minutes. The systolic blood pressure was likewise determined before the test and at intervals of fifteen minutes. For a test breakfast he gave, in the beginning of his investigations, 200 gm. of whole milk, but later he increased the amount to 300 gm., which was found, in positive reactions, to bring about the hemoclastic crisis (the leukopenia) much more promptly. For comparative purposes, he employed, furthermore, as a test breakfast 20 gm. of sugar in 300 gm. of water; likewise, 500 gm. of ordinary water, with nothing added. The investigations were carried out on 32 patients; in 27 cholelithiasis was certain, in the others, dubious. In 12 of the 27 positive cases icterus was or had been present, and in 15 cases there had been no signs of icterus. Following the ingestion of 300 gm. of whole milk (in the morning, fasting), a 26 to 44 per cent. reduction of the leukocyte count was noted in 21 of 32 patients. The leukopenia reached its maximum from forty to sixty minutes after the rapid ingestion of the milk. The test breakfast of sugar solution or of ordinary water produced a reduction of leukocytes (from 25 to 32 per cent. in the former and from 20 to 27 per cent. in the latter) only in 10 and 7 cases, respectively, from which it is evident that the 300 gm. of milk gives more reliable results. A fall of blood pressure occurs much less rarely than leukopenia. The fact that in the presence of disturbed liver functioning leukopenia occurs following the ingestion of a nonprotein test breakfast would seem to indicate that the hemoclastic

crisis cannot be satisfactorily explained on the basis of anaphylactic causes.

**Indications for Operation in Gastric and Duodenal Ulcer.**—Brütt develops a point that he has found of advantage in reaching a differential diagnosis. Of 131 cases of perforating ulcer, 80 per cent. were in men and only 20 per cent. in women. He explains this striking fact by stating that pyloric and duodenal ulcers develop perforations much more frequently than those distant from the pylorus. Pyloric and duodenal ulcers are found almost exclusively in men. Of 99 perforating ulcers of the pylorus or duodenum, 95 per cent. were in men. On the other hand, of thirty-two perforations located at some distance from the pylorus only 30 per cent. were in men. From another angle, 82 per cent. of the perforated ulcers in women are distant from the pylorus. This finding has a certain differential diagnostic value with respect to cholelithiasis. In women, a severe spontaneous pain in the right side of the abdomen, other things being equal, points more to biliary colic than to perforating ulcer.

### Deutsche Zeitschrift für Chirurgie, Leipzig

November, 1921, 167, No. 3-4

- \*Gastric Ulcer. K. Nicolaysen (Christiania).—p. 145.  
Diffuse Fibromatosis of Mamma in a Man. A. Consten.—p. 264.  
Contusion of Pancreas in Child. F. Boesch.—p. 282.

**Chronic Gastric Ulcer.**—Nicolaysen's extensive monograph on the pathologic anatomy and pathogenesis of chronic gastric ulcer is profusely illustrated, with two colored plates and bibliography. He succeeded in producing lesions in the stomachs of dogs and rabbits which strikingly resembled gastric ulcer in man. He explains that the continuous irritation from the food prevents the healing of a casual small ulceration, and it develops into a chronic stage. By refraining from food by the mouth or by surgical removal of the irritating factors, the ulcer first gets a chance to heal, and in the majority it does heal under these conditions.

December, 1921, 167, No. 5-6

- \*Parabiosis of Animals. T. Mayeda.—p. 295.  
\*Hirschsprung's Disease and Contracted Pelvis. H. Haugk.—p. 349.  
Luxation After Gunshot Wounds. O. Stracker.—p. 357.  
\*Football Players' Deformity. F. Mandl and J. Palugyay.—p. 376.  
\*Local Anesthesia. O. Wiedhopf.—p. 392.  
Absorbent Filling for Wound Cavities and Fistulas. V. E. Mertens.—p. 422.  
Internal Inguinal Hernia in Women. Niedlich.—p. 429.

**Research on Animals Joined Together.**—Mayeda emphasizes the light thrown on the fate of transplants and on the effects of removal of the suprarenals when studied by parabiosis. Of the 75 pairs of white rats that he thus united, 18 lived; 71 of Matsuyama's 268 parabiotic couples survived for more than a month. Schmidt joined three rats together. The parabiosis of two animals of the species proceeds normally; both animals grow well afterward. When they are of different species, one of the animals becomes stunted in its growth and anemic and dies, while the other may develop normally. With the homogenous parabiosis, a vital stain spreads alike through both, and a skin and muscle flap from one heals on the other, neither of which occurs when the animals are of different species. The second animal can be regarded as a big transplant. Both suprarenals can be removed without harm from one of the joined animals, if of the same species. Both suprarenals can be removed from the other animal a month later without harm, as the accessory suprarenals in the first animal have become hypertrophied by that time. Several colored photomicrographs accompany the article. The research was done under Hotz at Basel.

**Operative Treatment of Hirschsprung's Disease.**—The case reported by Haugk impresses the necessity for ascertaining conditions in the pelvis before the operation. The pelvis was found so contracted that the bowel could not be brought down to the anus as intended; and an artificial anus had to be provided.

**Deformity of the Legs in Football Players.**—Fifty football players were examined (Vienna); in four there was slight genua valga and in thirty-six genua vara. All said that this deformity had developed after they had begun to play football since the war.



**By-Effects and After-Effects of Local Anesthesia.**—Wiedhopf remarks that the symptoms from mild and transient toxic action from the procain are generally overlooked, or are ascribed to the patient's nervousness. But absorption of the drug may induce vomiting, palpitations, dizziness and sweating, or collapse, agitation or somnolency, or even death. Collapse has been exceptionally observed with simple nerve blocking—as for a herniotomy—with lumbar, sacral, paravertebral or splanchnic regional anesthesia. Härtel has reported a case of syncope after anesthetization of the gas-serian ganglion. Epileptiform seizures after high sacral anesthesia have been reported by four surgeons, to a total of 12 cases. Wiedhopf's list of fatalities in connection with local anesthesia begins with 2 deaths at goiter operations under paravertebral and others under high sacral anesthesia—a total of 14 fatalities for which the procain seemed certainly responsible. The extreme vascularization of the extradural space provides a huge surface for absorption of a fluid injected. The high pressure required to force the anesthetic into the sacral canal might force it mechanically into the circulation. In many of the toxic cases reported, it is mentioned that blood had dripped from the needle, showing that a vessel had been pierced. This seems to have occurred more often with the sacral, paravertebral, splanchnic and trigeminal technics than with others. Absorption of the drug is more liable in loose and highly vascularized tissue; Låwen had toxic symptoms in 2 operations involving the anus.

Wiedhopf states that transient toxic phenomena seem to be much more common since the war. The custom of giving a narcotic with the local anesthesia may be responsible for a cumulative toxic action. In prophylaxis, cannulas of small diameters should be used; the instruments should not be boiled or kept in soda solution, as this splits epinephrin. His experimental research has confirmed that addition of sodium bicarbonate enhances the action of procain, so that a smaller dose can be used. He reviews further the articles that have been published relating to toxic after-effects, citing instances of necrosis of the skin with sacral anesthesia; transient blindness (2 cases) after trigeminal anesthesia; paralysis after blocking a plexus, or injury of pleura or lung (Cappelle's case of fatal injury of lung), pneumothorax, pleuritis, mediastinal emphysema or air embolism. With paravertebral anesthesia, injury of the vertebral artery, transient irritation of the vagus or sympathetic, paralysis, or injury of pleura or kidney. With blocking of the splanchnic nerve, injection of the fluid into a vein or injury of some organ. With nerve blocking in the thigh, injury of the femoral artery. No after-effects have been reported as following parasacral anesthesia. It is disappointing to find that local anesthesia has not reduced the after-pains from the operation itself. Wiedhopf's bibliography of 213 references was crowded out of the *Zeitschrift*, it is stated. He is assistant in the Marburg University surgical clinic. The writers quoted in the text seem to be all German.

### Jahrbuch für Kinderheilkunde, Berlin

November, 1921, 96, No. 5

Chemical Composition of Infant Brain. E. Schiff and E. Stransky.—p. 245.

Feeding Experiments with Fistula Dog. K. A. Zahn.—p. 259.

Diphtheria Bacilli in Nose of the New-Born. J. Schoedel.—p. 273.

Infants as Diphtheria Bacilli Carriers. R. Spitzner.—p. 279.

\*Tuberculosis in Children Seen in Private Practice. H. Brüning.—p. 286.

**Tuberculous Children in Private Practice.**—Brüning found a positive skin tuberculin reaction in 26 per cent. of 350 children in well-to-do homes at Rostock. Over 6 per cent. giving a positive reaction were infants; over 22 per cent. were young children, and 47.4 per cent. schoolchildren.

December, 1921, 96, No. 6

\*Gastric Insufficiency in Infants. K. Blühdorn and Loebenstein.—p. 303.

\*The Exudative Diathesis. E. Stransky and O. Weber.—p. 317.

\*Pathogenesis of Epidemic Encephalitis. R. Quest.—p. 324.

\*Hirschsprung's Disease. R. de J. de Jong and Plantenga.—p. 332.

**Insufficiency of the Stomach in Infants.**—Blühdorn and Loebenstein state that the motor function of the stomach may be impaired without any cause to be discovered for this insufficiency on the part of the stomach. As a rule, however, it follows some acute digestive disturbance or febrile

disease. The stagnation of the food in the stomach causes loss of appetite, sometimes rejection of food, and unless the stomach tube is used the condition is liable to be labeled nervous anorexia. The stomach tube may bring remnants of food from previous feedings. The child may vomit at an hour when its stomach normally would be empty, but vomiting is not a constant symptom. The stomach tube findings are tabulated from 15 infants who were not thriving properly, and they give the case histories of others who were losing weight constantly after recovery from dysentery or other disease. One case was in a 6 weeks' infant, but usually infants presenting this gastric insufficiency are from 6 to 18 months old. After siphoning out the stomach, they pour in 150 or 200 c.c. of a mineral water (Lullus or Ems water). This relieves the infant's thirst, and on small amounts (300 to 400 c.c. a day) of sweetened buttermilk, the appetite and the general condition improve at once.

**The Exudative Diathesis.**—Stransky and Weber have been investigating the present status of the children who in infancy had been of the exudative diathesis type. There were 400 of this type among the 700 during a four year period at the children's clinic in Berlin. While the majority seem to outgrow all the pathologic symptoms, yet in a certain proportion the tendency for abnormal reactions to normal stimuli persists into later life. Persisting prurigo, neurogenous eczema, urticaria, adenoids, bronchial asthma, or erythrodermia were noted in 29 children—all between 7 and 14—while 39 showed no further trace of the exudative diathesis. It seems to be impossible to foretell in infancy whether the exudative diathesis will be thrown off or not.

**Pathogenesis of Epidemic Poli-encephalitis.**—Quest states that the presence of an antibody in the lumbar puncture fluid in epidemic poli-encephalitis can be demonstrated readily by an intradermal autoseroreaction.

**Etiology of Congenital Megacolon.**—Necropsy in a few new-born infants revealed a fold or valve formation near the entrance into the rectum. This obstruction to the passage of feces causes their accumulation in the colon, with secondary distention and megacolon. The walls may become altered in time besides.

### Medizinische Klinik, Berlin

Nov. 13, 1921, 17, No. 46

The Species and the Individual. R. Rosemann.—p. 1377. Conc'n in No. 47, p. 1408.

Regeneration of Hyaline Joint Capsule. Hitzler.—p. 1380.

\*Retrograde Lymphangitis. L. Waelsch.—p. 1383.

Parenteral Injection of Milk in the Tuberculous. E. Suess.—p. 1385.

\*Gelatin in Therapeutics. E. Homberger.—p. 1390.

Recording the Syphilitic. L. Merk.—p. 1392.

\*Bergell's Reaction. F. v. Graevenitz.—p. 1393.

Experimental Research on Multiple Sclerosis. A. Gersbach.—p. 1395.

**Retrograde Lymphangitis.**—In the three cases described by Waelsch, the retrograde lymphangitis was secondary to an abscess originating in a sweat gland in the axilla, but without involvement of the axillary lymph glands and without edema of the arm.

**Gelatin in Therapeutics.**—Homberger recalls that gelatin has been used to arrest hemorrhage from time immemorial in China and Japan, and that gelatin—being made mostly from cartilage, which is distinguished above all other tissues by its oxygen content—contains such a large proportion of oxygen that oxygen is liberated when the gelatin is treated with hydrogen dioxid. When gelatin is soaked in hydrogen dioxid, instead of water, and is then heated and allowed to stiffen again, numerous bubbles form, which does not occur with water. Sugar held in a flame does not burn, but if it is mixed with flour or gelatin, it burns with an oxygen flame. This suggests that the intake of gelatin may facilitate combustion in the living body. The use of gelatin in photography throws light on its further properties. The blood coagulated immediately in a case described in which a man with an aneurysm had been taking 40 gm. of gelatin daily for eighteen months. He had thus ingested a total of 20 kg. of gelatin during the period, drinking it in lemonade.

**The Bergell Reaction in the Urine.**—Graevenitz has confirmed Bergell's statements in regard to the formed crystalline elements found in urine along with the amorphous



albumin precipitate obtained by the Esbach method. It seems to be specific for human urine and to be proportionally more abundant in normal urine. In 40 healthy persons the precipitate was purely crystalline. In 15 cases of nephritis, the proportion of the crystalline substance increased as conditions improved, while it grew smaller as the disease became graver. In 5 very severe kidney cases, tuberculosis or chronic nephritis, not a trace of the crystalline substance was found. It was never discovered in other body fluids. A mixture of 10 c.c. of the urine; 5 c.c. of the Esbach reagent and 3 c.c. of sodium chlorid shows up the crystals best under the microscope. He found them in one fetus that had died from asphyxia during delivery. The Abderhalden test gave a weakly positive reaction for albumin with the crystals. Heating dissolves them but, on cooling, crystals form again.

Nov. 20, 1921, 17, No. 47

- \*Emergency Tracheotomy. F. Pels Leusden.—p. 1405.  
Species and Individuality. R. Rosemann.—p. 1408. Conc'n.  
\*Parenteral Resorption. K. Ziegler.—p. 1410.  
Vicious Circle After Gastro-Enterostomy. K. Blond.—p. 1412.  
Acute By-Effects of Arsphenamin. K. Glaser and E. Langer.—p. 1415.  
Diphtheria Bacilli in Sputum. E. Singer.—p. 1416.  
Nature of Mammary Cancer. L. Merk.—p. 1418.

**Emergency Tracheotomy.**—Pels Leusden insists that every physician should be prepared to do an emergency tracheotomy at any time unless he lives near a hospital. Rapid decision and prompt operation may be indispensable, and retractors can be improvised from wire, and almost any tube or metal catheter can serve for the provisional cannula. A few drops of chloroform are enough for a child; local anesthesia is better for adults. A rolled up blanket under the shoulders stretches the front of the neck and one person holds the arms and legs, perhaps sitting on the legs; another cares for the head and anesthetic. A short knife with two cutting edges is pushed through the skin, raphe and ligament, exactly on the median line, between the thyroid and the cricoid cartilage. He gives minute directions for the whole procedure, and the important after-care.

**Parenteral Resorption of Body Elements.**—Ziegler emphasizes the importance of this in both physiology and pathology, and the part played in it by the lymph. The lymph stream is a variable current, the direction of its flow often changing now to and now from an organ. He has demonstrated this by experiments with bird blood corpuscles, yeast, lycopodium grains, etc., and olive and sesame oil as he describes. Resorption of even large foreign bodies, such as lycopodium grains, is possible anywhere in the peritoneum. The liver, spleen, kidney or other organ may become infected through the lymph. This is the common route for tuberculosis, he says, and is probably responsible for toxins from the bowel getting into the spleen and liver.

### Monatsschrift f. Geb. u. Gynäkologie, Berlin

November, 1921, 56, No. 1-2

- Rectal Examination Intra Partum. T. Heynemann.—p. 1.  
Ditto from Bacteriologic Standpoint. Theodor and Handtmann.—p. 7.  
Frontal Presentation. H. Eymier.—p. 13.  
Management of Delivery with Frontal Presentation. A. Seitz.—p. 21.  
Vasa Praevia Impeding Delivery. E. Graff.—p. 28.  
\*Spontaneous Rupture of Uterus. E. Kreisch.—p. 34.  
\*Mechanical Treatment of Placenta Praevia. H. Baumm.—p. 36.  
\*Influence of Forceps on Fetal Mortality. F. Lönne and F. Sunkel.—p. 38.  
Secondary Abdominal Pregnancy After Rupture of Cesarean Section Scar. M. Ichenhäuser.—p. 47.  
Phototherapy of Gonorrhea in the Female. H. Guthmann.—p. 50.  
Injury of Skull by Rigidity of Os. E. Henrard.—p. 54.  
Familial Monstriparity. A. Klopstock.—p. 59.

**Spontaneous Rupture of Gravid Uterus.**—Both the 8 months' fetus and the placenta had slipped through the rupture into the abdominal cavity, but the condition was not recognized for twelve days as there was comparatively little internal hemorrhage. Sepsis developed, but very slowly; the presumptive diagnosis had been cancer.

**Treatment of Placenta Praevia.**—Baumm declares that the practice of drawing the fetus' breech down to arrest hemorrhage from placenta praevia has been the routine procedure at the Breslau maternity for years, and with the best of results. He sees no reason for going farther afield for other measures.

**Forceps in Relation to Stillbirths.**—Forceps were used in 2.9 per cent. of 5038 deliveries at the Göttingen clinic, and 3.08 per cent. of the infants died during delivery and 0.36 a day or two later. The total mortality was thus 4.9 per cent. No injury from the forceps was observed in any instance.

### Monatsschrift für Kinderheilkunde, Berlin

September, 1921, 21, No. 6

Vegetable Extracts in Infant Feeding. Hamburger and Stransky.—p. 529.

\*Digestive Processes in the Infant Stomach. R. Pewny.—p. 548.

\*Infants of Tuberculous Mothers. K. Barchetti.—p. 563.

Orchitis Following Acute Retropharyngeal Abscess. Schober.—p. 566.

**Digestive Processes in the Infant Stomach.**—Pewny made sixty researches in thirty infants ranging from 2 to 12 months old. One infant, 8 months old, had been given for two weeks the mixed diet of an adult, which brought about increased secretion in the infant's stomach, to which it reacted with violent vomiting. Pewny assumed that when a milk diet was substituted for the heavy mixed diet, there would be no free hydrochloric acid and only a slight total acidity after twenty-four hours of the milk diet, but such was not the case. After five days of the milk diet, large quantities of free hydrochloric acid and a high total acidity were still present. On the seventeenth day, however, there was no free hydrochloric acid and the total acidity had become reduced from 60 to 8. It took several days for the milk to restore normal conditions in the infant stomach. We may, therefore, state that the glands of the infant stomach adapt themselves only gradually to a change in diet. In atrophy, dyspepsia and acute febrile affections he found subnormal values of acid and rennin and a slow increase of the rennin content as the infant recovered.

**Infants of Tuberculous Mothers.**—Barchetti reports his findings in a series of fifty-one infants of tuberculous mothers. The clinical observation extended over several months—up to one year, in some instances. The further development of the infants was controlled by reexaminations up to the second, third or fourth year. It was astonishing to note that some infants, in spite of the fact that they were for months in direct contact with the source of infection (the mother), remained free from tuberculosis. This is especially significant in view of the fact that children just beyond the period of infancy so frequently contract the disease in a tuberculous environment. What the explanation of the peculiar attitude of the infant is has not been fully settled. Pollak (1913) ascribed it to congenital immunity. If that is the case, the immunity must be temporary. Fully 27 per cent. of the infants, who, healthy at birth, were nursed and taken care of by tuberculous mothers for a long period failed to become infected, never responding positively to the skin tuberculin test. The prognosis of the infants that became infected was very grave, but not hopeless. For such, a diet rich in calories and open-air treatment are indicated.

### Münchener medizinische Wochenschrift, Munich

Nov. 11, 1921, 68, No. 45

- Arsphenamin or Serum in the Treatment of Swine Erysipelas? W. Kolle and H. Schlossberger.—p. 1439.  
Anatomy of the Centers of the Corpus Striatum. H. Spatz.—p. 1441.  
Peristalsis of the Small Intestine. G. Ganter.—p. 1447.  
Study on the Diuretic Effect of Mercury. A. Mühlhling.—p. 1447.  
Linser Method for Treatment of Syphilis. Eicke and Rose.—p. 1449.  
Fluoroscopy of Calcium Deposits in Aorta. E. Boden.—p. 1451.  
Registration of Rotation Nystagmus. Ohm.—p. 1451.  
Treatment of Pernicious Anemia by Roentgen Stimulation of Bone Marrow. O. Neu.—p. 1452.  
Two Procedures for Conservation of Complement in Wassermann Test. K. Klein.—p. 1453.  
Chickenpox plus Herpes Zoster with Paralysis of Abdominal Muscles and Diaphragm. J. Lampe.—p. 1454.  
Blood in Stools with Intestinal Parasites. N. Popowski.—p. 1455.

### Therapeutische Halbmonatshefte, Berlin

Sept. 15, 1921, 35, No. 18

- Bases of Calcium Therapy. E. Starkenstein.—p. 553. Cont'd.  
\*Anilin Dyes in Ophthalmologic Practice. W. Löhlein.—p. 561.

**Therapeutic Experiences with Anilin Dyes in Ophthalmology.**—Löhlein states that researches on the specific qualities of the various anilin dyes when employed in oph-



thalmologic practice have been begun in recent years and that some definite progress has been made, but that the investigations cannot be said as yet to have passed beyond the initial stages. This can be explained in part by the complicated chemical structure of most anilin dyes. Some but not all anilin dyes possess marked bactericidal power. Certain mixtures of anilin dyes have proved to be excellent bactericides in the treatment of infectious conditions of the eyelids and conjunctiva. In recurring erosions of the cornea, which are often resistant to treatment, scarlet red has been found to have great therapeutic value.

### Wiener klinische Wochenschrift, Vienna

Oct. 20, 1921, 34, No. 42

Biologic Utilization of Foods. L. Berzeller.—p. 507. Conc'n in 44.

\*Roentgen Irradiation in Tuberculosis of the Testis and the Epididymis. L. Freund.—p. 511.

Bassini's Operation without Detaching Sac from Spermatic Cord. H. Neuberger.—p. 512.

Effect of Lumbar Puncture on the Patellar Reflex. Kahler.—p. 513.

**Roentgen Irradiation in Tuberculosis of the Testis and the Epididymis.**—Freund reports his experiences in fifteen adult cases with fistulas in eleven. In several instances there was a concomitant tuberculous affection of the lung. Tuberculous tissue cannot be said to be especially sensitive to roentgen treatment. The favorable influence of roentgen irradiation on tuberculous processes is to be found in the stimulating effect of the rays on normal granulation, which is brought out better by small doses. Forced feeding, salt baths and phototherapy were employed as adjuvants. He concludes that roentgen irradiation in tuberculosis of the testis and the epididymis can be relied on to accomplish a radical cure provided the tuberculous processes are confined to these organs. In advanced processes that have spread to the seminal vesicles, the prostate, bladder or kidney, roentgen irradiation may at least check further development, close up fistulas and prevent the spread of the disease to the other testis. Only moderately hard rays, in small doses, distributed over a number of sittings, should be employed. Deep irradiation with extremely hard, intensive rays was found to present no advantages over the milder treatment, though the former may be indicated for tuberculous affections of the deep-lying genito-urinary organs. In some cases partial resection of the local foci may well precede roentgen irradiation.

### Zeitschrift für Geburtshilfe und Gynäk., Stuttgart

Sept. 24, 1921, 84, No. 1

\*Intra Partum Hematomas Near Uterus. W. Beckmann.—p. 603 of Vol. 83.

\*Edema in the Pregnant. K. Fink.—p. 1.

\*Estimation of Heart Sounds at Term. G. Bartram.—p. 34.

\*Operation for Vestibular Anus. W. Rübsamen.—p. 46.

\*Embedding of Ovum. A. Biedl, H. Peters and R. Hofstätter.—p. 59.

Embryology of Siren Monsters. E. Langer.—p. 131.

War and Predetermination of Sex. H. Gänssle.—p. 159.

Diphtheria Bacilli in the New-Born. H. Kritzler.—p. 179.

Raynaud's Disease and Pregnancy. P. Silberstein.—p. 208.

**Intra Partum Hematomas.**—Beckmann reports sixteen cases of vulvovaginal hematomas in four years among 25,000 gynecologic cases. Hematomas in the parametral and subperitoneal tissues are best reached by a laparotomy, draining through the vagina. Conditions generally require careful repair; in one of the four cases he describes the uterus had to be removed. "Better sacrifice the uterus than sacrifice the patient" he exclaims.

**Edema in the Pregnant.**—Fink analyzes his experiences with dropsy in 150 pregnant women and in 200 parturients. He watches out for edema by having a record kept of the circumference of the neck, upper arm and forearm, calf and ankle (reclining). The edema subsides when venesection or the death of the fetus modifies the proportions between the amounts to be eliminated and the eliminating forces, or by bed rest and restriction of the intake, thus reducing the metabolism. This allows the normal regulating apparatus—probably the thyroid—to make its influence felt anew, and the excess of salt and water is then cast off. This treatment of edema in the pregnant wards off eclampsia, which he regards as the result of edema in the brain. This explains

the cases of eclampsia without preceding symptoms of toxic action; it is difficult to reconcile such cases with the assumption of toxicosis. It explains further the convulsions with nephritis which subside after spinal puncture. Toxic symptoms may be observed with pregnancy edema and in eclampsia, but they are not the essential disturbance.

**The Fetal Heart Sounds.**—Bartram emphasizes the necessity for bearing in mind the possibility that a slowing of the heart sounds during delivery may be due to pressure on the brain, requiring the hastening of the delivery. On the other hand, we must realize that any of our measures increasing the pressure on the brain might prove disastrous.

**Vestibular Anus.**—Rübsamen gives an illustrated description of a case of imperforate anus with the rectum opening into the urogenital sinus. His patient was at the seventh month of her first pregnancy. In a second case there was a normal anus. His method of shifting the sphincter of the anus, which has proved effectual in rectovaginal fistulas from trauma or radium injury, seemed to answer the purpose perfectly also in these vestibular anus cases.

**Embedding of the Ovum.**—Over 72 pages are devoted to this report of experimental research on the embedding of the ovum and its development in the uterus, the formation of placentomas, and the migration of the ovum in rabbits, with 32 photomicrograms.

### Zeitschrift für Kinderheilkunde, Berlin

Dec. 10, 1921, 31, No. 3-4

\*Hypogalactia. R. Lederer.—p. 141 and p. 150.

Factors in Pylorostenosis in Infants. K. Heusch.—p. 158.

\*Pneumonia in the Prematurely Born. Nobel and Dabowsky.—p. 188.

Children of Wet-Nurses in Institutions. C. Coerper and L. Werner.—p. 208.

Univitelline Twins. H. Wimberger.—p. 216.

Influence of Different Infant Food Mixtures on Acid Production by

Bacterium Lactis Aerogenes. E. Wolff.—p. 226.

Tolerance of Creatin by Infants. H. Beumer.—p. 236.

Prescriptions for Children from Standpoint of Cost. S. Fink.—p. 247.

**Deficient Production of Milk.**—Lederer discusses qualitative hypogalactia and its influence on the child. In all such cases he succeeded, with a little supplementary feeding, in maintaining the mammary function until the infant was at least 6 months old.

**Diagnosis of Asthenic Pneumonia in Infants.**—Nobel and Dabowsky expatiate on the atypical findings with pneumonia in the prematurely born and much debilitated very young infants. Necropsy showed much severer changes than the clinical and roentgen findings had indicated. Meningeal symptoms are common and frequently mislead the diagnosis. Infants dying from supposed simple debility often show signs of pneumonia. Their experiences in this line compel them to urge a separate room for all maternity cases.

### Zeitschrift für urologische Chirurgie, Berlin

Dec. 15, 1921, 8, No. 3-4

Pathology of the Verumontanum. Brack.—p. 67.

\*Estimation of Blood in Hematuria. W. Schiller.—p. 76.

\*Recurrence of Hypertrophied Prostate. O. Orth.—p. 83.

\*Influence of Epididymectomy on the Prostate. H. Walthard.—p. 87.

Consequences of Ligation of Vas Deferens. E. Wehner.—p. 113.

**Estimation of Blood in Urine.**—Schiller describes a colorimetric method for estimating the amount of blood lost in hematuria.

**Recurrence After Prostatectomy.**—Orth declares that recurrence of disturbances after suprapubic and perineal prostatectomy is more common than generally believed, as the instances are not published. He insists that the conditions left after Voelcker's ischio-rectal method of prostatectomy guarantee almost certainly against recurrence. (It was described in THE JOURNAL, Feb. 12, 1921, p. 487.)

**Influence of Epididymectomy on the Prostate.**—Walthard's experiments on thirty-seven rabbits and seven controls showed very little difference in the prostate after unilateral operations on the epididymis or vas, or unilateral castration. The prostate in the young animals practically disappeared after bilateral operations of the kind, but little influence from them was apparent in the mature animals.



**Zeitschrift für Urologie, Leipzig**

1921, 15, No. 11

- \*Perirenal Inflation for Roentgenoscopy. P. Rosenstein.—p. 447.  
Roentgen-Ray Findings with Pyonephrosis. A. Mosenthal.—p. 458.  
Pyelitis, Pyelonephritis, Pyonephrosis. E. Wossidlo.—p. 461.  
Measurements in the Bladder. E. Herzberg.—p. 475.  
Treatment of Male Impotence. Orlowski.—p. 483.

**Injection of Gas to Outline the Kidney.**—Rosenstein calls his procedure pneumoradiography of the bed of the kidney. He injects oxygen for the purpose, outside of the peritoneum. From 0.5 to 1 l. is sufficient to outline the organ, as he shows with several roentgenograms and case histories. (Compare with Carelli's method mentioned editorially in *THE JOURNAL*, Oct. 1, 1921, p. 1108.)

**Zentralblatt für Chirurgie, Leipzig**

Oct. 22, 1921, 48, No. 42

- \*Conservative Operations for Gastric Ulcer. V. Schmieden.—p. 1534.  
Invagination of Intestine into Stomach after Gastro-Enterostomy. H. Schloessmann.—p. 1538.  
Invagination of Intestine into Descending Leg of Anterior Gastro-Enterostomy. L. Amberger.—p. 1541.  
"Invagination after Gastro-Enterostomy." E. Baumann.—p. 1543.  
Instrument to Aid in Splanchnicus Anesthesia. Braun.—p. 1544.  
"Conservative Treatment of Tuberculosis of the Kidney." Joseph.—p. 1545.

**More Conservative Operations for Gastric Ulcer.**—Schmieden is convinced that in the past too much of the healthy stomach wall has been sacrificed in segmental resection for gastric ulcer, and describes with eight illustrations, three methods of what he terms a staircase operation for gastric ulcers of the lesser curvature, and for saddle ulcers near the pylorus. These save a much larger portion of the stomach wall.

Oct. 29, 1921, 48, No. 43

- \*Operation for Retention of Testis. H. Küttner.—p. 1582.  
Ulcus Simplex of the Intestine. E. Makai.—p. 1583.  
Covering Cystic Duct Stump with Round Ligament. Plenz.—p. 1585.  
\*Roentgen Irradiation in Tuberculosis. W. Vollhardt.—p. 1586.  
Progress in Rectoscopy and Sigmoidoscopy. E. Rehn.—p. 1588.  
Dubs' "Scaphoid" Goitre Sound. A. Fonio.—p. 1591.

**Division of Spermatic Vessels in Operating for Undescended Testis.**—Küttner reports two cases in which division of the spermatic vessels according to Bevan resulted in resorption of the testis, but he does not think that this observation should discredit the operation. In bilateral cases it may be well not to operate on both sides at the same time, if these vessels must be divided. He emphasizes that the operation is indicated only in high retention, and not then if simpler methods will serve the purpose.

**Injuries from Roentgen Irradiation in Tuberculosis.**—Vollhardt reports two cases in which, in his opinion, the fatal general tuberculous infection that appeared shortly after roentgen irradiation of a bone process must be regarded as the immediate result of such irradiation. He warns against the danger of too heavy irradiation in surgical tuberculosis in children. He also urges that cases similar to the two he reports be made public in order that more light may be thrown on this important branch of therapy.

**Zentralblatt für Gynäkologie, Leipzig**

Oct. 15, 1921, 45, No. 41

- \*The Technic of Collifixatio Uteri. J. Halban.—p. 1477.  
Repeated Extra-Uterine Pregnancy. T. Gudden.—p. 1479.  
Fatal Hemorrhage After Abortion. E. E. Pribram.—p. 1483.  
\*Thermopenetration for Gonorrhea in Women. I. von Büben.—p. 1485.  
A Congenital Diaphragmatic Hernia. R. Cohn-Czempin.—p. 1490.  
Two Cases of Artificial Vagina. Wallerstein.—p. 1492.

**The Technic of Collifixatio Uteri.**—Halban describes the method he has used for many years in dealing operatively with all forms of prolapsed uterus. He has secured excellent results in 94.3 per cent. of his cases.

**Thermopenetration in the Treatment of Gonorrhea in Women.**—Von Büben admits that not every case of gonorrhea in women can be cured by means of thermopenetration, but he has found it a valuable aid; in fact, in a number of cases a cure was accomplished after various other methods had failed. Nevertheless, it must be recognized that gonorrhea in women remains still one of the difficult problems for the practitioner.

Oct. 22, 1921, 45, No. 42

- Origin of Pregnancy Toxicoses. K. v. Oettingen.—p. 1510.  
\*Clinical Aspects of Myoma. J. Halban.—p. 1517.  
\*Rapid Growth of Myomas. H. Graebke.—p. 1521.  
\*Partial Symphysiectomy by the Costa Method. A. Loschi.—p. 1523.  
Prophylactic Indications for Cesarean Section. Schiffmann.—p. 1527.  
Note on Cause of Vomiting in Pregnancy. M. Schwab.—p. 1535.

**Clinical Aspects of Myomas.**—Halban relates that in one case of uterine myoma the tumor had developed between the two layers of the left broad ligament. He divided the tube and the round ligament, and he could then easily lift the tumor from its bed and extirpate it along with the uterus. He examined the bed of the wound but could discover no trace of hemorrhage. As a matter of precaution, however, he placed a drain between the two layers of the broad ligament, on the floor of the myoma bed, and carried it out through the vagina. Twenty hours later the patient complained of excruciating pains on the left side. The fact that the drain in the vagina was comparatively dry seemed to oppose the idea of postoperative hemorrhage. Examination revealed great tenderness in the left lower abdomen and also a corresponding rigidity, which left no doubt that a hemorrhage into the floor of the wound had occurred. On relaparotomy, the intraligamentous space was found filled with coagulated blood, which was removed. No bleeding vessel could be discovered, but the internal hypogastric artery was ligated, and uneventful recovery followed. Halban had a similar experience in a case of myoma of the cervix. Since these experiences he has made it a rule in every case of a good-sized, intraligamentous tumor to ligate the hypogastric artery, as a prophylactic measure, immediately after removal of the tumor. The intervention is a slight one and not only gives the operator a sense of security, but also seems to guarantee an especially favorable course, as blood does not collect between the layers of the broad ligament.

**Rapid Growth of Myomas in the Uterus Following Roentgen Irradiation.**—Graebke states that he finds few references in the literature in regard to the rate of growth of tumors. He reports a case in which a myoma that was not yet demonstrable clinically developed into a tumor, weighing 39 gm., within three months after roentgen irradiation to arrest climacteric hemorrhage.

**Partial Symphysiectomy by the Costa Method.**—Loschi has employed in two cases Costa's operation, which consists in excision of the upper posterior portion of the symphysis to enlarge the pelvic inlet. (Described in *THE JOURNAL*, Oct. 8, 1921, p. 1213.) Loschi operated thus, during childbirth, on two women with a marked pelvic defect and the results were excellent. The effect of the operation is permanent, and it can be done at any time. In the case of a flat pelvis, when the difference between the true conjugate and the diameter of the fetal head is slight (between 8 and 9 mm.) the best results are securable, though the operation may be indicated occasionally when there is a still greater difference. The operation can be quickly performed, without hemorrhage; causes no extensive injuries, and may be undertaken even in the presence of exhaustion. Danger from infection is not great, so that the operation may be performed even in cases in which infection is suspected. Two illustrations show the technic.

**Zentralblatt für innere Medizin, Leipzig**

Oct. 15, 1921, 42, No. 41

- The Increase of Liver Affections. W. Gottstein.—p. 801.

Oct. 22, 1921, 42, No. 42

- \*Mitral Stenosis and Congenital Syphilis. L. Hahn.—p. 818.

Nov. 5, 1921, 42, No. 44

- Influence of Alcohol on Cardiac Arrhythmia. P. Engelen.—p. 857.

**Mitral Stenosis in Relation to Congenital Syphilis.**—Hahn reports the results of his researches on 130 cases of congenital syphilis and syphilitic fetal injuries. He found in from 80 to 90 per cent. of the cases a pure type of mitral stenosis, which, in agreement with Fournier, he regards as evidence of retarded growth. The subjective symptoms are very slight, and decompensation is never observed unless the stability of the anatomic condition is disturbed by bacterial



infection of the valve. He emphasizes the rôle played by syphilitic fetal injuries in connection with the status degenerativus. The subjective symptoms appear mainly in the form of parasyphilitic angiopathy, and that is what the patient is usually treated for. In addition to iodine therapy, Hahn has found papaverin by mouth (and in coronary crises, used intravenously) of great value.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 22, 1921, 2, No. 17

\*Painless Childbirth. W. M. J. Schellekens.—p. 2060.

\*Formation of Gallstones. N. A. Bolt and P. A. Heeres.—p. 2074.

\*The Arthritic Diathesis. H. Bolten.—p. 2083.

Case of Typhoid Spondylitis. P. Boot.—p. 2089.

**Painless Childbirth.**—Schellekens gives the reasons for his hope that the twilight sleep method will never get a foothold in the Netherlands, and he denounces any form of general anesthesia as dangerous for the child. His experience with sacral anesthesia, however, has been quite favorable, as he explains. He has applied it to 5 primiparas and 3 multiparas. In 2 other cases the child was born before the effect of the anesthetic was felt; this requires from ten to twenty minutes. In all the cases the sensibility was materially reduced and although the contractions of the uterus were felt, it was merely a dull sensation of pressure, even when the skull was passing, not a sensation of pain. He followed the epidural injection method, injecting 20 c.c. of a 2 per cent. solution of procain, with a little epinephrin, through the sacral opening. His patients lay on the right side, the knees drawn up as high as possible, the lumbar region on the edge of the bed. The multiparas were emphatic in their appreciation of the painless course of the delivery. The difficulty is to know when to make the injection. The tendency is for it to be applied too early with the primiparas and too late with the multiparas. He gave a second injection (10 c.c.) in 2 cases. Not the slightest effect on the child could be detected. A great advantage of this method is the relaxation of the muscles of the pelvic floor, and the possibility of painless suturing of tears at once, with the muscles thus relaxed. It also facilitates rectal examination. The last patient in his series was a woman with vaginismus; labor contractions had been weak and sluggish for two and a half days before the os was fully dilated. As the fetal heart sounds were good, he then injected a pituitary preparation and the labor contractions became at once stronger and more frequent, and he applied the epidural injection. In an hour the skull appeared and the child was delivered after the contracted vagina had been slit by a deep incision on each side. The child could not be revived from its asphyxia, and it died in forty-five minutes. He queries whether the pituitary extract or the protracted labor was responsible for this, declaring that the sacral anesthesia cannot be incriminated in any way. The vaginismus had prevented internal examination in this case.

**Formation of Gallstones.**—This communication from the physiology laboratory of the university of Groningen reports extensive physical-chemical research on the formation of gallstones in the perfused frog liver and ducts. Addition of lecithin to the perfusing fluid seemed to act against production of concretions. It seems to act like a protecting colloid.

**The Arthritic Diathesis.**—Bolten presents an array of data to sustain the theory that all the symptoms of the arthritic diathesis are the result of congenital inferiority of the sympathetic nervous system. This may entail abnormal conditions in purin metabolism, and the abnormal cleavage products irritate the bronchial mucosa, joints, etc. Gout is thus essentially a neurosis. In a case described, the man presented in turn tachycardia, pain and swelling of the joints, cyanosis of the fingers, diarrhea of the colica mucosa type, and periods of extreme depression. He was a typical neurasthenic like his father and grandfather before him, but no albumin or sugar could ever be found in his urine.

### Hygiea, Stockholm

Nov. 16, 1921, 83, No. 21

\*Epidemic Encephalitis. C. Kling, H. Davide and Liljenquist.—p. 705.  
\*Privileged Communications and the Courts. H. Kjerrulf.—p. 721.

**Experimental Encephalitis in the Rabbit.**—Kling and his co-workers inoculated rabbits with brain substance or nasopharyngeal secretions from cases of epidemic encephalitis and some of the animals presented symptoms thereafter like those observed in the human cases. Among the symptoms were spastic states, catatonia, symptoms like those of paralysis agitans, convulsions and intense salivation. The histologic findings resemble those in man even more closely. The course was relatively long, one, three or four months; one rabbit survived for seven months. The brain showed the characteristic changes even before any manifest symptoms had developed. It is interesting, they remark, that it is possible for the brain to be so altered and yet not present cerebral symptoms. The virulence of the human cases seemed to be reflected in the more rapid course in some of Levaditi's animals. One rabbit died in eight days that had been inoculated from a case fatal in nine days, and further passages through other rabbits proved fatal in three to six days.

### Ugeskrift for Læger, Copenhagen

Nov. 24, 1921, 83, No. 47

\*Examination of Pulse in Arrhythmia. C. Lundsgaard.—p. 1541.

Professional Dermatoses from Mineral Oils. N. Nander.—p. 1558.

**Clinical Study of the Pulse.**—Lundsgaard explains how to estimate the cases of irregular pulse in which quinidin is liable to prove effectual. He tabulates the pulse findings in several groups of cases after test exercises, and emphasizes that one single pulse reading may prove widely misleading.

Dec. 1, 1921, 83, No. 48

\*Sand Baths. E. Faber and T. Plum.—p. 1585.

Stimulating Action on Tissues of Small Doses of Roentgen Rays. H. Eiken.—p. 1593.

**Sand Baths.**—From the earliest history of man, baths of hot sand have been used to relieve bone and joint disease, especially gout and rheumatism. Faber and Plum tabulate the findings during and after the sand bath in a number of cases as regards the pulse, respiration, temperature at different points of the body, and the blood pressure, urine and changes in weight, as well as the effect on the pathologic condition. Their conclusions are to the effect that the hot sand bath seems to combine with the benefit from the heat—reducing pain and stimulating local circulation—a direct action on the muscles from the weight of the sand. This relaxes the muscle and tends to break up the vicious circle of pain and muscle contraction. This relaxing effect on the muscles from the sheer weight of the sand has been overlooked before, they think, but they regard it as an important factor in the effect, promoting resorption as well as combating the possibly unsuspected hypertonia in the muscles. Another advantage of sand baths is that they can be graduated with precision to fit conditions in the weakest. The only contraindications are febrile diseases, valvular defects, great instability of the circulation, and possibly anemia and asthenia.

Dec. 8, 1921, 83, No. 49

\*Tests for Blood in Urine. A. Johannessen.—p. 1613.

Emetin Treatment of Amebic Dysentery; Four Cases. I. Hansen.—p. 1625.

Arrangements for the Restless Insane. C. F. Melbye.—p. 1636.

**Test for Blood in Urine.**—Johannessen announces that he has succeeded in modifying the phenolphthalein test for blood in stools so that it can be used for qualitative and quantitative determination of blood in the urine. His comparative tests with this and various other technics have confirmed its superiority and reliability, simplicity, durability and the specific nature of the response. He gives the curves from some hematuria patients as he has been applying this test for more than a year. It is certainly important to know whether a patient is losing 0.1 or 20 c.c. of blood in his daily urine, and whether the hematuria is constant or intermittent, and increasing or decreasing. He adds 1 drop of urine to 0.5 c.c. of the phenolphthalein reagent plus 1 drop of hydrogen dioxid. If this gives a positive response, he adds water until the reaction ceases to be positive. Then the test is repeated with a drop of urine diluted one half, one fourth, one eighth, one sixteenth, etc. He estimates the tint at the end of one minute, comparing it with a standard test copper solution.



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## THE RELATION OF LABYRINTHINE TONUS TO MUSCLE TONUS

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CHICAGO

It is generally recognized that afferent nerve impulses coming from the labyrinth act reflexly on certain muscles of the body to keep these muscles in a continuous state of tension. Ewald<sup>1</sup> noted that, after unilateral labyrinthine destruction, there was a lack of precision and a diminution of strength in certain striated muscles, and formulated his hypothesis of labyrinthine tonus. It is also recognized that nerve impulses modifying this state of tension may come from other peripheral sources as well as from certain areas in the central nervous system. Muscle tonus is a subject of great complexity and still of much obscurity, though recent work has helped to a better understanding. A knowledge of what tonus implies is of fundamental importance to an understanding of the physiology of the labyrinth. On such an understanding must be based the interpretation of many of the disturbances observed in pathologic lesions involving the vestibular nerve endings and of its central pathway, and the just appreciation of the value of many of the tests we employ in normal and defective labyrinthine conditions.

Two questions present themselves: (1) What is muscle tonus? (2) What relation has the labyrinth to muscle tonus?

### MUSCLE TONUS

Tonus is the slight persistent tension which is characteristic of healthy muscle, and its loss or diminution is shown by an alteration in the normal attitude or gait or muscle power of the animal. It is present in unaltered amount in various lengths of the muscle, and so a muscle may carry the same weight with different lengths.

A basic conception of muscle tonus appears to be best obtained by observing the action of certain muscles in invertebrates. In many of these, certain muscles are differentiated to give movement, while others are differentiated to secure a persistent tension or fixation. An example of this differentiation is seen in the adductor muscles of mollusks. In mollusks an elastic ligament opens the shell, an adductor muscle closes it. It is common knowledge how difficult it is to open the shell of a bivalve, such as the oyster shell. There is sufficient evidence to show that this is not due to the action of a powerful muscle. The following account

of von Uexküll's work from Bayliss<sup>2</sup> gives one a clear conception of this action and an interpretation of it:

If one takes a normal pecten out of the water, it gives two or three flaps with its shells before permanently closing them. If while it is open, a piece of wood is pushed between the shells, these close and hit upon the wood with so powerful a crash that their edges are splintered. The wood is then held as in a vise. One can, however, pull it out by twisting it about backward and forward, and then one is surprised to see that the shell remains motionless, just as would the jaws of a vise if an object clamped between them had been forced out. The shell movement shows not the least degree of elasticity. The muscular fibers seem to have been suddenly frozen solid. If one next tries to open the shell, no effect can be produced, but even the pressure of a finger is sufficient to press them nearer together, and in this position they remain fixed again, so that they cannot be brought back. The nearest mechanical illustration that can be given is that of two racks with saw teeth; these will glide over one another if pulled in the direction of the arrow [diagram, Bayliss, p. 534], but resist any pull in the opposite direction. The fact that the animal itself can allow the shells to open shows that the "catch" can be removed by some means.

Two points of importance must here be noted: (1) If weights be applied to the shell in any degree of this contracture, no increased metabolism and no fatigue can be demonstrated even after days. (2) The muscle of the shell can hold up a weight it cannot raise. In *Pecten* the adductor muscle can be shown to consist of two parts called by von Uexküll the motor muscle and the catch muscle, each with separate nerves. If the catch muscle be cut, the motor muscle when excited can close the shell, which remains closed so long as the stimulation lasts; then the elastic ligament pulls it open. "If the catch muscle be cut through while the shell is closed, the other muscle is unable to keep it closed; whereas if the motor muscle be cut, the shell remains closed."<sup>3</sup>

In *Echinus*, the sea urchin, a similar differentiation of muscle can be seen. The echinus creeps forward by the pull of its tube feet assisted by the action of spines set in ball and socket joints. Each spine is provided with two muscles, one which moves the spine and the other which fixes the spine in the position to which it has been brought by the muscle of movement. In each pull forward the spine is so placed as to prop the weight of the body, and is fixed in a position of advantage to aid further progression.<sup>4</sup>

In vertebrates, no such differentiation of muscles of movement and muscles of fixation can be demonstrated. But a moment's thought will show that there is differentiation or duality of function. As in particular

2. Bayliss: Principles of General Physiology, London, 1915, p. 534.

3. Bayliss: Principles of General Physiology, p. 536.

4. Sherrington: Postural Activity of Muscle and Nerve, Brain 38: 203, 1915.

1. Ewald: Physiologische Untersuchungen über das Endorgan des Nervus Octavus, Wiesbaden, 1892.



groups of invertebrate muscles so in groups of vertebrate muscles, it is certain one can distinguish two separate functions: (1) movement, and (2) fixation to give a definite and prolonged pose. Certain muscles incline more to one phase than to the other. For instance, certain muscles, e. g., sphincters, appear to be more tension or postural muscles, muscles whose prime function seems to be more to secure a certain permanent fixation of form and pressure than to produce movement. Further, in vertebrates the skeletal muscles are capable of both postural fixation and of motion. Thus, in a definite action one group may show fixation of attitude or posture while another shows movement and definite action, e. g., an animal scratching an irritant off its neck. While the evidence of duality of muscle function in vertebrates appears satisfactorily demonstrated, the evidence in favor of a duality of nerve source for these functions, somatic and sympathetic, does not appear to be established, and will be referred to later.

Experimental evidence placing tonus of muscle on a scientific basis dates back to the article of Brondgeest<sup>5</sup> in 1860. Brondgeest showed that the most important source of tonicity for muscles of the limbs is afferent impulses originating in the limb itself. Sherrington added largely to our knowledge of tonicity by his study of muscle tonus in decerebrate mammals. In decerebrate animals, after section of the brain in front of the corpora quadrigemina, while respiration and pulse are unaffected, certain groups of muscles become rigid—a persistent tonic spasm; the elbows and knees are extended and the head and neck are retracted. The muscles chiefly affected are the extensors of the elbow, knee, shoulder and ankle, and the retractors of the head. The hand and foot are little affected, and the fingers and toes not at all.<sup>6</sup> The decerebration has removed motor control probably from the spinal motor centers, and so the constant tonic reflexes coming chiefly from peripheral sources are allowed full action on the motor centers, and the muscles are seen in a state of uncontrolled tonic activity. Sherrington showed that, in skeletal muscles, the muscle tension we are here concerned with is not uniformly distributed, but is confined to muscles whose function it is to support the body in its normal attitude. Thus we find these reflex stimuli to maintain muscle tension distributed to the muscles which keep the vertebral column erect (as in standing), which hold up the head (as the neck muscles), which close the jaw, to the extensors of the limbs which support the body, and to the muscles which bend the back (opisthotonos). In short, this tonus is confined to muscles which maintain the erect posture of the animal, which counteract gravity, which prevent the animal sinking to the ground, which maintain it in the upright posture. The muscles which act in the opposite direction do not possess it. Sherrington called this postural tonus. The following he<sup>7</sup> gives as an illustration:

If the head of the reflexly standing decerebrate preparation be forcibly flexed, the postural contraction of the extensor muscles of the fore limbs is inhibited, and the animal's fore quarters sink, while at the same time the postural contraction of the extensors of the hind limbs increases, raising the hind quarters. The preparation thus assumes the attitude of a cat looking under a shelf. On the contrary, if the head of the preparation is passively tilted up and back, the postural con-

traction of the extensor muscles of the fore limbs increases, raising the fore quarters, and at the same time the postural contraction of the extensors of the hind limbs is diminished so that the hind quarters sink. The preparation thus assumes the posture of a cat looking up to a shelf. There goes, further, with each main posture of the head, even passively imposed upon the decerebrate preparation, a corresponding reflex modification of the reflex posture of the limbs.

It is obvious that a man standing erect has an attitude different from that which gravity would give were certain muscles (antigravity muscles) not acting. Further, he is constantly placing his body in attitudes or postures which call for modifications of the erect position. To maintain the body in such altered postures with varying degrees of joint flexion there must be a readjustment of certain muscle groups, some becoming longer, some shorter. In each new position the tension of the muscle, as shown by its capacity to bear the superincumbent load, is unaltered. The tension tested by the hardness of the muscle, estimated by the degree of denting to various weights placed on its fleshy part, is practically the same in all postural lengths. In short, certain skeletal muscles can adjust themselves to different lengths, and at each different length can counteract the same weight. This tension remains unaltered over a long range of length of muscle. But the tension which the muscle can maintain in this postural attitude is less than the maximum tension which it can exert in executing movement. The two differ so far that, while the former cannot so readily be fatigued, the latter, voluntary tension, can be fatigued.

Tonus is essentially an altered state of the muscle itself. But how in the muscle such definite tension for an indefinite period apparently without fatigue or increased metabolism is brought about we can at present only surmise.

Though we do not know what the essential change in the muscle may be, we do know that this state and change of state can be produced reflexly by nerve stimuli. "Postural tonus is the expression of a neural discharge concerned with the maintenance of attitude."<sup>8</sup> In vertebrates the nerve reflex on which this persistent tonus depends chiefly comes from the antigravity muscles themselves, for section of the posterior roots of the nerves from these muscles immediately destroys the tonus. The stimulus from the muscle and its tendon comes through the afferent spinal nerves and the dorsal spinal root. This is easily seen in the frog in which the afferent spinal nerves of one leg are cut. If the frog be then held vertical, the limb corresponding to the sectioned nerves is held less flexed than the other, an attitude which can be shown to be due to diminished tone in the muscle of that limb. But the postural tonus can be modified by reflex stimuli from other sources—one important source is the otic labyrinth.

In nondecerebrate animals, the labyrinthine influence in muscle tension was shown in Ewald's experiment on the beak of a pigeon. After splitting the lower bill of a pigeon into equal parts and destroying the labyrinth on one side, Ewald<sup>9</sup> found that, though the closure of the bill was usually well executed, the maintenance of that closure was not so well performed on the side of the labyrinthine lesion, nor could that side maintain so well a pull on it of a weight. He also found that there was in the pigeon a similar weakness in the limb of the operated side to maintain a load.

5. Brondgeest: Ueber den Tonus der willkürlichen Muskeln, Arch. f. die Holland Beitr. f. Natur u. Heilkunde 2: 329, 1860.

6. Sherrington: Schäfer's Physiology 2: 914, and Luciani: Human Physiology, London 3: 518, 1915.

7. Sherrington: Brain 38: 198, 1915.

8. Sherrington: Integrative Action of the Nervous System, New York, 1906, p. 340.

9. Ewald: Physiologische Untersuchungen über das Endorgan des Nervus Octavus, Wiesbaden, 1892, p. 181.



As a result of experimental work<sup>10</sup> published in 1912 and 1914, it was shown that destruction of the labyrinth in dogs produced a permanent change of attitude, especially of the head. If one labyrinth be removed, there is a permanent torsion of the head to the injured side, the occiput turned down and rotated forward, and there is a leaning, particularly of the anterior part of the body, to this side. This we believed was due to overactivity of the other labyrinth (increased tension). If both labyrinths have been removed at one time, there is no such torsion of the head or inclination of the body to one side. Further, it was shown that the attitude of the head produced by unilateral destruction could be restored to normal by destruction of the other labyrinth. It was also shown that such torsion did not follow complete removal of the cerebellum, but did occur when the labyrinth was destroyed subsequent to cerebellar removal, both of which set of experiments showed that the pathway from the labyrinth to the neck muscles did not pass through the cerebellum. We further showed that, so far as the influence of the labyrinth on the tension of the eye muscles was concerned, the cerebellum played no part, for removal of the cerebellum did not alter the result. Dr. Prince later showed that the altered attitude could be restored to normal by section of the posterior roots of the cervical nerves on the opposite side. Briefly, then, the torsion of the head in the dog or cat persists after unilateral labyrinthine destruction, but can be reduced or abolished if, at a later period, (a) the other labyrinth be destroyed, or (b) the afferent nerves of the neck muscles on the opposite side be cut. If the labyrinth be removed and the dorsal cervical roots cut on the same side, the torsion following the first is accentuated by the second.

This torsion of the head is much more marked in animals than in man. In the latter, the torsion is negligible, control from the higher centers and compensation being much more effective. It is interesting here to note that it has been demonstrated that tonic impulses from a peripheral source can be reenforced. De Kleijn has shown that in rabbits, though the tonic reflexes from the neck muscles are normally very feeble compared with those from the labyrinth, yet after bilateral labyrinthine removal these tonic neck reflexes are very distinct and energetic.

Our knowledge of tonus, and not least of labyrinthine tonus, has been greatly advanced by a series of investigations carried on at the University of Utrecht by Magnus, de Kleijn and their co-workers.<sup>11</sup> As has been said above, in decerebrate animals the removal of motor control allows the free action of the peripheral reflex sources of tonus to be observed in decerebrate animals. Magnus and de Kleijn showed that in the decerebrate animal the extensor tonus of the limbs can be modified by different attitudes of the head in space. They showed the relative values of the reflex sources in the labyrinth and neck muscles from which these modifications come. They were able to study these two factors separately, (1) eliminating the labyrinth by destruction and (2) getting rid of the neck reflexes by encasing the animal in a plaster cast. With the labyrinth destroyed, the animal showed good extensor rigidity and tendon reflexes, and there was no

alteration in this rigidity when the body as a whole underwent a change in space, though a change did occur so soon as a movement of the head on the neck occurred. With the animal encased in plaster eliminating the neck reflexes, the extensor rigidity was modified by a change in space of the animal as a whole, always excepting rotation in a horizontal plane, that is, relative to gravity. This alteration of the head in space shortened or lengthened the limbs, and the attitude so assumed was maintained (postural tonus) so long as the head was held in this particular posture. In different positions of the animal the same head movement may have different and even opposite effects according to which of these factors, labyrinth or neck reflex, is predominant.

In the head segment there are two important sources of this tonic reflex action, the labyrinth and the neck muscles. These have to be taken into account in all postural reflex movements of the body when the head is displaced. The labyrinth reacts to gravitational force and is concerned with the adjustment of the head, of the eyes and of the jaw to the vertical. With the adjustment of the head segment must necessarily come an adjustment of the vertebral column and limbs. The neck muscle reflexes have to do with the movements of the head relative to the body.

To the otologist there is one group of muscles in which compensatory movements (kinetic) following altered position of the head in space and the persistent tension (static) which remains unaltered as long as the head remains in this position (postural tonus) are of great interest, namely, in the extrinsic muscles of the eyes. To understand the purpose of this "special example of corrective reflexes" it is necessary to consider the physiologic basis of single vision with two eyes. This depends on the object's falling on identical or corresponding points of the retina. If one retina be placed in front of the other with the fovea in contact and the temporal half of the one retina covering the nasal half of the other, any point of one will cover a corresponding point of the other.<sup>12</sup> In the head, the eyeballs, though freely movable, naturally tend to assume a position—primary position of the eyes—in which, in man, the lines of sight are parallel and the plane of sight horizontal. This attitude is seen in deep narcosis, and also after death before rigor mortis. In this primary position of the eyes, the tension in the various eye muscles is in equilibrium, and this balance is brought about as is balance elsewhere by the coordination of reflexes from the retina, from the labyrinth, and the kinesthetic impulses from muscles of the eye and neck.<sup>13</sup>

The functional activity of the eye depends on its constant relation to the horizontal. No matter how the head shifts, this adjustment to the horizontal must be insured and must be retained as long as the attitude of the head is in this posture. The existence of this adjustment and the maintenance of gaze<sup>8</sup> within wide limits is an every day experience and is a necessity to normal existence. When we alter and assume any head position, the eyes automatically modify the position of the visual field.

As has been shown, the attitude of the head through tonic reflexes from the labyrinth and from the neck muscles acts to establish and maintain the attitude of the animal to the vertical. In the maintenance of the

10. Wilson and Pike: The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and Their Relation to the Motor System, *Phil. Tr. Roy. Soc. London* 803: 127-160, 1912; The Relation of the Labyrinth to the Cerebellum and the Cerebrum, *Tr. Am. Otol. Soc.*, 1914.  
11. Magnus, de Kleijn and others: *Arch. f. d. ges. Physiol. (Pflüger's)*, 1912, 1913, 1917, 1920, 1921.

12. Schäfer: *Physiology*, Edinburgh 2: 1124, 1900.

13. Compare: Sherrington, *Integrative Action of the Nervous System*, p. 342.



attitude of the eyes to the vertical or horizontal, the labyrinth and the neck musculature act decisively on the freely movable eyeballs.

Van der Hoeve and de Kleijn studied the tonic labyrinth reflexes in the eyes of rabbits, and found that each position of the head in space gives a particular "roll" of the eyes, rotatory or vertical or a combination of these, that each position of the head in space necessitates a definite position of the eyes, and that this modified position persists as long as the head is kept in the modified position. One labyrinth influences the eyeball rotations of both eyes, but chiefly the muscles of the opposite side. After the labyrinths on both sides have been extirpated, all such tonic reflexes on the eyes from modification of the head in space cease. No law of sidewise movement of the eyes in the various positions of space could be shown. In a later paper, de Kleijn published his results in regard to tonic neck reflexes (after removal of the labyrinths). He found that to each position of the head in relation to the trunk corresponds a definite position of the eyes in the orbit. These neck reflexes are weaker than the labyrinth reflexes. But he believes that, in the rabbit, tonic action moving the eyes in the horizontal plane are chiefly influenced from the neck reflexes.

It appears, therefore, that the eyes in a particular movement of the head tend to preserve their relation to the horizontal, that is, the relation of the retina to the horizontal. Thus, in movement of the head upward the eyes roll down and within limits the fixation will persist, the fixation being determined by the desire or ability to focus on a particular object. Here the labyrinths act in keeping with the general action of proprioceptors to adjust and maintain the posture of the eyes in varying movements of the body. But if the head be turned farther so that the fixed object gradually fades away from sight, two things occur: diminution of retinal stimulation and increased tension of the eye muscles; then the eye returns to its primary position with a quick movement. In this paper we are not concerned with the question of nystagmus, which would necessitate a more detailed consideration of the results of the labyrinthine reflexes of movement (kinetic or dynamic) seen for example in rotation. We are here concerned with the tonus (persistent or static) effect, which appears to me the primary and elementary factor, in labyrinthine activity.

When one labyrinth is destroyed, this ability to posture efficiently the eye muscle is affected for a time, the duration varying with the position of the animal in the vertebrate phylum. Equilibrium is disturbed and a deviation occurs which is the primary factor in nystagmus (slow movement of nystagmus). But the normal association of binocular movement is maintained. This deviation is caused by tonic reflexes from the intact labyrinth, and remains until compensation occurs. It therefore takes some time for the eyes to regain and retain the normal posture—a posture which has lost one of the factors essential to its maintenance. Even after the nystagmus has disappeared and the deviation has been corrected, I have seen the recurrence of the deviation and of the nystagmus by placing the animal in a position unusual to it, *e. g.*, on its back. Later, however, this also is corrected.

#### THE MEASUREMENT OF TONUS

Attempts to estimate the degree of tonus present in a muscle have proved exceedingly unsatisfactory. The steadiness and persistence of the contraction present in normal tonus in the various degrees of contraction of a

muscle render its estimation difficult. I know of no method by which an accurate estimate can be made. If tonus means the postural fixation which a muscle assumes in various attitudes of the animal, it is open to doubt whether we can measure tonus. Attempts have been made to measure the degree of muscle tonus in different lengths of a muscle by the degree of weight impression (*Eindruckbarkeit*) on the muscle. It has been found that this weight impression was nearly equal for varying lengths in varying postures.<sup>14</sup>

As the tonus, however, is so markedly due to and affected by nerve influences acting reflexly from various sources, one may measure variations of tonus effects relative to a normal. Thus, a hypertonus may occur from removal of motor control which allows tonus impulses to play unimpeded on the muscles. This occurs experimentally in the decerebrate rigidity of animals, and in man it is seen when there is a lesion sufficiently gross to interfere with cortical control (spasticity). A hypotonus may occur from removal of a source of tonus stimulation, *e. g.*, the destruction of the labyrinth. In man, loss of tonus from labyrinthine destruction rapidly passes—the falling, the staggering, the nystagmus, etc. These effects, as one would expect, are more marked in the head segment. On the trunk and limb I would regard this tonus loss as a mass effect, secondary to the head. The knee jerk is related to the tone of the skeletal muscles, and an indispensable condition for the appearance of a knee jerk is tonus in the muscle. Yet I am not aware that there is any evidence of alteration of knee jerk after loss of a labyrinth. In hypotonus there is recognized an abnormal extensibility of muscles and joints, which abnormal relaxation is due undoubtedly to diminished tension in muscles and can be compared to increased movements of joints after death. The measurement of the hypotonus may be made by the excursions capacity of movements of the joints; thus, fingers may be bent back to an abnormal degree though individual movement is good. But such increased movements of joints has not been seen in labyrinthine affections, probably because the joints are primarily influenced by the proprioceptors regulating the segment to which they belong, whereas the labyrinth is primarily concerned with the head segment. The impossibility of estimating variation of labyrinthine tonus by the pressure exerted on a dynamometer will be obvious from what has been said. In regard to this it is well to recall that the maximum tension in executing a movement is greater than the tension required for posture.

#### RELATION OF POSTURAL TONUS TO THE NERVOUS SYSTEM

Tonus has been demonstrated to be distinctly under nerve influences, the chief of which arise in the muscles themselves. Lesions of the posterior roots containing the afferent nerves arising in the muscles of an extremity greatly lower or abolish the tonus of that limb. In decerebrate rigidity, section of the posterior roots of a limb abolishes the rigidity in the limb muscles. In neither case does destruction of the labyrinth abolish the rigidity of the limbs, though it can be shown to lower the tonus.

The noncontrolled tonic effect seen in decerebrate animals is destroyed not only by section of posterior roots but also by section of the spinal cord, and by section through the medulla. So the impulses coming in

14. Sherrington: Postural Activity of Muscle and Nerve, Brain 38: 201, 1915.



from the posterior roots do not immediately cross to the spinal motor nuclei but pass up the cord in the ventrolateral columns to a center in the midbrain and pons. The reflexes from all muscle sources come together in the pons and mesencephalon, since Sherrington showed in decerebrate animals that removal of the cerebellum has seldom any effect in postural tonus. Tonic impulses from the labyrinth also pass into this area, for it was shown by Dr. Pike and myself that the pathway from the labyrinth to the neck muscles and to the eye muscles does not pass through the cerebellum, and that section of the brain anterior to the eye nuclei in pons and mesencephalon does not interfere with eye deviation following labyrinthine stimulation or unilateral destruction. De Kleijn and Magnus<sup>15</sup> identified three centers in the brain stem concerned, respectively, with head and trunk movements, compensatory eye movements and positional reflexes. It will be interesting to know the relation of these to the nucleus motorius tegmenti, the primitive coordinating centers extending throughout the brain stem and including the red nucleus and Deiters' nucleus.<sup>16</sup>

We may, therefore, say that there is a tonic center in the mesencephalon, pons and medulla activated by impulses from the tonic centers in the muscles and in the labyrinth. This tonic center in the midbrain is activated as far as limbs are concerned primarily from the proprioceptors in the limbs and secondarily from the labyrinth, and so far as the head is concerned from the muscles of the cervical region and from the sensory endings in the labyrinth. In the case of the eyes, to the latter have to be added the eye muscles and retina. In the head region the labyrinth plays a more important rôle than in the limb segments. To this tonic center probably come the tonus impulses from all tonus receptors. From it there issue forth corrective effector responses. The work of this center may be automatic, but higher cortical centers can recognize its results and control its activities. The cerebellum also probably plays a part in adjusting and coordinating.

#### RÔLE OF THE SYMPATHETIC

It has been repeatedly asserted that the sympathetic nervous system plays an important rôle in tonus.<sup>17</sup> As was shown above, while duality in muscle function rests on a satisfactory basis, duality of nerve supply, somatic and sympathetic, does not appear to me to be established. That in some measure the tonus of skeletal muscles is served by the sympathetic appears to have some experimental evidence; but there is no evidence that the sympathetic nervous system influences the postural tonus of skeletal muscles in any marked degree. It is obvious from what has been said that in postural tonus the main conduction paths of the reflex arc lie outside the sympathetic system. If any connections lie within the sphere of the sympathetic, it is presumably near the muscular connections. The evidence in favor of sympathetic relationship may be summed up thus:

1. Anatomically, the presence of sympathetic fibers in voluntary muscle, as shown by a nerve fiber splitting, part going to a capillary and part to a muscle plate. It has been claimed that these fibers do not degenerate after section of the motor nerve to the muscle. The

presence of the former I demonstrated some years ago in the heart muscle,<sup>18</sup> but there the evidence appeared to me to favor a nonsympathetic origin. Further, it may well be that fibers arising in the spinal cord pass by sympathetic paths to the muscle.

2. Disappearance of tonus in the hind limb of the frog or the cat if the rami communicantes are cut. This has not been confirmed; further, the production of tonus by stimulation of the sympathetic has not been seen by several investigators.<sup>19</sup>

3. Action of epinephrin on the nerve endings of the automatic sympathetic. It has been shown that an injection of epinephrin can produce prolonged contraction without fatigue. But, as pointed out by Bayliss,<sup>20</sup> this may well be due to increased blood supply.

With such knowledge of tonus as we possess, one cannot dogmatically say that such a relationship does not exist, but one can say that it is not proven.

In man and the higher mammals, though the labyrinths add a quota to tonus activity, yet they are not essential to its presence. The higher the mammal, the less conspicuous the loss of labyrinthine tonus and the more rapid and perfect the recovery. Whether this is due to the increased compensatory activity, a factor so obvious and generally acknowledged in the development of the higher mammals, or to a retrogression of the vestibular organ, has given rise to some discussion. There appears to me but little doubt that a compensation mechanism is the factor to which the change is due, "the greater degree of adaptability on the part of the highly complex somatic motor system" of man.<sup>21</sup>

What are the agencies which set the nerve impulses in action?

It is obvious that the stimuli must come from the organism itself, since the receptors are shut off from forces external to the body (proprioceptors). Consideration of the data given above point to mass movement, weight, inertia, torsion, etc., as being the deciding factors in labyrinthine stimulation, and that mass movements under the influence of gravity are the deciding influences in labyrinthine tonus. Anatomically, the maculae of the utricle and saccule with their relation to the otoliths are well adapted to mass reaction, and the ampullae, with their relation to the semicircular canals and utricle, are well adapted to react to variations of fluid pressure. Physiologically, the experiments of Magnus and de Kleijn show clearly the influence of gravitational forces in the tonus of the trunk and limbs of decerebrate animals. Recently, Maxwell<sup>22</sup> has amplified the work of previous investigators and has shown that pressure applied to the otolith or movement of it in different directions gives in fish compensatory eye movements, and that torsion produced by rotation is the cause of action of the ampullae. In a recent publication, de Kleijn states that he produced by rotation in mice displacement of the otoliths without damage to the semicircular canals, and showed that such displacement was followed by loss of postural tonus. In regard to the anatomic source of tonus in the labyrinth, maculae<sup>23</sup> or maculae and ampullae (Maxwell), there appears at present to be disagreement.

18. Wilson, J. G.: The Nerves of the Atrioventricular Bundle, *Proc. Roy. Soc. London* **81**: 160, 1909.

19. Cobb, Stanley: *Am. J. Physiol.* **46**: 479, 1918.

20. Bayliss: *Principles of General Physiology*, p. 546.

15. De Kleijn and Magnus: Independence of the Labyrinthine Reflex on the Cerebellum and on the Position of Centers for Labyrinthine Reflexes in the Brain Stem, *Arch. f. d. ges. Physiol. (Pflüger's)* **178**: 163, 1920.

16. Herrick: *Introduction to Neurology*, 1915, p. 181.

17. De Boer: Die Bedeutung der tonischen Innervation für die Funktion der quergestreiften Muskeln, *Ztschr. f. Biol.*, 1914-1915, pp. 239-354.

21. Wilson and Pike: The Effects of Stimulation and Extirpation of the Labyrinth of the Ear and Their Relation to the Motor System, *Phil. Tr. Roy. Soc. London* **203**: 157, 1912.

22. Maxwell, S. S.: *J. Gen. Physiol.*, 1919-1920, pp. 123, 349.

23. De Kleijn and Magnus: Ueber die Funktion der Otolithen, *Arch. f. die ges. Physiol.* **186**: 1-97, 1921.



CONCLUSIONS

- 1. Tonus is a plastic state of the muscle associated with the maintenance of normal attitude.
- 2. This state is under the control of reflex nerve impulses, which automatically produce a modification of the muscle to maintain a particular attitude.
- 3. One source from which these reflex nerve impulses arise is the labyrinth.
- 4. These reflex nerve impulses, determining the amount of muscle lengthening and shortening, together with the degree of fixation, depend on antigravity impulses arising in the labyrinth.
- 5. The labyrinth is chiefly concerned with the maintenance of the attitude of the head in space. As a corollary, the labyrinth influences secondarily the muscles of the trunk and limbs.
- 6. The muscle proprioceptors are concerned with segmental posture. The labyrinth is concerned with total posture. So far as trunk and limbs are concerned, the labyrinth may be regarded as a mechanism superimposed on the segmental.
- 7. In unilateral destruction of the labyrinth, the deviation of the eyes and neck is due to tonic activity of the other labyrinth.
- 8. The stimulation of the nerves in the labyrinth is due to mass movements of the otoliths and fluids in the canals.

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HEART DISEASE IN INDUSTRY

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The real object of the Workmen's Compensation Act is to minimize incapacity arising out of and in the course of employment: to obtain the earliest possible return to work of the injured employee with the greatest possible working capacity or health. This is economic. From a medical point of view, there are other evident benefits resulting from the application of this act. Industrial medicine today embraces, in some of its questions, at least, practically all diseases. The relation of industry to heart disease will serve as a fair example.

Reviewing the records of 650 cases examined for the Massachusetts Industrial Accident Board as the impartial physician appointed under the act, I found that in 231 of them either there was an organic heart lesion or else there were symptoms directly referable to some functional disturbance, such as a marked arrhythmia with premature contractions.

There are several ways in which an occupation may injure the heart: Trauma and muscular strain may damage the tonicity or contractility, or produce an acute dilatation, when there is preexisting disease; metallic or bacterial poisons may cause or aggravate lesions of the muscle, valves or innervation; emotional stress may upset the normal rhythm. I purposely omit such unusual occurrences as ruptured valves, as they have not occurred in my series. Many of the conditions that are listed were neither caused nor unduly increased by work, while others were unaccompanied by symptoms. Both of these classes I have included because of the medical value of their statistics. Of

course, in many instances, two or more lesions were present in the same patient. For the sake of simplicity, I have, as far as possible, listed such a case under a diagnosis of the most important lesion, and in no instance have I used a record a second time under another diagnosis. All cases of doubtful diagnosis were discarded.

The total number of cases examined<sup>1</sup> was 650. The total number showing abnormal heart conditions was 231. These 231 cases may be subdivided as in the accompanying table.

ABNORMAL HEART CONDITIONS IN TWO HUNDRED AND THIRTY-ONE CASES

Condition	Number of Cases
Mitral regurgitation .....	94
Mitral stenosis .....	36
Aortic regurgitation .....	6
Aortic stenosis .....	2
Aortic and mitral regurgitation.....	5
Tricuspid regurgitation .....	1
Acute myocarditis .....	1
Paroxysmal tachycardia .....	3
Auricular fibrillation .....	28
Pulse alternation .....	2
Myocardial degeneration .....	8
Arrhythmia and premature contractions.....	39
Pericarditis (plastic) .....	2
Heart block .....	1
Coronary sclerosis .....	3

I have one case listed as acute myocarditis, and use the term because of the clinical picture of the rapidly progressive failure of a heart muscle during a general sepsis. I have included under the term auricular fibrillation only those cases showing clinically absolute irregularity, although in some this was discovered only by a comparison of the pressures of the individual beats as shown by a sphygmomanometer. By myocardial degeneration I have reference to cases in which there was no active process going on in the myocardium and there was not the irregularity or incoordination of a fibrillation, but there were signs (rapid pulse, low blood pressure, rapid exhaustion, etc.) of what Mackenzie would call "heart failure" (that is, impaired tonicity of the heart muscle).

A type of case which I have largely omitted from my list, but which merits much consideration from an industrial point of view, is that of a workman who, because of his age or other ailments, needs but slight added cause to produce permanent incapacity, or who, being incapacitated because of some temporary condition from which he recovers, finds he cannot resume his usual duties because he has apparently fallen out of the routine or "habit of work."

Further subdivision of my figures shows that of the ninety-four cases of mitral regurgitation, sixty-eight were without symptoms; twelve showed slight symptoms, and evidently with a short rest would regain full working capacity; fourteen showed moderately severe to extreme symptoms. Sixty-five of these ninety-four cases were neither caused nor unduly aggravated by the occupation of the patients. Of the remaining twenty-nine patients, seven suffered some degree of decompensation from physical exertion. There had been a preceding history of rheumatism (perhaps aggravated by trauma or exposure) in four; in two there was a definite history of sepsis from accidents, with endocarditis resulting. In one the

1. Incidentally, the type of case referred for an impartial examination is one in which there is some doubt concerning the causal connection, diagnosis, etc.



employee had contracted anthrax, from which he recovered with an incompetent mitral valve. One had suffered from brass fitters' ague; thirteen had lead poisoning; one patient attributed his symptoms to an attack of "bends," caused by too rapid decompression during caisson work.

An average made of the ages of these patients with mitral regurgitation gave no results of value in regard either to incidence of symptoms or to causation. It is, perhaps, of interest to note that eight of the cases showing slight if any symptoms occurred in men of 60 years or over.

Mitral stenosis, totaling thirty-six cases, showed no symptoms in nine cases, slight symptoms in five, and moderate to marked symptoms in twenty-two cases. Work had had no appreciable effect on the course of the disease in twenty of the cases (remembering, of course, the progressive character of this lesion because of its scar tissue). In fourteen, trauma or exertion had induced symptoms; in one case the onset of symptoms was closely connected with sepsis. In one typical case of a second degree mitral stenosis, in which symptoms had begun soon after a severe fall, the diagnosis of "ruptured mitral valve" was made at one of our hospital clinics, in spite of the fact that the employee had been able to pick himself up and continue his work for several hours.

Three of the five cases of aortic regurgitation showed cardiac symptoms. Three of the cases were undoubtedly aggravated by work.

One case of aortic stenosis was noted merely during a routine physical examination of a man suffering from a severe back-strain. The other patient described sensations of vertigo, dyspnea, pounding in his head, and ringing in his ears only when exposed to fumes set free during the manufacture of trinitrotoluene. In connection with the latter, I may mention a case of aortic and mitral regurgitation with almost identical symptoms occurring under the same working conditions. There are four other cases of aortic and mitral regurgitation in my list, two showing symptoms and two without. Three of the cases were evidently not causally related to the work of the patients. One attributed his symptoms to an attack of "bends" or compressed air sickness, as did one patient, already noted, with mitral regurgitation. (It is commonly believed that the pathology of caisson sickness lies chiefly in the absorption—and later freeing—of gases, especially nitrogen, in the blood. That the symptoms may be due to changes in blood pressure has been suggested by several observers. Thanks to the courtesy and also the help of Dr. W. J. Brickley, I recorded blood pressure findings under different atmospheric pressures in the lock of the South Boston tunnel several years ago. I was much surprised to note that the blood pressure fell as the atmospheric pressure rose, and vice versa.)

Tricuspid regurgitation is probably not uncommon to a slight degree, but the recognition of a pathologically incompetent valve is at times difficult. The one case I have included in this list showed a typically located murmur and also the venous pulse synchronous with the ventricle, as well as the marked symptoms of decompensation. It was in a man, aged 30, and the acute symptoms had undoubtedly been occasioned by severe strain.

My one case of acute myocarditis was apparently a direct result of an infected wound.

Each of the three cases of paroxysmal tachycardia gave typical symptoms. One was undoubtedly due to fright; one manifested itself after a severe fall; the third was claimed to be the result of overwork, but was accompanied by a marked digestive disturbance, overindulgence in tobacco, etc. All these patients had had two or more attacks, but denied any prior to the alleged exciting cause.

There were twenty-eight cases of auricular fibrillation. Four of the patients described no cardiac symptoms whatever; eight had indefinite or slight symptoms, and sixteen had marked symptoms. Concerning their relation to industry, twelve described either initial symptoms or else an exacerbation of preexisting symptoms following trauma or strain. In eleven there was nothing in the history to suggest causal relationship. Five showed definite plumbism.

Both cases of pulse alternation showed symptoms. In one case the heart undoubtedly had been overtaxed by muscular exertion; in the other, occupation played no part.

Obviously, all the eight cases of myocardial degeneration showed symptoms. Myocardial degeneration meaning the heart whose toxicity is below par but in which there is no valve lesion or fibrillation, it is evident that such a condition would hardly be noted unless there were symptoms at the time of examination. This suggests the importance of exercise in determining the functional ability of the heart. In six of these cases I saw no relation to the occupation of the patient; in one instance, decompensation had followed muscular strain; one patient had lead poisoning. Probably there were many cases of myocardial degeneration which I overlooked.

Simple arrhythmias are, of course, most common. In mentioning them here, I refer only to those causing symptoms and usually having rather numerous premature contractions. There is one case in my list, however, in which the condition was extreme, suggesting a fibrillation, but in which the patient had no symptoms whatever; he was 70 years of age. The latter, and twelve others, bore no relation to their occupation. The probable causative factor in the rest were, briefly: fright, nine cases; trauma, three; infection, one, and lead, six cases; and other chemicals, as arsenic, wood alcohol and illuminating gas, six. In all these cases, the symptoms were either unaffected or decreased by exercise.

Both the cases of plastic pericarditis showed moderate symptoms. One was not causally related to the occupation; the other followed directly a traumatic pleuritis.

In the case of heart block with a mild Stokes-Adams syndrome, there was a positive Wassermann reaction. The patient attributed his symptoms, however, to fright following a minor injury.

The three cases of coronary sclerosis were obviously diagnosed from their symptoms. One case could hardly be related to occupation or to any incident therein. In the other two, the initial attack was occasioned by severe strain while at work. The possible importance of this is recognized when we consider that an attack of angina pectoris affords a hyperalgesic area of tissue over the heart, and may predispose to subsequent attacks.

Summing up some of the more common injurious agents, we find that trauma is the chief factor in industry to affect the heart, occurring as it does in



forty-seven of the 231 cases. Lead, occurring in twenty-five cases of different types, and other metallic poisons in nine cases (arsenic had previously been noted by Graham Steele) suggest their probable etiology and also more energetic methods of prophylaxis. Fright, occurring in ten cases, is undoubtedly an etiologic factor in producing the arrhythmias. Caisson work may easily be a cardiac menace, and the customary examination of each workman before entrance into the lock should not be restricted to ear-drums and the upper respiratory passages, but should include a careful examination of the heart.

Much time and thought are devoted to the treatment of surgical injuries. Insurance companies have extensive orthopedic and surgical clinics, with the most modern devices for treatment. What is done for the usual heart case? Small doses of digitalis, infrequent and often incomplete examinations, and general advice about "taking it easy for a while."

In my experience, comparatively little attention is devoted to determining the functional capacity of a heart, which is the real indication of the degree of incapacity. All these examinations should, as far as possible, include a determination of the effect of exercise on the heart.

In view of the fact that most of the employees examined were supposedly incapacitated for some physical reason, it is surprising to note the large number of cases showing no cardiac symptoms. This is particularly true in regard to mitral regurgitation, in which sixty-eight of the ninety-four patients, or 72 per cent., complained of nothing referable to the heart, while twelve more had but slight symptoms.

The suggestion has several times been made of recent years that, prior to being engaged, all workmen should be subjected to a physical examination with the idea of rejecting those presumably unfit. Aside from the probable storm of protest from labor unions, etc., I feel that this might be unwise from a medical point of view. Considering the fact that the type of case which I have described is that of a laborer, it would seem that such a physical examination might exclude many who were really capable of performing their duties.

The value of graded regular exercise in the treatment of heart disease has been well demonstrated, particularly by such men as Oertels and Schott. Why cannot graded regular work be used with certain restrictions to the same effect?

In addition to the economic benefit accruing from the application of the workmen's compensation laws, it is evident that great medical benefits may be obtained. Not only does the application of this act offer an admirable means of answering many questions relative to causation, treatment and prophylaxis of disease, but also it demands that we strive to answer these questions.

31 Massachusetts Avenue.

**Requisitioning Unused Land for Playgrounds.**—Land which is not in use and which is not expected to be used in the immediate future may now be requisitioned in Austria by national, provincial or municipal authorities for use as public playgrounds, according to provisions of a law enacted by the Austrian National Assembly, July 22. The owner of the land will receive suitable compensation for its use, and the question whether requisition is permissible will be decided by the provincial government, which will also fix the amount of compensation when agreement is not reached on that point.

## METHOD OF DEALING WITH INTESTINAL LOOPS DENSELY ADHERENT TO AN UMBILICAL HERNIA \*

THOMAS S. CULLEN, M.B.

BALTIMORE

Some umbilical hernias are easily handled; others occasion the operator much concern. As I have indicated elsewhere,<sup>1</sup> after we have made the transverse or longitudinal elliptic incision through the skin and fat, and have dissected the sac free from the fascia until the outer layers of the hernial ring are exposed

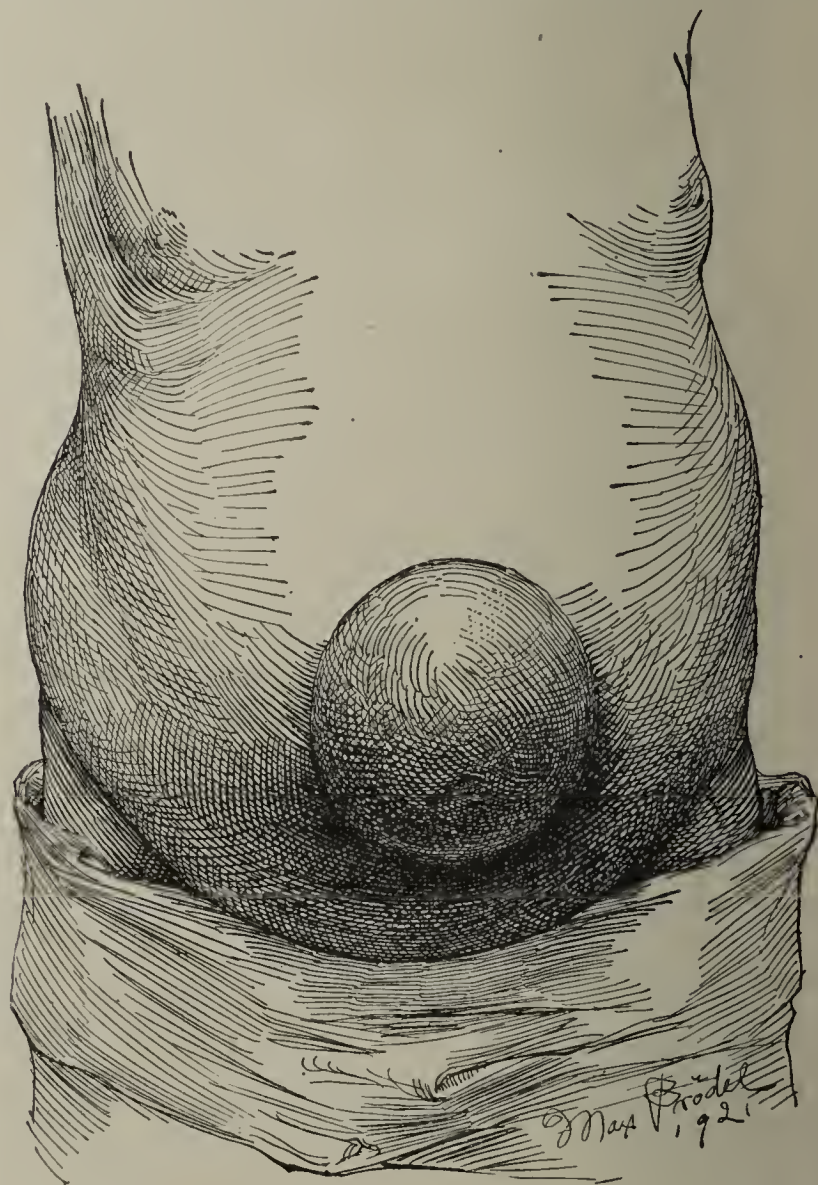


Fig. 1.—Hernia of the umbilical region as it appeared at the second operation. The walls of the hernial sac were very thin, although the patient was exceptionally stout. The hernial ring was about 4 cm. (1 1/2 inches) in diameter.

on all sides, we make a small longitudinal incision through the fascia and peritoneum just above the ring.

A finger is then introduced, and under its guidance the hernial ring is cut loose all the way around. When this has been done the operator is able to lift the hernial sac well away from the abdominal wall, and then wall it off.

When the sac contains only omentum and this is densely adherent, the incarcerated portion of it is tied off and removed with the sac. Sometimes the omentum is free and can be readily pushed back into the abdomen. The ring is then closed by the overlapping method.

\* From the Gynecological Department of the Johns Hopkins Hospital and of the Johns Hopkins University.

1. Cullen, T. S.: *The Umbilicus and Its Diseases*, Philadelphia, the W. B. Saunders Company, 1916, p. 472.



If intestinal loops are contained in the sac, it is usually an easy matter to open up the main sac and its alcoves, starting at the neck and traveling outward. Occasionally the loops have to be literally dissected away from the sac wall, leaving many bleeding points on the bowel.

In the case here reported, the intestinal adhesions were so dense, and so many loops had grown fast, that the usual procedure could not be followed. The patient was 78 years old, had had a partial obstruction for several days, and could not stand a long operation; consequently, we had to work with the utmost speed and were forced to adopt a most unusual procedure.

#### REPORT OF CASE

*History.*—I first saw the patient, Dr. D. W. C., aged 66, in December, 1906. He told me that he had had an umbilical hernia for eighteen years. It had, however, given him little trouble or discomfort until recently. The hernia was 16 cm. (6 inches) across, somewhat lobulated, and the adipose tissue around it was indurated. As the patient was very stout and not a particularly good risk, I advised against operation, especially as the rupture had occasioned him little annoyance.

I saw him again in June, 1908. He was somewhat worried, being sure that on one occasion during the preceding six months a loop of bowel had gotten into the sac. Dr. William S. Halsted also saw him and advised operation.

*Operation and Result.*—At the Church Home and Infirmary, June 17, 1908, I made a transverse, elliptic incision, dissected out the sac at the neck, nicked the fascia just above the ring, and, guided by my finger, cut the ring away from the abdominal wall. The sac was lobulated. It contained nothing but omentum. This was dissected free and returned to the peritoneal cavity. The upper flap of fascia was drawn down



Fig. 2.—An umbilical hernia in which the intestinal loops are densely adherent to the sac. The hernial sac was cut away from the abdominal wall; the hernial mass was then drawn well out of the abdomen and walled off. As it was impossible to separate the intestinal loops from the sac, the skin was dissected away from the sac. A thin fascia and the peritoneum now formed the sac wall. At this stage the sac wall was ignored and the loops of intestine were cut away from one another until all the small bowel had been unraveled. Transmitted light greatly aided us in separating the many loops. The appearance after the loops had been separated is shown in Figure 3.

over the lower one and snugly approximated with two rows of mattress sutures of a kangaroo tendon.

The patient made an excellent recovery and left the hospital at the end of three weeks. He was back at practice in less than five weeks.

When seen, May 27, 1918, the patient had been in excellent health since the last operation. For some time, however, the umbilical region had been very prominent, and a definite umbilical hernia was again present. On one occasion he apparently had a definite intestinal obstruction for twenty-four



Fig. 3.—Portions of the sac of an umbilical hernia left attached to the small bowel. Irregular patches of the hernial sac, consisting of peritoneum and fascia, are firmly fixed to many loops of small bowel. With a pair of scissors the patches are being trimmed off so that only the densely adherent portions of the sac remain. All such areas were so treated; none of them bled. The bowel was now returned to the abdomen and the hernial ring was closed. It is more than three years and a half since the operation. The patient has had no further abdominal symptoms. He is 82 years of age and feels perfectly well.

hours. Dr. George L. Wilkins, his colleague and friend, found a protrusion of the abdominal wall at the site of the old hernia. This protrusion had reached rather large proportions (Fig. 1).

May 26, the patient had intestinal obstruction. On the next day he came into the hospital. He looked perfectly well, had no fecal vomiting, and as a result of enemas some gas had been expelled. As he was now 78 years old and undoubtedly had many loops of bowel adherent to the hernial sac, I temporized. Finally, on the evening of May 29, he turned and said: "Cullen, if you don't operate, I am going to die."

*Second Operation.*—Fortunately, as the operating room was ready for another patient, no delay occurred. He was operated on within a few minutes. Under procain I encircled the sac, dissected it free down to the ring and then, with the finger in the abdomen as a guide, cut the ring loose from the abdominal wall all the way around.

The sac was then well drawn out. It contained many loops of bowel. The neck was opened for a considerable distance and laid out flat. This gave further exposure and showed that loop after loop of the bowel was densely adherent to the sac—so adherent that liberation was out of the question. I then dissected the skin away from the hernial sac, after which there was left a hernial covering consisting of peritoneum firmly fixed to a greatly attenuated layer of fascia (Fig. 2). The combined thickness of the two was not over 0.5 to 1 mm.

No further attention was paid to the sac as such. Loop after loop was separated from the adjoining one until the small bowel was completely unraveled. We now had at least from thirty to forty patches of sac adherent to intestinal loops (Fig. 3). The loose edges of these patches were now carefully trimmed off with scissors, in precisely the same manner that a patch on the inner tube of a bicycle tire is trimmed. When this was completed, we had patches of all shapes and sizes on the small bowel. The outer surfaces of the patches were smooth, whitish, and did not bleed at all.

The bowel was now pushed back into the abdomen, the omentum drawn over it, and the patient given gas for a few



moments until the ring, which measured 4 cm. (1 $\frac{1}{16}$  inches) in diameter, was closed by the usual overlapping method.

Recovery took place without incident.

*Present Condition.*—Dec. 1, 1921, the patient had just passed his eighty-second birthday; he was in excellent condition, was in active office practice, and was doing a good deal of writing; incidentally, he is the author of that well-known volume, "The Physician Himself."

COMMENT

Had we attempted to free the many loops of bowel by dissection, innumerable raw areas would have resulted, necessitating numerous black silk sutures. Their insertion would have taken much time, and the bowel would have been unduly narrowed at many points owing to the extent of the raw surfaces, with the strong probability of early intestinal obstruction. With a relatively smooth surface, such as these patches of the sac wall showed, and with no bleeding, we should hardly expect subsequent adhesions of any moment, infinitely less in any event than would occur where many raw areas would of necessity be left on the bowel had the sac been dissected loose. Furthermore, the patches would splint the bowel and tend to keep it open. On the other hand, where raw areas are present, kinks tend to develop.

Given such another case in future, we should by preference at once adopt the procedure just described.

20 East Eager Street.

were assigned to take the specimens. The outfits supplied by the New York State Department of Health Laboratory were used in collecting the blood specimens, and the examinations were made at the state department laboratory at Albany or its branch in New York City. Only one specimen was taken from each child except when the laboratory was not satisfied with its examination or, owing to some accident, the specimen was lost. Two antigens, the crude alcoholic and the cholesterinized, were used in all examinations. A total of 11,205 persons ranging in age from 2 years to 21 years, with an average of 10 years, was examined, with the findings given in Table 1.

TABLE 1.—REPORTS RECEIVED FROM THE WASSERMANN TEST OF A SINGLE SPECIMEN OF BLOOD FROM EACH OF 11,205 INDIVIDUALS

Antigen		Number	Per Cent.
A*—	C*—	7,628	68.0
A—	C±	1,753	28.5
A—	C+	787	
A±	C—	5	
A±	C±	382	
A±	C+	250	
A+	C—	2	2.3
A+	C±	6	
A+	C+	140	1.2
A4+	C4+	122	
Unsatisfactory		130	
Total		11,205†	100.0

\* A, alcoholic antigen; C, cholesterinized antigen.  
† Of the 11,205 children, 271 were black and sixteen, or 6 per cent., of these had a positive reaction of the blood.

CONGENITAL SYPHILIS IN INSTITUTIONAL CHILDREN

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"How can I assure myself that this child, whom I desire to adopt, does not have syphilis?" is the question asked of the orphanage physician. The child may be robust and apparently as nearly normal as any child in the institution, yet may the physician base an opinion on this alone? It is my aim in this paper to emphasize how essential a knowledge of the parental venereal history is to the examining physician.

It was my privilege to be associated in a minor capacity with Drs. Heyman and Raynor in making their survey of the families from which syphilitic patients came to Ward's Island. We were amazed at the large number of unsuspected cases of syphilis found among the apparently normal members of the families. Among the 254 immediate relatives of seventy-five patients, syphilis was established in fifty cases, or 19.6 per cent. Of this group, eighty-two individuals were thoroughly examined by the hospital physicians, and twenty-four, or 29.2 per cent., were found to be infected. It was difficult to find all of the relatives, because many of the families were broken up through the inability of the infected father to provide for them. This observation suggested that the children from these families, when there are any living, might be found in the orphanages. On investigation, it was found that in 1919 not all institutions of the state were making blood examinations for syphilis on admission, and therefore a proposal submitted by the Division of Venereal Diseases to assist them in making blood tests was accepted by a large number of orphanages.

In assisting the institutions to make blood tests, the usual technic employed in general practice was observed. Two specially trained physicians and nurses

It will be seen that 68 per cent. of the specimens gave a negative reaction when tested with both antigens, and that 122 specimens, or 1.1 per cent. of all, gave a four plus reaction to both antigens. This small number of positives was a great surprise, for even if the one plus specimens were added to the four plus, there would be only 2.3 per cent. of positives among this large number of orphans. Inquiry at the institutions disclosed the fact that not all of the inmates are orphans, but that some are children placed there by parents whose home is perhaps temporarily abandoned. But this explanation was not considered sufficient to account for the few positives, and the physicians were requested to make notes on the physical condition of the children.

The findings were equally surprising to the institution authorities, for some children who were found positive by blood examination had always appeared perfectly well and healthy, while some others who had histories of symptoms more or less suggestive of congenital syphilis gave negative reactions. No history of acquired syphilis could be discovered in any of the children.

More than 700 white children were given such physical examination as could be made without removing any clothing. This was not at all satisfactory, as will be appreciated by glancing over Table 2; but a more thorough examination would have required more preparation of the child, which it was feared might permit of an exaggerated opinion of the individual need of the examination and thus eventually interfere with the extension of the work. Since this was pioneer work and conducted largely as an educational measure, it was thought wise to occasion as little inconvenience to the institution authorities and the children as possible, with the hope of thus securing more hearty cooperation. The examination consisted of a careful inspection of the exposed skin surfaces, teeth and



tonsils, palpation of glands and bones, and inquiry as to hearing, eyesight and nervousness. Observation was also made as to whether or not the child was underweight.

The first observation from the table is that defects were most frequently noted among those with positive Wassermann reactions; and it should be remarked in

TABLE 2.—SUMMARY OF PHYSICAL EXAMINATIONS SHOWING OCCURRENCE OF CERTAIN DEFECTS AND BLEMISHES AS NOTED IN CURSORY INSPECTION OF 727 CHILDREN, ARRANGED IN GROUPS DETERMINED BY THE WASSERMANN REACTION OF THEIR BLOOD

	Wassermann Reaction							
	Positive		Doubtful		Negative		Total	
	No.	%	No.	%	No.	%	No.	%
Number of examinations made.....	20	..	565	.....	142	.....	727	....
Skin:								
Alopecia.....	1	5	..	.....	..	.....	1	0.14
Furuncles.....	1	5	14	2.5	..	.....	15	2.06
Eczema.....	1	5	4	0.7	..	.....	5	0.68
Herpes on lips.....	..	..	4	0.7	..	.....	4	0.55
Sores at mouth angles	2	10	9	1.6	..	.....	11	1.51
Anemia.....	4	20	9	1.6	..	.....	13	1.78
Acne.....	2	10	5	0.9	..	.....	7	0.96
Sallow.....	1	5	4	0.7	..	.....	5	0.68
Jaundiced.....	..	..	1	0.2	..	.....	1	0.14
Papular eruption....	..	..	19	3.4	2	1.4	21	2.88
Pustular eruption....	1	5	6	1.1	..	.....	7	0.96
Macular eruption....	..	..	6	1.1	..	.....	6	0.83
Warts.....	3	15	20	3.5	4	2.8	27	3.71
Skin dry and rough...	..	..	3	0.5	..	.....	3	0.41
Peeling palms of hands.....	..	..	1	0.2	..	.....	1	0.14
Scars:								
Marked furrows at angles of mouth and along lower lip margin.....	2	10	2	0.3	..	.....	4	0.55
Teeth:								
Teeth decayed.....	5	25	42	7.5	..	.....	47	6.45
Hutchinsonian teeth..	4	20	4	0.7	..	.....	8	1.10
Lower incisors notched.....	8	40	60	10.6	11	7.7	79	10.75
Upper incisors notched.....	3	15	48	8.5	16	11.3	67	9.22
Teeth pegged.....	3	15	5	0.9	..	.....	8	1.10
Teeth irregular.....	6	30	85	15.0	33	23.2	124	17.00
Teeth protruding.....	..	..	3	0.5	..	.....	3	0.41
Tonsils and Adenoids:								
Tonsils enlarged, unilateral.....	3	15	73	13.0	16	11.3	92	12.63
Tonsils enlarged, bilateral.....	11	55	150	26.5	53	37.3	214	29.40
Adenoids.....	1	5	78	13.8	41	28.8	120	16.50
Occasional sore throat.....	3	15	45	8.0	17	12.0	65	8.95
Glands:								
Suppurating.....	1	5	2	0.35	..	.....	3	0.41
Anterior cervicals enlarged.....	5	25	429	76.00	106	74.70	540	74.30
Posterior cervicals enlarged.....	2	10	175	31.00	5	3.52	182	25.00
Epitrochlears enlarged.....	7	35	42	7.43	10	7.05	59	8.10
Occipitals enlarged...	1	5	53	9.37	1	0.70	55	7.55
Inguinals enlarged...	4	20	37	6.55	2	1.42	43	5.90
Parotid enlarged.....	..	..	8	1.42	..	.....	8	1.10
Bone:								
Head squarish with prominent frontals	1	5	..	.....	..	.....	1	0.14
Upper lip slightly flat	1	5	..	.....	..	.....	1	0.14
Nose flattened.....	2	10	6	1.06	..	.....	8	1.10
Nose deviation.....	2	10	..	.....	..	.....	2	0.27
Receding forehead....	..	..	1	0.17	..	.....	1	0.14
Underweight.....	3	15	38	6.72	..	.....	41	5.64
Nervousness.....	3	15	7	1.24	..	.....	10	1.38
Hearing:								
Occasional earache...	4	20	69	12.2	16	11.25	89	12.22
Defective hearing.....	2	10	8	1.42	1	0.70	11	1.51
Eyes:								
Defective vision.....	2	10	1	0.17	..	.....	3	0.41
Corneal opacity.....	1	5	..	.....	..	.....	1	0.14
Internal strabismus...	3	15	5	0.88	..	.....	8	1.10
Sluggish reaction.....	..	..	2	0.35	..	.....	2	0.27
Eyestrain.....	1	5	1	0.17	..	.....	2	0.27
Conjunctivitis.....	1	5	..	.....	..	.....	1	0.14

this connection that the physical examination was made before the result of the blood test was known. A closer inspection of the table will bring out that while there are few undoubted syphilitic defects noted, yet certain signs which are considered suggestive of congenital syphilis did occur with considerable frequency. If the examinations could have been more thorough, undoubt-

edly more definite findings would have been reported. The only case of alopecia was found in the group having a positive Wassermann reaction. Rhagades were observed in 10 per cent. of the positives, 0.3 per cent. of the doubtful cases, and not at all among the negatives. Teeth with hutchinsonian markings were observed among the positives and doubtfuls, but not among the negatives. There was nothing distinctive in the findings from examination of the tonsils. Palpation of the glands was more fruitful. In children of these ages it is rather common to find enlargement of the anterior cervical and inguinal glands; but enlargement of the posterior cervicals, occipitals and especially the epitrochlears is looked on with suspicion by most diagnosticians. Among these children, enlargement of these glands appeared to have some relation to the finding of a positive Wassermann reaction.

On the whole, no case was diagnosed as syphilis on the clinical examination alone. After the results of the blood examinations were known and the children had been grouped as to whether they had a positive, doubtful or negative reaction, it was found that those with clinical symptoms suggestive of syphilis were not all in the positive group, but that many were included with those having a doubtful blood reaction. It was therefore decided to make a careful survey of the immediate relatives, when possible. Accordingly, a nurse and a social worker were instructed to seek out the fathers, mothers, brothers and sisters, and persuade them to have their blood tested. The families of fourteen children with positive reactions, of 263 children with doubtful reactions, and of sixty-six children with negative reactions were investigated, with the results given in Table 3.

TABLE 3.—NUMBER OF CASES OF SYPHILIS AMONG THE FATHERS, MOTHERS, SISTERS AND BROTHERS OF CHILDREN WHOSE BLOOD GAVE A POSITIVE, DOUBTFUL OR NEGATIVE REACTION TO THE WASSERMANN TEST

Cases investigated:	Wassermann Reaction		
	Positive	Doubtful	Negative
Male.....	5	122	30
Female.....	9	141	36
Total.....	14	263	66
Families investigated.....	12	173	28
Individuals interviewed.....	32	315	29
Individuals not interviewed.....	14	198	41
Families from which examinations were made	6	106	1*
Relatives tested.....	11	173	3
Positive cases found.....	9	23	1

\* It was found impossible to induce parents whose children had negative reactions to come for examination, but in this one instance the parent suspected syphilis and offered to submit to a blood test.

Here it is shown that, when the children had positive blood tests, 82 per cent. of the relatives tested were positive, or, in other words, including the fourteen children originally examined, twenty-three cases of syphilis were found among twenty-five individuals from six families. The findings in the doubtful group were equally interesting. Of the 173 relatives tested, twenty-three, or 13 per cent., were found to have definite four plus Wassermann reactions to specimens of their blood, while the reactions for the children themselves were at best classified as doubtful.

It must be remembered that not all of the relatives were examined; for example, the twelve families from which the fourteen positive children came consisted of sixty living individuals. In estimating the value of these figures, there is no reason to believe that those examined were more likely to be infected than the



others. All were examined who could be found and induced to cooperate. It is therefore only fair to estimate that in these twelve families there are approximately fifty infected individuals. The same reasoning can be applied to the relatives of the group of 263 children with doubtful reactions. They have 513 relatives (fathers, mothers, sisters and brothers) living; and since those tested were selected only because they were those who could be induced to cooperate, it is fair to estimate that approximately 13 per cent. of the 513, or sixty-six, are infected. In calculating the number of infected by this method, it is well to know that mothers as a class showed a higher percentage of infections than either fathers or brothers and sisters. This relationship is brought out by Table 4.

TABLE 4.—POSITIVE WASSERMANN REACTIONS AS DISTRIBUTED AMONG THE FATHERS, MOTHERS, BROTHERS AND SISTERS OF THE CHILDREN IN THE DOUBTFUL GROUP OF TABLE 3

	Male, Number	Female, Number	Total Number	Per Cent.
Cases investigated .....	122	141	263	
Families investigated .....	...	...	173	
Individuals interviewed .....	125	190	315	
Individuals not interviewed.....	87	111	198	
Families in which father was interviewed.....			55	
Families in which mother was interviewed.....			75	
Families in which both father and mother were interviewed .....			43	
Families from which examinations were made.....			106	
Fathers tested .....			48	100
Fathers found positive.....			7	14
Fathers found negative.....			41	86
Mothers tested .....			58	100
Mothers found positive.....			14	24
Mothers found negative.....			44	76
Children tested .....			67	100
Children found positive.....			2	3
Children found negative.....			65	97

In interpreting the data of this table, it must again be remembered that but one specimen of blood was examined from each person. No data of other examinations or observations were recorded. Attempts were made to collect the conjugal histories of these parents, but they met with no success. It is possible that there are among the negatives some who could give histories of abortion or miscarriage and who may also have syphilitic stigmas that would be detected by clinical or physical examination.

It must be admitted that, instead of finding an answer to the question which opens this paper, we seem to have raised several others. What does a doubtful Wassermann reaction signify in testing the blood of a child? Has the blood of the children now giving a doubtful Wassermann reaction been frankly positive earlier in life or will it become so in later years? Should they receive antisyphilitic treatment? Of course, in certain instances answers to these questions will be suggested by more complete examinations of the individuals. But we feel that we have demonstrated that a knowledge of the family history is eminently essential for the diagnosis of congenital syphilis.

#### SUMMARY

Blood tests should be made on all children placed in institutions at the time of their admission.

Complete physical examinations should be made at the same time. The findings in these two examinations should be considered together in determining the presence of congenital syphilis.

When the blood test is doubtful and no definite clinical findings make a positive diagnosis possible, other members of the family should be examined, especially the mother and father.

## ANOMALOUS ORIGIN OF GALLBLADDER

### REPORT OF CASE

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ST. LOUIS

In the last few years a great deal has been written about injuries of the bile ducts, and many operations for their repair have been devised. The chief reason for accidental injury at operation is that certain unusual anatomic conditions exist in the case. Every surgeon ought to be familiar with the variations that may occur and with the accidents that can happen, even though such knowledge may not prevent all accidents.

Eisendrath<sup>1</sup> recently discussed in detail the variations in the relations of the ducts and their irregularities, as well as those of the supplying arteries. He was able to find only one such case as this on record.<sup>2</sup> For this reason I report this one. Recently Walton<sup>3</sup> described a case in which the left hepatic duct emptied into the gallbladder and the common duct originated from the gallbladder. Kehr<sup>2</sup> remarks that Langenbuch has seen such a condition.

A brief review of the development of the liver and bile ducts will aid one in understanding how such a condition can arise.

The embryonic gut is derived from that part of the yolk sac included within the infolding edges of the embryo which, meeting in the ventral median line, gradually "pinch off" the included part of the yolk sac. The part of the sac included sends outgrowths forward and aft which come to be called the foregut and hindgut, while the intervening portion develops as the midgut. From the foregut, which early reaches from head to septum transversum (later diaphragm) are developed the pharynx, esophagus, stomach and duodenum. The foregut in the region of the septum transversum lies in a mesentery which attaches it not only to the posterior body wall but to the anterior body wall as well. That part of the mesentery reaching from the anterior wall to the foregut is called the ventral mesentery.

Sometime in the third week there is an evagination of the gut wall on the anterior aspect of the foregut near (or quite in) the septum transversum. This outgrowth is said to grow at first into the ventral mesentery, and later into the dorsal as well. From it are developed the liver and the biliary passages. The fact that the opening of the bile duct is on the posterior wall of the gut is explained by the rotation of the gut to the right.

The gallbladder is at an early period of its development buried in the substance of the right lobe. Whether it and the anlage of the right lobe come off by a common stalk from the main stem is not at present known, but in the case herewith reported it is evident that such a supposition would serve to explain the origin of the condition which existed.

### REPORT OF CASE

*History.*—A woman, aged 46, Russian, married, with four children, aged 19, 17, 14 and 7, complained of acute abdominal pain with nausea and constipation. There had been no mis-

1. Eisendrath, D. N.: *Anomalies of the Bile Ducts and Blood Vessels*, J. A. M. A. **71**: 864 (Sept. 14) 1918; Surg., Gynec. & Obst. **31**: 1 (July) 1920.

2. Kehr, H.: *Neue Deutsch. Chir.* **8**: 72, 1913.

3. Walton: *Brit. J. Surg.* **9**: 176 (Oct.) 1921.



carriages. The patient had never been seriously ill until the present attack. The weight was 175 pounds (79.4 kg.); temperature from 101 to 102.5; pulse from 90 to 110. The digestion had never been very good. She had had several attacks of "indigestion," and turned yellow during the last two attacks, which occurred about a year before I saw her. At present there was no jaundice. The nutrition was good. The patient was fat. There was distinct tenderness in the region of the appendix, and a mobile mass could be outlined.

*First Operation.*—This mass proved to be an acutely inflamed appendix wrapped in omentum. The whole mass was removed. At the same time examination revealed dense adhesions in the region of the gallbladder. The patient took an anesthetic badly, and the abdomen was closed without drainage and without attacking the gallbladder.

*Second Operation.*—At the end of a month a second operation was performed for the purpose of treating the gallbladder condition. It was found shrunken, thick walled and adherent to the stomach. Low down in the region of the cystic duct a hard mass was felt; some hard masses were felt in the region of the common duct. It was believed that a stone was present, and it was decided to remove the gallbladder. There was a fistula between the gallbladder and the anterior wall of the stomach near the pylorus. The opening in the stomach was closed. The gallbladder was removed from the fundus upward. No stone was found in it, the hard mass being scar tissue.

Bile flowed in rather large quantities from the liver above the spot where the mass of scar tissue had been, and examination of the specimen disclosed that a part of the duct into which the cystic duct emptied had been removed.

The stump of the severed duct was slit into the common duct, and a probe was introduced into the latter and directed upward. It turned to the left when it reached the liver, and could not be made to turn to the right as it can under ordinary circumstances. It was then clear that the duct, the cut end of which appeared on the under surface of the liver, must be the right hepatic duct. The probe could be passed into it for a distance of about 1½ inches (3.7 cm.), going into the right lobe.

I concluded that the cystic duct had emptied into the right hepatic duct and that I had removed a segment of the latter. The distance separating the cut tends was about 1¼ inches (3.2 cm.). A catheter was split in two, and one of the tails inserted in the common duct; the other was inserted in the cut end of the right hepatic duct. Each tail was sewed in place with No. 00 twenty-day catgut and the patient was turned on the face for the first twenty-four hours. All of the bile came through the abdominal wound. In three months the patient went home with a biliary fistula, although some bile was coming through the natural channels.

The patient returned eight or nine months later. The discharging sinus was still present, but the discharge failed to give a positive test for bile. Some bismuth was injected into it, and the roentgenograms showed bismuth extending up along the margin of the costal cartilages to the point at which the seventh rib joined the sternum.

*Third Operation.*—Under ether, methylene blue was injected and the sinus was followed and found to ascend as indicated by the roentgenogram. The cartilages of the ninth, eighth and seventh ribs were necrotic. The perichondrium was separated from them. There was much granulation tissue lying between it and the cartilage, and also between the periosteum and the right side of the lower end of the sternum. The necrosed cartilages were removed, as was

also that portion of the sternum undermined by granulation tissue. The granulations were scraped out, and the wound was swabbed with iodine and packed with iodoform gauze. Healing occurred very rapidly, and in four weeks the patient went home entirely well.

*Postoperative Course.*—Her health remained good until about seven months later, when she returned quite jaundiced, with chills and fever, complaining of pain in the region of the gallbladder. The stools were clay colored. Rest in bed and liquid diet were ordered; bile began to appear in the stool in a few days, and in about three weeks the patient went home feeling better.

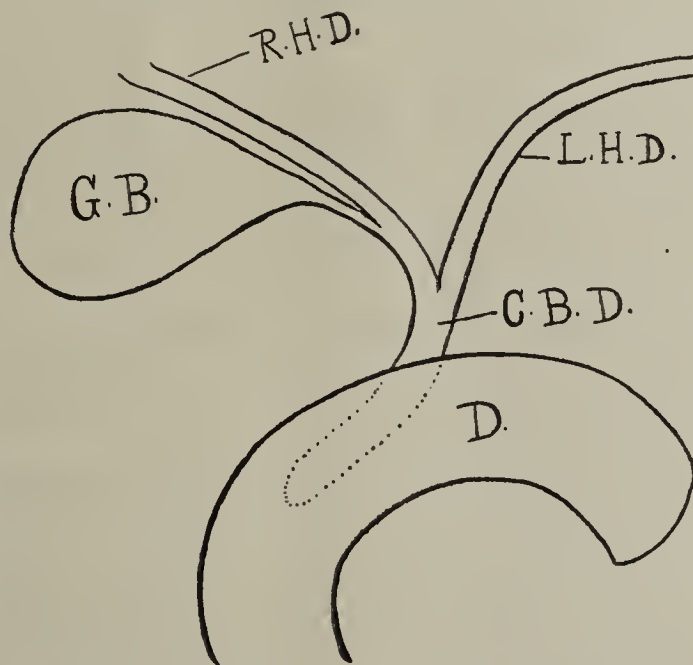
She remained fairly well for four or five months, when she again had chills and fever, epigastric pain, vomiting and nausea, with more or less constant jaundice, and she again returned to the hospital—two years after her first operation. She was darkly jaundiced, more than mulatto colored, and had clay colored stools. There was very little tenderness in the region of the gallbladder. The weight was 110 pounds (50 kg.).

*Fourth Operation.*—It was decided to open the abdomen again. Under intratracheal ether, an incision was made through the old scar. The liver, intestine and stomach were

found firmly grown together at the site of the former gallbladder. The duodenum was separated from the liver, and almost at once the knife entered a cavity from which gushed a thick, mucoid, dark colored bile. The cavity was estimated capable of holding 2 ounces (60 c.c.) and I thought that more than that amount of fluid had been mopped up. It seemed to be lined with a thin mucous membrane.

The margins of the opening into this cavity were now approximated to a similar opening in the duodenum, and the edges sewed together as in doing a gastro-enterostomy, a double row of catgut sutures being used. Healing occurred by first intention.

It is now six years since the first operation and about four years since the last. The patient believes she is much less troubled with constipation than she used to be, and she is back to her former weight.



Diagrammatic illustration of the condition found at operation: R. H. D., right hepatic duct; G. B., gallbladder, the duct of which can be seen uniting with right hepatic duct; L. H. D., left hepatic duct; C. B. D., common bile duct; D, duodenum.

The biliary cavity which I opened most probably grew out between the cut ends of the ducts, the passage here having no muscular walls. Then, as this cavity grew, it probably spread in all directions, and it is possible that in so doing its inner posterior wall came to press against the common duct, thus closing it and producing the symptoms of obstruction; but this is "not proven." The stoma made between this cavity and the duodenum was, I should say, about three-fourths inch (2 cm.) in length.

I do not know how to avoid making the same mistake again. Theoretically, it is very easy; but with tissues infiltrated the way they sometimes are, I feel that I would have to see both hepatic ducts at their point of junction and demonstrate the cystic duct below this before I could be certain that the cystic emptied into the common and not into the right hepatic duct.

St. John's Hospital.

*Care of the Eyes.*—Children who work hard at their lessons in school should not be allowed to read excessively for their own pleasure at home during the school year, nor should young girls in most instances be urged to keep up with music lessons or other extra studies outside of school hours.—W. M. Carhart, *Pub. Health*, Michigan, September, 1919.



QUANTITATIVE BACTERIOLOGY OF  
THE TONSILSH. D. CAYLOR, M.D.  
AND  
GEORGE F. DICK, M.D.  
CHICAGO

With the recognition of the tonsils as a source of infection in the body, the question of what sort of tonsils should be removed has become important. A

the first years of life in which no pathologic changes can be found, and that the use of ordinary plating methods has not been of value in determining the degree of pathologic change.

The question as to what sort of tonsils are a menace to health and should be removed and which ones are comparatively harmless is so important that an attempt was made to investigate the significance of the actual number of bacteria present in the interior of the tonsillar tissue as an index to the degree of pathologic change in the tonsil, and to determine whether or not

RELATION OF BACTERIAL CONTENT OF TONSILS TO THEIR SIZE, WEIGHT AND PATHOLOGIC ANATOMY, AND TO  
DISEASE IN OTHER PARTS OF THE BODY

Case	Clinical Symptoms	Clinical Diagnosis	Microscopic Description	Anatomic Diagnosis	Predominant Organisms	Weight of Tonsils, Gm.	Bacteria per Gm.	Estim. Total Bact. Content
1.	None, except increased size of tonsils	Hypertrophied tonsils	Lymph follicles hyperplastic; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic and nonhemolytic streptococci	3.18	400,000	1,272,000
2.	None, except increased size of tonsils	Hypertrophied tonsils	Lymph follicles hyperplastic; crypt walls infiltrated by leukocytes	Hypertrophic tonsillitis	Streptococci (hemolytic); staphylococci; Micrococcus catarrhalis	5.13	402,000	2,062,260
3.	Frequently recurring severe attacks of tonsillitis	Hypertrophied tonsils	Crypts contain leukocytes and masses of bacteria	Hypertrophic and follicular tonsillitis	Nonhemolytic streptococci; staphylococci	3.035	822,500	2,496,287
4.	Frequently recurring sore throat and enlarged cervical glands	Hypertrophied tonsils	Lymph follicles hyperplastic; crypts contain epithelium and leukocytes	Hypertrophic tonsillitis	Staphylococci; hemolytic streptococci; a small diplococcus	5.5	1,000,000	5,500,000
5.	Enlarged tonsils and cervical lymph glands	Hypertrophied tonsils	Lymph follicles hyperplastic; crypts contain masses of bacteria and leukocytes	Hypertrophic and follicular tonsillitis	Hemolytic streptococci; Bacillus mucosus	6.0	1,000,000	6,000,000
6.	Recurring sore throat	Hypertrophied tonsils	Lymph follicles hyperplastic; crypt walls infiltrated by leukocytes	Hypertrophic tonsillitis	Micrococcus catarrhalis; hemolytic streptococci	4.0	1,300,000	5,200,000
7.	Enlarged tonsils; occasional sore throat	Hypertrophied tonsils	Lymph follicles hyperplastic; leukocytes in crypts; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic streptococci, pneumococci	4.5	1,400,000	7,670,000
8.	Enlarged tonsils and cervical lymph glands	Hypertrophied tonsils	Lymph follicles hyperplastic; epithelium in crypts	Hypertrophic tonsillitis	Streptococcus viridans; staphylococci	6.845	1,590,000	10,883,550
9.	Recurring sore throat and enlarged tonsils	Hypertrophied tonsils	Lymph follicles hyperplastic; crypts contain epithelium and leukocytes	Hypertrophic tonsillitis	Hemolytic streptococci; Streptococcus viridans	6.0	2,000,000	12,000,000
10.	None, except size of tonsils; patient had exophthalmic goiter	Hypertrophied tonsils	Lymph follicles normal; leukocytes and epithelium in crypts; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic and nonhemolytic streptococci; Micrococcus catarrhalis	4.0	2,000,000	8,000,000
11.	Occasional sore throat	Hypertrophied tonsils	Lymph follicles atrophic; leukocytes in crypts; fibrous tissue increased	Chronic atrophic tonsillitis	Hemolytic streptococci; staphylococci; Streptococcus viridans	4.6	2,105,000	9,683,000
12.	Frequent sore throat	Hypertrophied tonsils	Some lymph follicles hyperplastic; others small; leukocytes and epithelium in crypts	Chronic tonsillitis	Hemolytic streptococci; Streptococcus viridans; staphylococci; Bacillus mucosus	4.4	2,500,000	11,000,000
13.	Frequent sore throat	Hypertrophied tonsils	Lymph follicles hyperplastic; increased fibrous tissue; leukocytes and epithelium in crypts	Chronic hypertrophic tonsillitis	Hemolytic streptococci; streptococcus which does not change blood; staphylococcus	4.87	3,980,000	12,175,000
14.	Frequent severe attacks of tonsillitis	Hypertrophied tonsils	Lymph follicles hyperplastic; epithelium and leukocytes in crypts	Hypertrophic tonsillitis	Hemolytic streptococci; Streptococcus viridans; staphylococci	4.61	8,108,000	37,377,000
15.	Frequent sore throat and frequent attacks of "rheumatism in back"	Slightly hypertrophied tonsils	Lymph follicles atrophic; fibrous tissue increased, obliterating normal structures	Chronic, atrophic, fibrous tonsillitis	Hemolytic streptococci; Streptococcus viridans; staphylococci; Bacillus mucosus	3.8	16,071,000	61,073,320
16.	Tonsillitis; subcutaneous abscesses	"Stumps of tonsils"	Lymph follicles hyperplastic; fibrous tissue increased; leukocytes and epithelium in crypts	Chronic inflammation in tonsillar remnants	Streptococcus viridans; few staphylococci	2.17	31,000,000	67,270,000
17.	Multiple arthritis of wrist, elbow and shoulder joints	Atrophic tonsils	Lymph follicles atrophic; fibrous tissue increased	Chronic atrophic tonsillitis	Streptococcus viridans; staphylococcus	3.2	2,930,000,000	9,376,000,000
18.	Arthritis of both shoulder joints	Hypertrophied tonsils	Lymph follicles hyperplastic; leukocytes and epithelium in crypts; fibrous tissue increased	Chronic hypertrophic tonsillitis	Hemolytic streptococcus; Streptococcus viridans; staphylococci	4.0	4,079,000,000	16,316,000,000

common way of deciding whether or not tonsils are dangerous is by their size. Another common procedure is compression of the tonsils to ascertain whether or not pus can be expressed. The bacteriologist is frequently asked to determine the presence or absence of hemolytic streptococci in the tonsils in accordance with the idea that the presence of hemolytic streptococci is an indication for removal.

It is apparent from the work of Davis<sup>1</sup> and from our own experience<sup>2</sup> that there are no tonsils beyond

tonsils with large numbers of bacteria per unit weight were more commonly associated with disease in other parts of the body than were those containing comparatively few bacteria.

The procedure was as follows: Tonsils were received in dry sterile medicine glasses, each tonsil separately; and, in order to avoid possible proliferation of bacteria, they were examined at once. They were put on a sterile wire gauze supported by a sterile tripod and washed by allowing 1 liter of sterile 0.9 per cent. salt solution from a wash bottle to run over them. Pieces of tissue from 0.2 to 1.74 gm. in weight were cut from the

1. Davis, D. J.: Experimental Study of Bacteria Isolated from Tonsils, J. A. M. A. 55: 26 (July 2) 1910.  
2. Dick, G. F.: J. Infect. Dis. 13: 273, 1913.



tonsils with sterile instruments and ground in a sterile mortar which contained a small amount of sand. Dilutions up to 1:1,000,000 were made of this material, and 1 c.c. of each dilution was added to a tube containing 10 c.c. of melted agar and 1 c.c. of human blood, and the mixture was poured into a Petri dish. After forty-eight hours' incubation, the colonies were counted with the aid of a hand lens, and the number of bacteria per gram of tonsil tissue was estimated.

Gross pathologic descriptions of the tonsils and histologic descriptions of paraffin sections from the parts not used for cultures were made.

The table shows the relation of bacterial counts to the size, weight and pathologic change in the tonsils, and to the presence of disease in other parts of the body. It also shows what type of organisms predominated in the plates.

In the series represented in the table, the tonsils from patients who complained of recurring sore throat, or who had at the time of operation enlarged cervical glands, contained from two to twenty times as many bacteria per gram as did the tonsils from patients who did not complain of sore throat or have enlarged cervical glands.

In four instances the tonsils contained more than 16,000,000 bacteria per gram, and, in three of these cases, the patients had some form of arthritis at the time of operation.

There is no apparent relation between the number of bacteria per gram of tonsil tissue and the types of organisms found predominating on the plates. Nor is there any apparent relation between the types of bacteria and the clinical condition of the patients or pathologic condition of the tonsils.

The tonsils which showed the highest bacterial content per unit weight were the relatively small tonsils in which chronic fibrous inflammatory changes had occurred. It was this type of tonsil which was associated with disease in other parts of the body. Large, spongy tonsils, rich in lymphoid tissue, usually contained a smaller number of bacteria per gram, and were less frequently accompanied by disease elsewhere than in the throat and cervical lymph glands. The examination of a single tonsillar remnant is interesting, because it contained a larger number of bacteria per gram than most of the whole tonsils examined.

#### CONCLUSIONS

The results of this work indicate that tonsils should not be regarded as harmless because they are small. It is often not possible to express pus from the smaller tonsils, because drainage of the crypts is prevented by fibrous tissue. The total bacterial content, as well as the number of bacteria per gram, may be much greater than that of large tonsils.

Quantitative bacteriology is of more aid than is qualitative bacteriology in determining the condition of tonsils that have been removed, and in determining their possible relation to disease elsewhere in the body.

637 South Wood Street.

**Venereal Diseases.**—In the 217 clinics operating under the joint control of the U. S. Public Health Service and state boards of health during October, 1919, there were 9,686 new admissions and 27,334 remaining from the previous month, making a total of 37,020 under treatment. There were 97,693 treatments administered to the patients under the care of these clinics. Of these treatments 18,072 were the administration of arsphenamin.—*Pub. Health Rep.*, Dec. 5, 1919.

## DEFINITION OF EXPERIMENTAL TYPHUS FEVER IN GUINEA-PIGS \*

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In a recent article,<sup>1</sup> I pointed out that the body of the guinea-pig reacting to the virus of typhus fever is readily invaded by a variety of bacteria whose presence complicates the typhus infection, but which have no etiologic relation to the specific disease typhus fever. In another article,<sup>2</sup> I showed that the typhus virus, when kept in a variety of culture mediums at 37 C., tends to die off rapidly: in aerobic mediums after five days and in anaerobic mediums—including the Smith-Noguchi, fresh tissue medium—after from twenty-four to forty-eight hours.

Yet Canto<sup>3</sup> has announced recently the cultivation on ascitic agar of staphylococcus-like organisms from splenic material of typhus-infected cadavers, and from the spleen of experimentally infected guinea-pigs, which organisms are considered by him to be the microbic cause of typhus fever, since with them a febrile reaction is induced in guinea-pigs. On this basis he has prepared a vaccine with which 587 typhus patients were injected. As this communication presents only one of a large number of different bacilli, cocci, spirochetes and protozoa which have been reported from time to time as the incitants of typhus fever but which do not satisfy the prerequisites essential for determining the experimental disease in animals, it is obvious that the subject of experimental typhus fever is in a state of confusion and that a clear conception of its definition is now desirable.

Our experience, covering a long period of time and a large number of animals, has taught us to regard *all* the criteria for determining experimental typhus fever in guinea-pigs to be essential in interpreting a critical experiment, for, as I shall immediately describe, each one of the conditions, by itself, may be so obscured by experimental errors or nonspecific reactions that, if an experiment is judged by one or more of these criteria but not by all, the result might lead to misinterpretation or even a false conclusion.

My object in this paper is to draw attention to the conditions necessary to establish experimental typhus fever in guinea-pigs; to indicate the nonspecific or pseudo reactions which should be considered as possibilities in the determination of each of these criteria, and finally to show that no interpretation of an experiment can be made unless all the requirements are met and the nonspecific or pseudo reactions are considered.

#### CRITERIA FOR DETERMINING EXPERIMENTAL TYPHUS FEVER IN GUINEA-PIGS

There are four criteria for determining experimental typhus fever in guinea-pigs: (a) Transmissibility of the virus, made evident by a typical febrile reaction, from the test material to guinea-pigs and from guinea-pig to guinea-pig indefinitely. (b) A specific pathologic condition in all of the affected animals in the series of transmissions during the height of the reaction. The macroscopic examination reveals no changes in the organs with the exception of the enlargement of the spleen and a petechial rash in the deeper layers of

\* From the Laboratories of the Rockefeller Institute for Medical Research.

1. Olitsky, P. K.: *J. Exper. Med.* **34**: 525 (Dec.) 1921.

2. Olitsky, P. K.: *J. Exper. Med.* **35**: 115 (Feb.) 1922.

3. Canto, P.: *Rev. d. Inst. Bact., Buenos Aires* **2**: 101 (March) 1921.



the skin. The lesions in the different organs are demonstrable by histologic study, and consist of a particular vascular change most numerous about and in the blood vessels of the brain. (c) Absence of concomitant or secondary infections by ordinary bacteria (pneumonia, peritonitis, abscesses, pseudotuberculosis or other diseases, and absence of these bacteria from the blood. (d) Specific immunity reactions. A guinea-pig, after reaction to the substance to be tested, remains immune to the known active typhus virus and, conversely, a guinea-pig, after reacting to the known typhus virus, remains immune to the test material.<sup>4</sup>

#### NONSPECIFIC AND PSEUDO REACTIONS

A review of the literature reveals that almost all of the many different micro-organisms which have been advanced as the incitants of typhus fever have failed to satisfy all the requirements. Indeed, in certain instances, as in the case of Canto already mentioned, reliance was placed on only one of the criteria. In the following, we shall demonstrate the nonspecific reactions which can simulate any one of these conditions and may consequently lead to misinterpretation.

##### *The Febrile Reaction.*—

Friedberger<sup>5</sup> has shown that nonspecific substances, such as normal guinea-pig blood, may induce in guinea-pigs febrile reactions indistinguishable from the course of the fever in experimental typhus infection. Canto,<sup>3</sup> by diminishing the dosage of his staphylococcus-like organism, has also obtained a similar fever. In the studies on typhus fever by Kraus and de la Barrera,<sup>6</sup> it is noted that an occasional temperature curve of normal guinea-pigs resembles that of typhus-infected animals.

In our experience we have observed that the intraperitoneal injection of normal guinea-pig blood has in one instance shown a similar febrile reaction (Fig. 1). Febrile reactions were also obtained in nineteen guinea-pigs injected with culture and tissue material not containing the living typhus virus. Although six exhibited the typical histopathologic changes, none satisfied all requirements, especially that of immunity, essential to the confirmation of the typical experimental disease.

It is well known to those employing laboratory animals for experimental purposes that spontaneous infections frequently arise in monkeys, dogs, rabbits, rats and guinea-pigs. Among the more common of spontaneous infections encountered are tuberculosis in monkeys; distemper in dogs; *Bacillus leprosepticus* infections and septicemia in rabbits; pseudotubercular pneumonia in rats, and snuffles, Gaertner type bacillary

infections and pasteurellosis in guinea-pigs. Although a careful search may reveal the causative micro-organism, it not infrequently happens that cultures are sterile or missed.

Hence we may conclude that when a test material induces in guinea-pigs a febrile reaction similar to the fever of experimental typhus, it is insufficient, if taken by itself, to indicate the presence of the living typhus virus.

*Transmissibility.*—In six of our experiments in which guinea-pigs were injected with culture or tissue (brain or spleen) material that contained no living typhus virus, there resulted febrile reactions similar to the fever of experimental typhus. In the first series, by means of the blood removed by cardiac puncture from three animals during the height of fever and injected, respectively, into three normal guinea-pigs, a similar condition was noted as indicated by the febrile reaction. No attempt was made, in this series, to transmit further the blood from the second animal. In another series, by transmission of blood from one animal to another, three successive guinea-pigs showed similar febrile reactions, at which point the experiment

was discontinued. In a third experiment, consisting of two parallel series, the fever was observed in animals of three successive passages, but was absent in those of the fourth passage. In one of the two parallel series comprising the latter experiment, the first passage was effected by the injection of diphtheroid bacilli which were not recoverable from the guinea-pigs of the first or second passages; yet from one animal of the third passage a hemolytic streptococcus was isolated in pure culture from the blood.

In none of these transmission experiments were all the prerequisites satisfied for determining experimental typhus infection, although in the other of the two parallel series of the last experiment the fever and the particular histopathologic picture occurred, and no ordinary bacteria were found, but the immunity test failed.

Therefore, a transmissible fever in guinea-pigs which resembles that occurring in experimental typhus can be induced with materials other than typhus virus, so that a typical fever which is transmissible is insufficient, by itself, to define the typical experimental disease.

*Histopathology.*—Kraus and de la Barrera<sup>6</sup> report that the lesions found in the brain of guinea-pigs during the course of experimental typhus in this animal are not specific. They note similar lesions occurring in the brain in the disease of Borna, in *mal de cadéras* of horses, and in experimental rabies of hens, and point out the similarity of these lesions to those found in epidemic (lethargic) encephalitis, influenza, poliomyelitis and other infections. Friedberger and Schroeder, in a recent communication,<sup>7</sup> show that

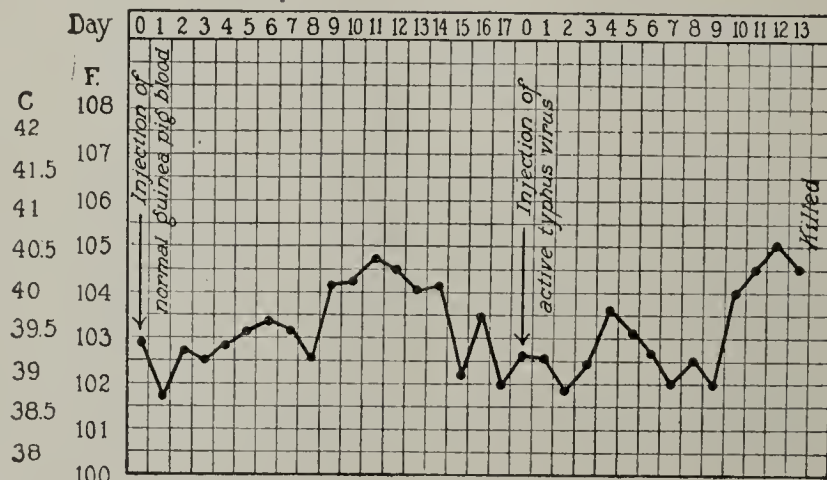


Fig. 1.—The injection of 3 c.c. of normal guinea-pig blood intraperitoneally into a normal animal resulted in a febrile reaction similar to the typical fever of experimental typhus fever in guinea-pigs. On reinjection with active virus, however, the animal showed no immunity, for the second febrile reaction was proved to be a symptom of the experimental typhus.

4. In addition to these conditions, Doerr (Centralbl. f. Bakteriöl., Orig. 85:2, 1921) has added another based on the findings of Weil and Felix (Wien. klin. Wchnschr. 33:423, 1920). A rabbit, injected intraperitoneally with a suspension of brain tissue obtained from a guinea-pig during the course of experimental typhus fever, shows in its blood, after an interval of about ten days, agglutinins for *Bacillus proteus*, Strain X<sub>10</sub>. We have been unable as yet to confirm this test, although a number of trials have been made.

5. Friedberger, E.: Ztschr. f. Immunitätsforsch. u. exper. Therap. 29:125, 1920.

6. Kraus, R., and de la Barrera, J. M.: Rev. d. Inst. Bact., Buenos Aires 2:55 (March) 1921.

7. Friedberger, E., and Schroeder, P.: Ztschr. f. Immunitätsforsch. u. exper. Therap. 31:386, 1921.



*Bacillus proteus* X<sub>19</sub> can induce the same lesions in the brain of guinea-pigs, and conclude therefrom that this bacillus is the microbic cause of typhus fever.

Of nineteen guinea-pigs injected with culture materials, or cerebral and splenic tissue derived from the same species, but free from living typhus virus, six showed the focal lesions, indistinguishable from the typhus lesions, in and about the blood vessels of the brain. A section of the brain from one of these guinea-pigs, from the blood of which hemolytic streptococci were cultivated, is shown in Figure 2. In this animal, as in the others, the vascular lesions and nodular formation of endothelial leukocytes in proximity to the vessel of the gray matter correspond to those described elsewhere<sup>8</sup> as being typical of experimental typhus fever.

In two animals inoculated intraperitoneally with *Staphylococcus aureus*, similar lesions were noted in the brain. In a series of ten guinea-pigs inoculated with Berkefeld filtrates derived from typhus-infected tissues and proved free from typhus virus by transmission and immunity tests, the same lesions were found in the brain of four of the animals.

Thus the histopathologic picture observed in the brain of guinea-pigs during typical experimental typhus can be simulated by a number of different control materials, such as culture mediums, tissue suspensions, bacteria of the ordinary species, and also by the lesions seen in other diseases of obscure or unknown etiology.<sup>9</sup>

The pathologic changes may occur in conjunction with a transmissible fever; but, since either the histopathology or the fever can be produced by nonspecific materials, they cannot be regarded separately, or together, as sufficient to establish a diagnosis of experimental typhus fever in the guinea-pig.

*Infection with Ordinary Bacteria.*—In our experience, we have found that certain of the nonspecific reactions, chiefly the febrile and the histologic, are attributable to infection with ordinary bacteria. In spite of the fact that at necropsy at the height of reaction an animal may reveal no gross lesions of infection, blood or splenic cultures may yield the bacteria. However, certain organisms which may com-

plicate an experiment are cultivable only with difficulty, such as *Pasteurellae* or delicate streptococci. It is necessary, therefore, in order to satisfy this requirement of the definition of experimental typhus to control bacteriologically, with great pains, the test material or the material used for transmission. We have adopted this routine procedure: for passage experiments to maintain the typhus virus, to plant from 0.5 to 1 c.c. of the heart's blood in 10 c.c. of dextrose veal-infusion broth of a  $p_H$  of 7.4, and to incubate the mixture for at least forty-eight hours; for a critical experiment, in addition to the aerobic control, another of anaerobic culture, preferably the Smith-Noguchi medium, is essential.

Therefore, in view of the frequency of spontaneous infections in guinea-pigs, the determination of experimental typhus in this animal cannot be made unless severe tests are conducted to detect ordinary bacteria.

*Immunity.* — Of 210 guinea-pigs, Anderson<sup>10</sup> found only 4.7 per cent. which failed to react to active typhus virus. Other observers, such as Paltauf and Loewy, Nicolle, and da Rocha-Lima, have reported positive infections in 76 per cent., 84 per cent. and 88 per cent., respectively. Our experiments with 300 guinea-pigs show that only 1 per cent. failed to react to active typhus virus. In view of the occasional resistant animal, it is obvious that interpretation of critical experiments can be made only by repeating immunity tests.

In a paper soon to be published in detail, we report ex-

periments which show that certain substances, not of the nature of a living, multiplying agent, exist in filtrates from typhus-infected guinea-pig tissues which occasionally make those animals refractory to further inoculations of active typhus virus. Hence, supposed cultures of organisms, recovered from typhus-infected materials which are tested to reveal possible immunizing effects, should be free from these substances. In other words, an "immunity" induced by injection of such cultures in early transplants might be due to these immunizing substances derived from typhus materials, but not to the cultures employed.

Finally, in two experiments, supposed cultivable "bodies" which we subsequently discarded because of their occurrence in control, nontyphus, materials, failed to induce reaction in guinea-pigs which were immune to the known passage virus, but normal animals which showed febrile reactions to inoculation of these

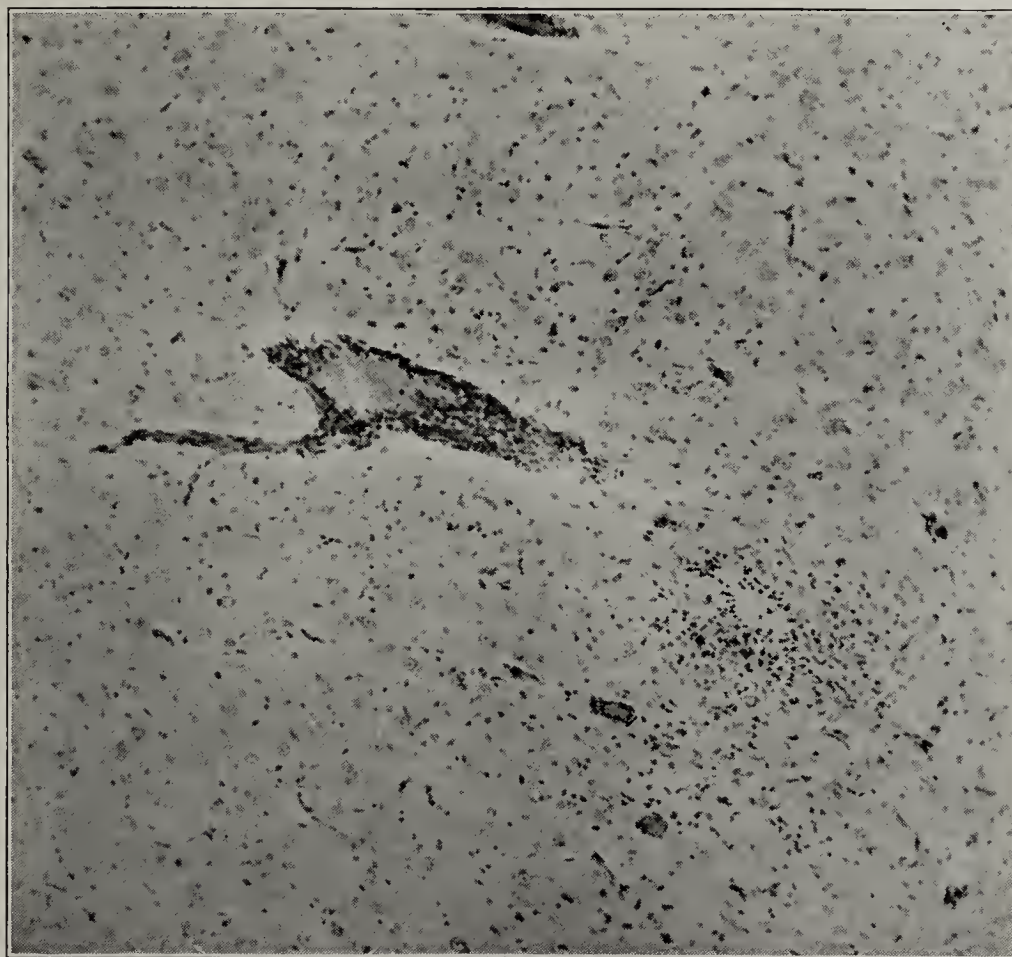


Fig. 2.—Section of brain from guinea-pig injected with nontyphus culture material; to be noted are the vascular lesions and nodular formation (below the vessel);  $\times 108$ .

8. Olitsky, P. K.: J. Exper. Med. **34**: 365 (Oct.) 1921.

9. Attention may at this point be called to the not infrequent occurrence of nodular encephalitic lesions in the brain of the ordinary laboratory stock of rabbits (Oliver, J.: J. Infect. Dis. **30**: 91 [Jan.] 1922. Bull. C. G.: J. Exper. Med. **25**: 557 [April] 1917), and possibly in guinea-pigs also, with which some of those described as typhus lesions may be identical.

10. Anderson, J. F.: J. M. Res. **25**: 467, 1914.



"bodies" were not rendered immune to further injections of the known active virus. It is essential, then, not only to test supposed cultures in guinea-pigs immune to known passage virus, but also, conversely, and more important, to test animals recovered from the effects of injection of such cultures with known passage virus.

#### SUMMARY

To summarize the requirements for establishing immunity, the experiments should always be repeated, the possibility should be considered of the presence in cultures of substances found in typhus-infected tissues which are not living, multiplying agents, but which may occasionally induce immunity, and finally, cross immunity tests should invariably be performed.

#### CONCLUSIONS

Experimental typhus fever presents constantly and regularly certain manifestations which, taken together,

indeed, has already led, to erroneous interpretations of inoculation experiments in guinea-pigs in the course of studies on the etiology of typhus fever.

Sixty-Sixth Street and Avenue A.

### A TECHNIC FOR THE REPAIR OF RELAXED OR LACERATED PERINEUM\*

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There have been a great number of operative methods described for the repair of a lacerated perineum, and each and every one of these I adopted with enthusiasm, to desert sooner or later as unsatis-

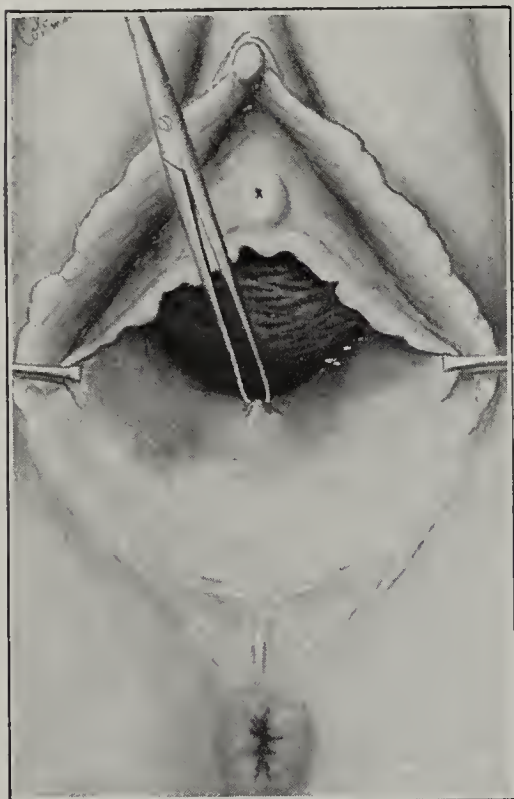


Fig. 1.—Points of pick-up with Allis forceps. The middle forceps are placed at the highest point of the rectocele, where the anterior and posterior vaginal walls meet. Rigid self-retaining retractors do not lend themselves to the ease of denudation that can be accomplished through the use of three separate retractors, which can be moved to any adjustment by assistants.

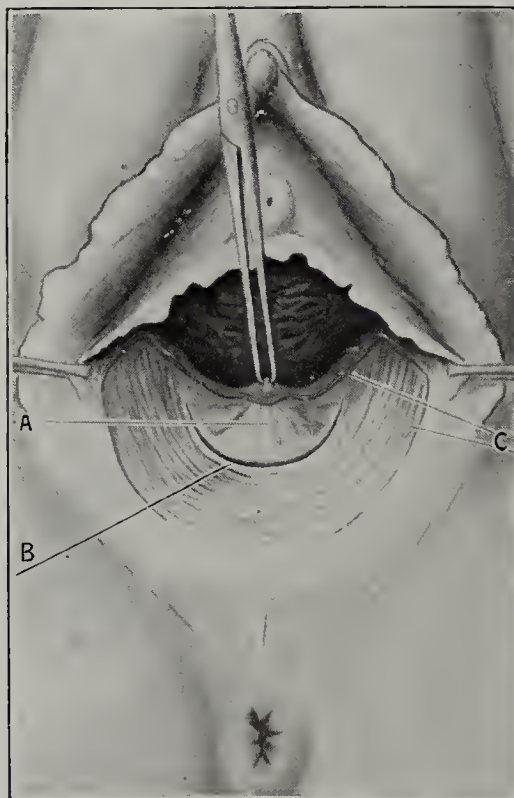


Fig. 2.—A, true hernia of rectum, which must be reduced backward and downward to permit midline approximation of relaxed muscle bundles. B, incision separating rectocele from levator ani; separation of rectum from muscles and fascia must be extensive enough to provide complete freeing of the rectocele, which results in a crescentic shelf approximately  $\frac{1}{2}$  to  $\frac{3}{4}$  inch (from 12 to 19 mm.) in depth consisting of muscles and fascia of perineum. C, denuded area.

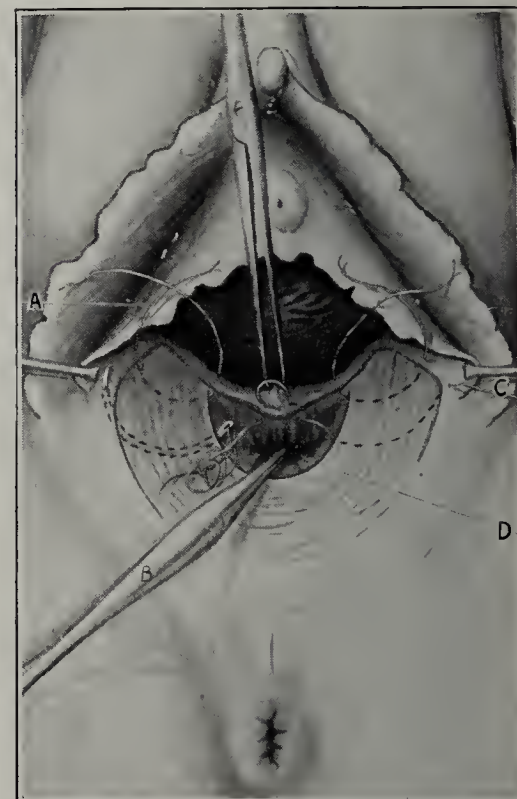


Fig. 3.—A, the one suture to be applied in each sulcus; internal bite of needle must not include any bowel wall, picking up only vaginal fascia and mucous membrane. B, a rigid instrument reducing the rectocele while second suture passes over and catches vaginal fascia and mucosa at central point as illustrated. The second suture (C) is not tied until all remaining approximation is completed. D, shelf of levator muscle approximately  $\frac{1}{2}$  inch (13 mm.) in length.

stamp it unmistakably as a typical disease. These manifestations have been described as consisting in the guinea-pig of a characteristic febrile reaction, of indefinite transmissibility from animal to animal, particular histologic changes in various organs but mainly in the brain, absence of bacteria cultivable in any aerobic or anaerobic medium whatever, and finally, immunity, determined by cross-immunity tests, to materials carrying known typhus virus.

Besides these manifestations, which all true samples of typhus fever virus produce, what have been termed "nonspecific" or "pseudo reactions" in the guinea-pig, simulating particular manifestations of the action of true typhus virus, have been described. The latter reactions can be induced with a variety of substances, and the failure to recognize this fact may lead, and,

factory. For the last ten years my assistants and I have been using the technic herein described, and the results have been so satisfactory that we have come to feel that we have at least one definitely standardized technic for this operative necessity on which we may depend for a satisfactory result.

No claim is made for the presentation herein of anything new or original, but the salient features of the illustrated technic are to be found in the underlying principles (1) of completely freeing the entire rectocele from the muscles and fascia of the perineum in order to permit a thorough reduction of this herniated portion of the bowel; (2) the definite employment of only nine stitches for any and all types of this operative

\* Presented before the Seaboard Medical Association of Virginia and North Carolina, Dec. 10, 1921, Norfolk, Va.



necessity; (3) the fact that these sutures are all interrupted, and (4) its simplicity and ease of execution.

#### IMPORTANCE OF COMPLETE REDUCTION OF RECTAL HERNIA

It is not my purpose to criticize other methods of perineorrhaphy or to compare this technic with them; but I would like to emphasize the importance and necessity of complete reduction of the rectal hernia, and this cannot be attained except by complete freeing of the rectocele in its entire lower half which, when reduced, permits the approximation of the muscles and fascia of the pelvic floor at a much higher plane and with a greater depth than any other technic with which I am acquainted. Furthermore, I do not feel that I can ever condone any method of perineal repair which utilizes the employment of continuous, figure of eight or complete crown sutures for its completion, believing that the interrupted suture of No. 2 or No. 3 chromic

## ACTINOMYCOSIS OF THE URINARY ORGANS

### REPORT OF A CASE OF PYELONEPHRITIS IN WHICH ACTINOMYCES BOVIS WAS FOUND\*

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AND

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We consider this case worthy of report, because only ten similar cases can be found in available literature, in only one of which<sup>1</sup> is the species of *Actinomyces*<sup>2</sup> determined by culture. Moreover, the evident difficulty, hitherto, in diagnosing actinomycosis of the genito-urinary tract before operation or necropsy, and in differentiating it from tuberculosis, combined with the

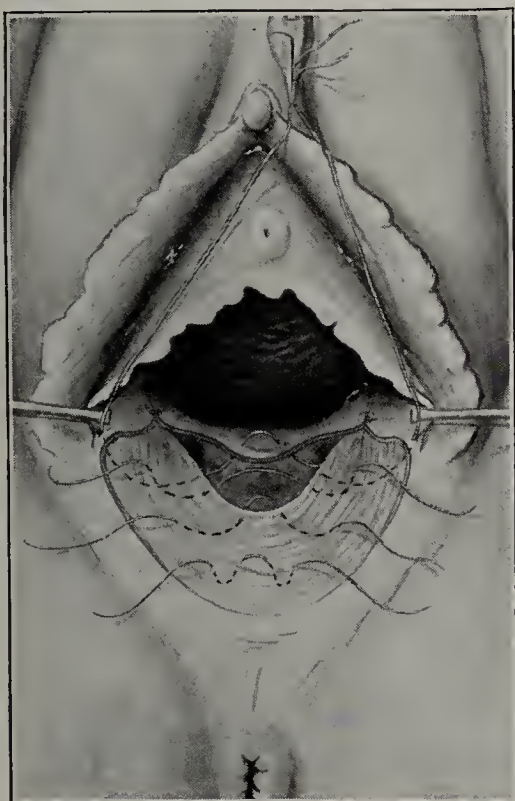


Fig. 4.—Stitch in each sulcus tied and the second suture caught up by clamp, three interrupted sutures beginning and ending at a point half way between the levator shelf and the skin margin. These sutures, when tied, maintain a reduction of the rectocele.

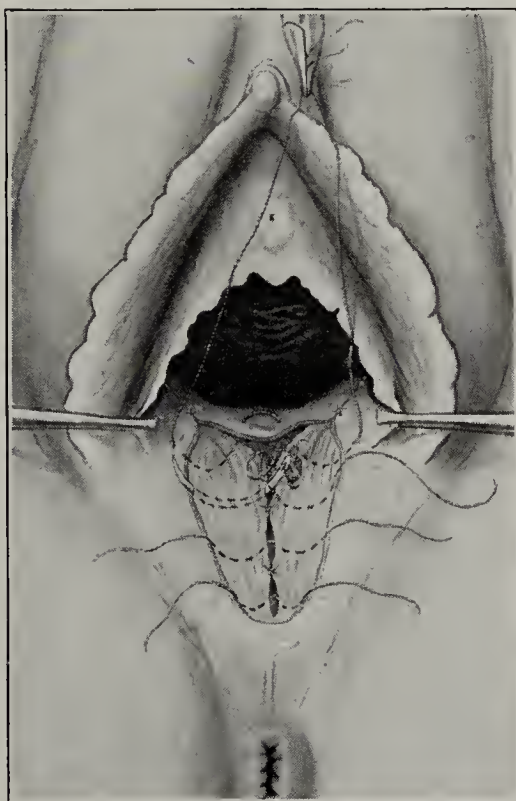


Fig. 5.—Second tier of sutures beginning just under the skin margin and approximating the second plane of muscles and fascia. These are inserted on a plane between the first three approximating sutures, as shown in Figure 4.

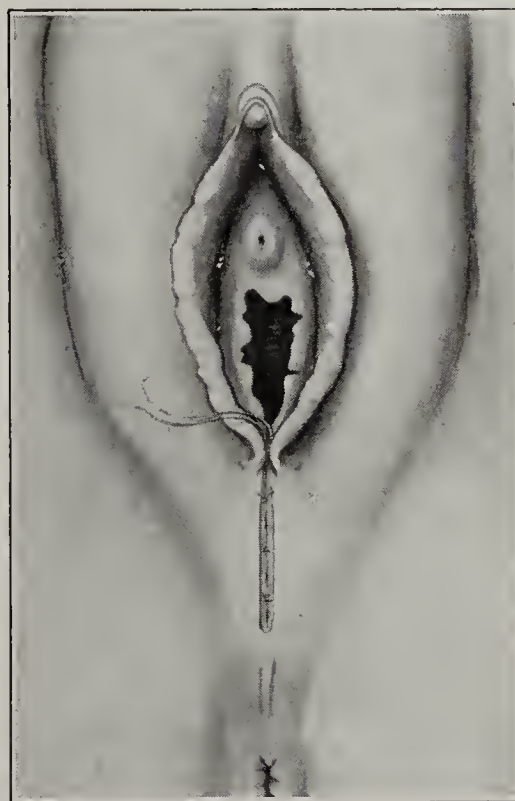


Fig. 6.—Results after all deep sutures are tied. Long suture ends represent stitch 2 (Fig. 3). Skin margins approximated with a loose plain catgut running stitch. Plane of posterior wall of vagina now slopes downward and backward, providing support for bladder.

catgut is the best, and feeling with regard to the other type of sutures that in comparison with a chain they are no stronger than the weakest link.

**Abuse of Narcotics in France.**—The *Ligue d'Hygiène-Mentale* publishes in its *Bulletin* a letter from the Paris prefect of police on the measures taken to check the illicit traffic in narcotics. There were thirty-six suits of the kind in the courts of the Paris district, and nineteen resulted in a fine of from 50 to 5,000 francs. In 1920, 254 were condemned to from six months to two years imprisonment. In 1921, it was the practice to send the buyers to prison for three or six months while the seller was given a one or two year term and a fine. He protested against the lax international regulations regarding importation of drugs labeled "chemical product" or "free sample." A bill providing for expatriation for five or ten years of those convicted of illicit traffic in narcotics has been passed by the French senate and is now before the chamber of deputies.

fact that the methods of treatment of the two infections may differ widely, make it important that more should be known about actinomycotic infections. Certainly, the possibility of actinomycosis should always be considered in cases of suspected tuberculosis in which tubercle bacilli cannot be found.

#### REPORT OF CASE

**History.**—J. A. O., a man, aged 35, married, electric welder, entered Brady Urological Institute, May 20, 1919, complaining of pain in the kidneys. The family and personal history was unimportant. In 1918 he had a mild attack of gonorrhea, and

\* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

1. Eustace.

2. Throughout this paper, we employ the term "Actinomyces" as defined in the recommendation of the Committee of the Society of American Bacteriologists on Characterization and Classification of Bacterial Types (Winslow, C.-E. A.; Broadhurst, J.; Buchanan, R. E.; Krumwiede, C.; Rogers, L. A., and Smith, G. H.: The Families and Genera of the Bacteria, Final Report of the Committee of the Society of American Bacteriologists on Characterization and Classification of Bacterial Types, J. Bacteriol. 5: 191 [May] 1920).



was treated by injections of argyrol and irrigations of potassium permanganate. The disease lasted only two weeks, and there were no complications. The patient dated his present illness from an injury he received in June, 1918. He was helping to lift a heavy weight when those with him let go, thus throwing the entire strain on him. Immediately he was seized with a severe pain in the right loin which lasted for ten hours. The pain did not radiate. There was no nausea or vomiting. There was no hematuria. The rise in temperature and chill which the patient had had with all subsequent



Fig. 1.—Slants of *Actinomyces bovis*, of seven days' growth, at 37.5 C. (removed from the tubes for photographic clearness). Tube 1, at left, pH 7.6 beef infusion agar, showing crenate nature of surface growth; Tube 2, in center, Loeffler's serum, showing retarded appearance of crenate growth at base of slant; Tube 3, at right, hydrocele agar, showing beginning of crenate growth in three upper colonies, and a more advanced stage in the lowest.

attacks was absent. In forty-eight hours all pain and soreness had gone. In March, 1919, the patient had an attack of pain in the right side, which was accompanied by a severe chill and sharp rise in temperature. The pain was very severe, requiring repeated doses of morphin. It radiated into the bladder but not to the end of the penis, testicle or down the thigh. He passed no stone and had no hematuria. This attack lasted for about eight days with varying intensity, during which time there was almost continuous nausea and frequent vomiting. Since then he had had attacks recurring about every two or three weeks. The pain was usually on the right side, but was sometimes on the left. There had never been any frequency, dysuria or hematuria. The patient had never passed stone. There had been pyuria increasing since the first attack.

**Examination.**—The patient was healthy and robust, was about 5 feet 7 inches (170 cm.) in height and weighed about 175 pounds (79.4 kg.). The mucous membranes were of good color. There was slight pyorrhea. The tonsils were enlarged and slightly inflamed. The eyes were normal. The chest, lungs and heart were negative on physical and roentgen-ray examination. The abdominal walls were soft. No masses were felt to descend beneath the costal margin on deep inspiration. The kidneys were not palpable or tender. The reflexes were normal. There was no general glandular enlargement. The external genitalia were normal except for slight varicocele on the left side. The prostate was a little broader than normal. The right lobe was very irregular along the base, and there was moderate induration on the outer side and at the apex. The same was true of the left lobe, which was slightly smaller than the right. Both seminal vesicles were indistinctly palpable, and showed no pathologic change. There was nothing on examination of the external genitalia or on rectal examination to suggest tuberculosis.

The cystoscope entered with difficulty, owing to stricture of the bulbous urethra. There was no residual urine, and the bladder capacity was normal. The prostatic orifice was inflamed, slightly irregular and slightly edematous, but there was neither prostatic hypertrophy nor contracture. The bladder was diffusely reddened, characteristic of cystitis. The trigon showed a more marked inflammatory reaction than elsewhere; this was most marked around the ureteral orifices, particularly the right, where there was a marked edema. There was no ulceration, trabeculation, stone or tumor.

On the first ureteral catheterization, No. 7 catheters were passed to the pelvis on each side with ease. The urines collected contained a large quantity of pus from both sides, but careful search failed to demonstrate organisms, either pyogenic or acid fast. The functional test of phenolsulphonephthalein given intravenously showed: on the right side, appearance time five minutes, with an output of 15 per cent. in half an hour; on the left side, an appearance time of two minutes, with an output of 30 per cent. in the same time.

Plain roentgen-ray examination of the kidneys, ureters and bladder was negative. A double pyelogram and ureterogram disclosed the pelvis of the left kidney to be contracted, very long, and slightly irregular in outline. There was slight but definite blunting of the minor calices. The picture on the left side was that of pyelitis. The kidney was definitely larger than normal. The ureter showed no change. On the right side the pelvis was larger than that of the left. The outline was slightly irregular. The lower major and minor calices were only slightly changed, but the middle and upper calices presented a marked change. They were greatly blunted and enlarged, and their outline was very irregular and distorted. There was, however, no destruction of tissue as is seen in tuberculosis. The kidney was about two-thirds the normal size. The ureter was normal.

Urine examination revealed color, light yellow; specific gravity, 1.018; reaction, acid; albumin, trace; sugar, none; pus, considerable. Careful examination failed to demonstrate any organism either pyogenic or acid fast. The test of kidney function revealed phenolsulphonephthalein, ten minutes appearance time; 60 per cent. phenolsulphonephthalein excreted in one hour.

**Clinical Course.**—At first, repeated examinations of smears of the urines obtained by ureteral catheterization were negative for bacteria, but always showed large quantities of pus. The same was true of the bladder urine. Eleven days after the patient entered the clinic for treatment, infection was demon-

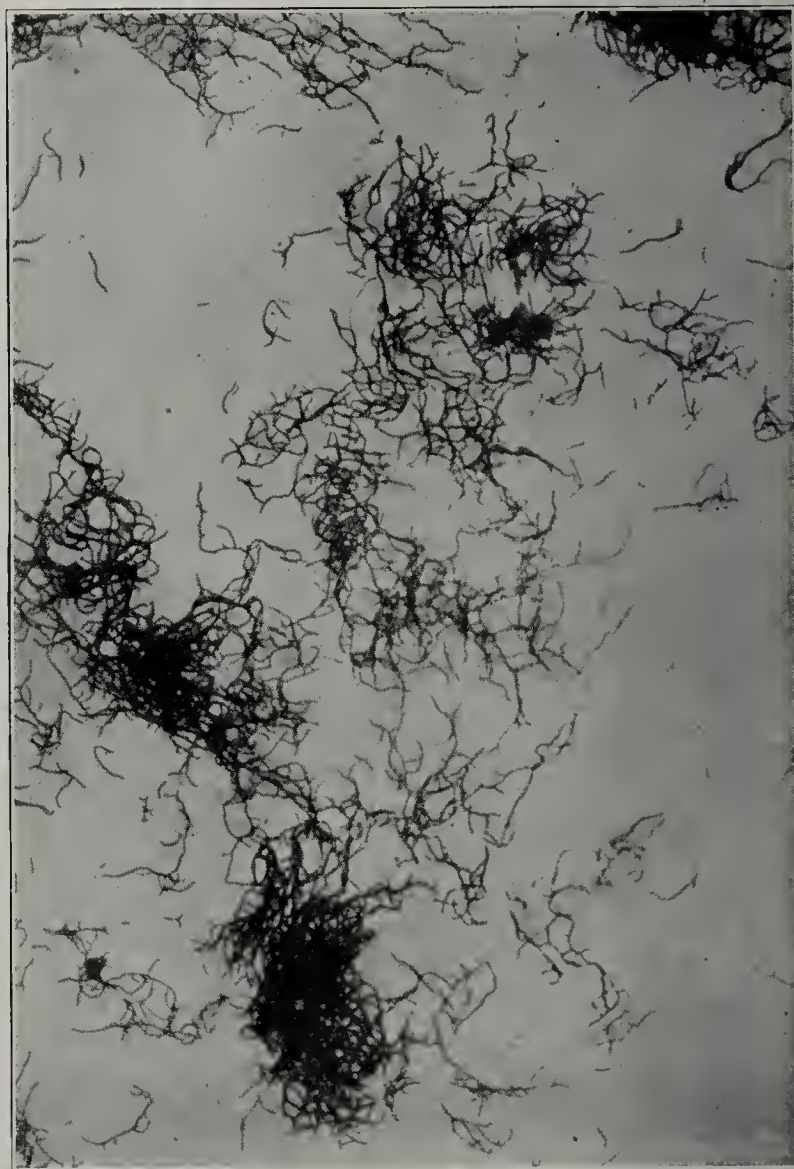


Fig. 2.—Pure culture of *Actinomyces bovis* from human kidney, magnified 200 diameters.

strated in the bladder urine by culture which showed *Pseudomonas pyocyanea*.

The cultures were not incubated sufficiently to obtain *Actinomyces*. The patient did not return for more than a month, during which time he had been ill with frequent attacks of colic of extreme severity.

From July 21, 1919, to March 1, 1920, he was treated from time to time by pelvic injections of various drugs in each kidney. The treatment gave no relief to the symptoms.



About March 1, he again developed severe symptoms of cystitis and prostatitis. From this time to November 19 he received prostatic massage, irrigations and instillations of mercurochrome-220 soluble, 1 per cent. This gave great relief. During this time he continued to have renal colics. The teeth had been treated and tonsils removed as a possible source of primary infection, but neither of these apparently improved the kidney condition.

The presence of a few branching filaments in direct smears of centrifugalized urine from the right kidney now led us to suspect actinomycosis. The smears offered a puzzling variety of bacterial forms, from which only a tentative diagnosis could be made, pending cultural confirmation. In addition to the few branching forms, undoubtedly *Actinomyces*, there were many shorter, rigid, unbranched filaments, probably bacillary forms of *Actinomyces*, the similar, but actively motile curved forms, and short, actively motile bacilli, undoubtedly *Pseudomonas pyocyanea*. There were also many coils of filaments, which were so closely interwoven that it was impossible to determine whether or not they branched, and which were probably a mixture of the two organisms, although no such forms were observed in the urine from the left kidney, which never showed *Actinomyces*, but only *Pseudomonas pyocyanea*.

As Foulerton<sup>3</sup> has shown, it is often impossible to diagnose actinomycosis by examination of smears, on account of the three forms which actinomycetes commonly take. These are: (1) the characteristic branching mycelium, strongly gram-positive at first, but soon showing in our case a breaking down into beading of gram-positive granules in a gram-negative filament, and entirely gram-negative portions of mycelium adjacent to gram-positive portions of the same filament; (2) the unbranched bacillary form of the fragmented mycelium, sometimes gram-positive,

the older forms gram-negative, and (3) the coccoid forms, always gram-positive, which are frequently impossible to differentiate from the usual pyogenic cocci by microscopic examination.

In the case reported here, a few small portions of the branching mycelium were observed in the direct smears, probably many of the bacillary forms, and none of the coccoid. The fact that *Pseudomonas pyocyanea* itself is capable of growing in long filaments, always gram-negative, however, was a further source of confusion in this case.

Cultures on pH 5 agar plates were made at this time from the urine from both kidneys. Cultures were also made from the catheters before use, and the sterile water used for irrigation. From both sides *Pseudomonas pyocyanea* developed over night at 37 C. The plates were kept unopened in the incubator at 37 C. for fourteen days. At the end of this time the plates of catheter control remained sterile, the left side urine cultures showed only *Pseudomonas pyocyanea*, and the right side urine cultures showed convex buff colonies, evenly distributed among the dry *Pseudomonas pyocyanea* colonies. These buff colonies, when removed with the platinum needle, could not be penetrated, but came off as whole colonies, the microscopic examination of which revealed the characteristic branching mycelium of actinomycetes. Further study of this organism revealed its identity with *Actinomyces bovis*, a conclusion confirmed for us through the kindness of Dr. McCoy and Dr. Stimson of the Hygienic Laboratory. *Actinomyces bovis* was again grown from the right kidney in our case by the same method on three different dates.

*Pseudomonas pyocyanea* was identified by its production of pyocyanin, which, according to G ssard,<sup>4</sup> is the identifying feature of this genus, and by its cultural identity with *Pseudomonas pyocyanea* 279, 280 and 282, furnished us through the courtesy of the Hygienic Laboratory.

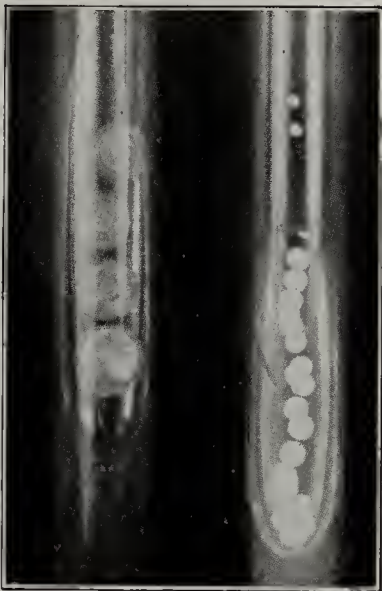


Fig. 3.— Cultures of *Actinomyces bovis*, seven days, at 37.5 C. Tube at left, growth on hydrocele agar; tube at right, growth on pH 7.6 beef infusion agar.

3. Foulerton, A. G. R.: The Milroy Lectures on the Streptothricoses and Tuberculosis, Lancet 1: 551 (Feb. 26) 1910; 1: 626 (March 5) 1910; 1: 769 (March 19) 1910.

4. G ssard, C.: Technique d'identification des germes pyocyaniques, Ann. de l'Inst. Pasteur, February, 1920, p. 88.

SUMMARY OF CASES OF PRIMARY GENITO-URINARY ACTINOMYCOSIS FOUND IN AVAILABLE LITERATURE

Author	Patient	Diagnosis	Actinomycosis Recognized	Organism Found	Identity of Organism	Treatment	Termination
1. Penceet.....	Not stated	Cystitis	At time of treatment	In nodules in pus in urine	"Actinomyces"	Not stated	Not stated
2. Stanton.....	Man, aged 53	Cystitis; pyelonephritis	Postmortem	In kidney abscesses	"Actinomyces"	Not stated	Fatal
3. Leger.....	Male	Not stated	Not stated	Glans penis	"Actinomyces"	Not stated	Not stated
4. Earl.....	Not stated	Not made	Postmortem	Abscess of kidney and bladder; brain	"Actinomyces"	Not stated	Cerebral actinomycosis; fatal
5. Kunith.....	Boy, aged 4 3/4 years	Pyelonephritis	Postoperatively	In urine after operation, and in kidney abscesses	"Actinomyces"	Operative	Recovery
6. Cohn.....	Man, aged 46	Pyelonephritis; prostatitis	At time of treatment	In urine and prostatic secretion	"Actinomyces"	Not stated	Not stated
7. Kellock.....	Female	Probable tuberculosis of right kidney	Postoperatively	In kidney lesions	"Actinomyces"	Operative: potassium iodid	Recovery
8. Eustace.....	Man, aged 35	Chronic inflammatory process; probably tuberculous	Postoperatively	In testicle and cord	"Actinomyces bovis"	Operative: followed by KI, 5 grains three times a day for 3 months	Recovery
9. Israel.....	Man, aged 33	1. Kidney stone 2. Actinomycosis	During treatment	In exudate from fistula, and in urine	"Actinomyces"	Operative	Recovery
10. Israel.....	Woman, aged 60	Perinephritis	After nephrectomy	In kidney lesions	"Actinomyces"	Operative	Recovery
Summary.....	6 male 2 female 2 not stated  Age from 4 3/4 to 60 years	2 cases, not made 2 cases, probably tuberculosis 1 case, perinephritis 1 case, cystitis 1 case, cystitis and pyelonephritis 1 case, pyelonephritis and prostatitis 1 case, kidney stone and actinomycosis	3 during treatment 4 postoperatively 2 postmortem 1 not stated	3 in kidney lesions 1 in kidney, bladder and brain lesions 1 in kidney lesions and urine 1 in urine and exudate from fistula 1 in urine and prostatic secretion 1 in glans penis 1 in testicle and cord	9 "Actinomyces" 1 "Actinomyces bovis"	3 operative 2 operative and KI 5 not stated	5 recovery 2 fatal 3 not stated



From January, 1921, after the discovery of *Actinomyces*, until last seen, the patient has been taking potassium iodid, beginning with 10 grains (0.65 gm.) three times a day, and increasing a grain each day. The treatment is to be continued at 75 grains (5 gm.) a day. The drug is recommended in the literature as the only one having any influence on actinomycotic infections in other parts of the body. Unfortunately, the patient has not returned to the clinic, and at present we are unable to report the further history.

## COMMENT

The patient is a very healthy looking man of splendid physique. As far as we have been able to determine, there are no lesions in any other part of the body. He has an infection of both kidneys with an organism rarely found, *Pseudomonas pyocyanea*, complicated with the presence of *Actinomyces bovis* in the right kidney, an even rarer finding. It is impossible to determine the relative pathogenicity of *Actinomyces* and *Pseudomonas pyocyanea* in this case. There is however, a slowly progressing decrease in function of the right kidney with compensatory increase in the left.

After the patient has now been treated for two years with practically all drugs, both old and proved, and new and experimental, without the slightest benefit, one would naturally wonder what procedure to pursue. Would it seem advisable to remove the right kidney which contains *Actinomyces* and which is responsible for by far the majority and most severe renal colics? It would throw extra strain upon the infected left kidney, which is probably doing its maximum work; and, should the infection on this side then progress, it would unquestionably shorten the patient's life. In our minds, right nephrectomy is definitely contraindicated on account of pyelitis of the left side, though the symptoms are distressing and beyond relief by treatment, as radical as can be given.

## LITERATURE

In reviewing reports of actinomycotic infections, the varied nomenclature and the lack of complete identification of many of the organisms observed make confusion inevitable. For this reason we shall cite such cases of so-called "primary" genito-urinary infections found under all of the names used for this group. Such cases are described by Israel,<sup>5</sup> Kunith,<sup>6</sup> Stanton,<sup>7</sup> Cohn,<sup>8</sup> Kellock,<sup>9</sup> and Eustace.<sup>10</sup> In addition, Rosenstein<sup>11</sup> cites the cases of Poncet, Leger and Earl. A summary of these cases is given in the accompanying table. *Pseudomonas pyocyanea* seems to be a rare cause of infections localized in the genito-urinary tract. Kidney infections are reported by LeNoir,<sup>12</sup> Bernhardt,<sup>13</sup> Blumer and Lartigau,<sup>14</sup> Klieneberger,<sup>15</sup> Frän-

kel,<sup>16</sup> Scheidemandel,<sup>17</sup> Campbell and Rhea,<sup>18</sup> Ashner<sup>19</sup> and Haines.<sup>20</sup> Cases of cystitis due to this organism are described by Barker,<sup>21</sup> Jadkewitsch,<sup>22</sup> Motz,<sup>23</sup> Brown<sup>24</sup> and David.<sup>25</sup> Heiman<sup>26</sup> reports a case of bilateral hydro-ureter with *Pseudomonas pyocyanea* infection. Perkins<sup>27</sup> and Hirschberg<sup>28</sup> have observed cases of orchitis due to this organism.

NOTE.—Since studying this case, one of us (J. H. H.) has found actinomycetes in two other cases, which will be reported when the histories are complete.

## Clinical Notes, Suggestions, and New Instruments

### WHEN APPENDICITIS IS NOT APPENDICITIS: A CASE OF DIVERTICULITIS OF THE CECUM

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Removal of the appendix has come to be regarded as an exceedingly simple operation. Indeed, in most communities the family physician, who usually first sees these cases, is himself willing to operate. It is not at all uncommon to hear the general practitioner say: "I do my own surgery in simple cases like appendicitis."

Considered from the standpoint of operative technic, truth compels the admission that when a case is simple it is simple, and that the majority of cases, perhaps, belong to this class. At the same time, certain cases of appendicitis test the skill as well as the judgment of the operator to the limit. There are few more difficult operations in abdominal surgery than the removal of an adherent retrocecal appendix may prove to be, and the several problems arising in the presence of a contaminated peritoneum call for the exercise of the maturest judgment.

But when appendicitis proves not to be appendicitis? Assuming that no method of investigation has been omitted and that the diagnosis seems absolutely clear, it has happened to every surgeon of large experience to find himself confronted with a totally different and far more formidable condition on opening the abdomen.

Four times in the recent past such disconcerting experience has fallen to my lot. One case required extensive resection of the caput coli; in two others the lesions were found in the terminal ileum, requiring resection of several inches and end-to-end anastomosis; the fourth case could be handled only by complete excision of the cecum. The pathology in the last mentioned case was so unusual and interesting that a brief report of the case is here given:

A well nourished man, aged 53, a physician, had considerable, though not unbearable, abdominal pain. The history

16. Fränkel, E.: Ueber die Menschenpathogenität des Bacillus Pyocyaneus, Ztschr. f. Hyg. 72: 486, 1912.

17. Scheidemandel, E.: Ueber die Bedeutung der bakteriologischen Harnuntersuchung für die Diagnose und Therapie (Speziell der akuten Nephritis), München med. Wchnschr. 60: 1722 (Aug. 5), 1913.

18. Campbell, R. P., and Rhea, L. J.: Acute Infective Nephritis, Surg. Gynec. & Obst. 27: 611 (Dec.) 1918.

19. Ashner, P. W.: Two Unusual Cases of Pyonephritis, J. A. M. A. 74: 320 (Jan. 31) 1920.

20. Haines, W. H.: Pyelitis of Unusual Origin, Urol. & Cutan. Rev., December, 1920, p. 698.

21. Barker, L. F.: The Clinical Symptoms, Bacteriologic Findings and Postmortem Appearances in Cases of Infection of Human Beings with Bacillus Pyocyaneus, J. A. M. A. 28: 213 (July 31) 1897.

22. Jadkewitsch, W. A.: Sur Lehre von der Pathogenität des Bacillus Pyocyaneus, Baumgarten's Jahresbericht, 1896, p. 355.

23. Motz, M. B.: Note sur un cas d'infection urinaire par le bacille pyocyaneus, Compt. rend. Soc. de biol., Feb. 1, 1896, p. 128.

24. Brown, T. R.: Cystitis Caused by Bacillus Pyocyaneus, Maryland M. J., May, 1900, p. 221.

25. David, V. C.: A Bacteriological Study of Fifty Cases of Nontuberculous Diseases of the Bladder and Kidney, Surg., Gynec. & Obst., April, 1914, p. 432.

26. Heiman, H.: A Case of Bilateral Hydro-Ureter; Chronic Pyocyaneus Infection, Am. J. Obst., July, 1913, p. 183.

27. Perkins, R. J.: Report of nine cases of Infection with Bacillus Pyocyaneus, J. M. Res., 1901, p. 281.

28. Hirschberg, M.: Akute Orchitis durch Pyocyaneusinfektion, Deutsch. med. Wchnschr., Oct. 24, 1907, p. 1782.

5. Israel, James: Primäre Actinomykose der Niere, Chirurgische Klinik der Nierenkrankheiten, Berlin, August Hirschwald, 1901, p. 266; Ein neuer Fall von sog. primärer Nierenaktinomykose, Folia urol. 5: 447 (Jan.) 1911.

6. Kunith: Ein Fall von primärer Nierenaktinomykose, Deutsch. Ztschr. f. Chir., February, 1908, p. 181.

7. Stanton, E. M.: Actinomycosis limited to the Urinary Tract, Am. Med., March 17, 1906, p. 401.

8. Cohn, T.: Pyonephritis et Prostatitis actinomycotica, Berl. klin. Wchnschr., Aug. 14, 1911, p. 1497.

9. Kellock, T. H.: Some Clinical Features of Actinomycosis, Lancet 1: 241 (Jan. 25) 1913.

10. Eustace: Primary Actinomycosis of Testicle, Brit. M. J. 2: 1704 (Dec. 16) 1899.

11. Rosenstein, P.: Die Aktinomykose der menschlichen Harnorgane, Berl. klin. Wchnschr., Feb. 4, 1918, p. 115.

12. LeNoir, M. P.: Note sur un cas d'infection urinaire mixte: Presence du bacille pyocyaneus dans l'urine humaine, Compt. rend. Soc. de biol., Jan. 18, 1896, p. 71.

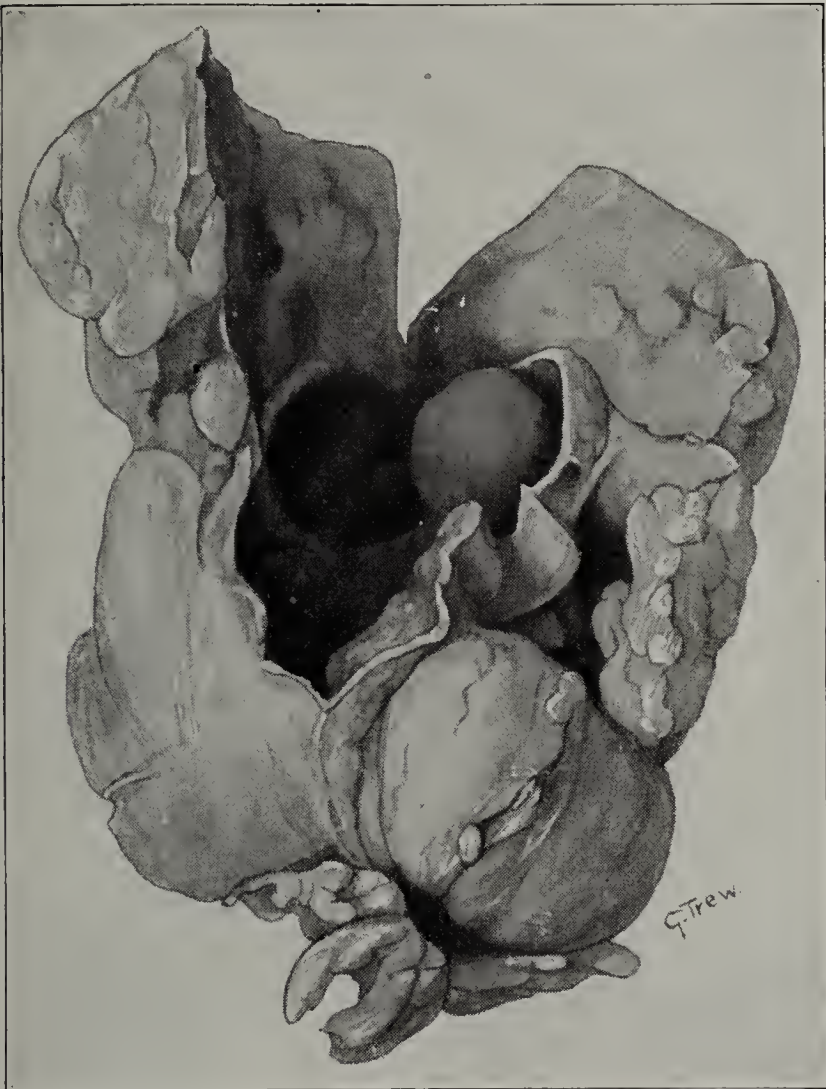
13. Bernhardt, R.: Der Bacillus des grünen Eiters in den Harnwegen, Arch. Dermat. u. Syph. 52: 349, 1900.

14. Blumer, G., and Lartigau, A. J.: A Report of Three Cases of Ascending Urinary Infection Due to the Bacillus Pyocyaneus and the Proteus Vulgaris, New York M. J. Sept. 22, 1900, p. 495.

15. Klieneberger, C.: Pyozaneusinfektion der Harnwege mit hoher Agglutination für Pyozaneusbazillen und mit agglutination von Typhusbakterien, München. med. Wchnschr. 54: 1330, 1907.



was rather indefinite. Several times in the last few years he had had attacks of pain in the lower abdomen of moderate severity, which he attributed to constipation, from which he suffered more or less at all times. The present attack had



Specimen opened, showing fecalith in its bed.

been continuous and increasingly painful for the last three days. His temperature was 101, and pulse, 95.

Late in the afternoon of May 5, 1921, I was called, and found him in bed. On palpation there was marked rigidity of the right rectus and pronounced tenderness about the region of McBurney's point. A well defined mass of firm consistency could be plainly felt at the latter situation.

The blood count revealed a leukocytosis of 22,500, with 93 per cent. polymorphonuclears.

The diagnosis of acute appendicitis and the need of immediate operation seemed equally positive, and the patient was at once sent to the hospital.

At 10 p. m., the abdomen was opened through the rectus, and the mass delivered without difficulty. This proved to be a greatly thickened cecum with a distinct tumor as large as a medium sized fist occupying the whole of the space between the origin of the appendix and the ileocecal junction. *The appendix was not involved.*

The surface of the mass was smooth, and the trouble seemed definitely limited to the structures in hand. There were numerous areas of necrosis of variable size, the largest being at the junction of the tumor mass with the ileum and involving both structures.

It was soon apparent that nothing less than a total excision of the cecum must be undertaken. This was done, an end-to-end-side anastomosis of the ileum to the ascending colon being made with sutures. The patient was returned to bed in good condition, and made a rapid and complete recovery, leaving the hospital in three weeks.

The specimen was opened at the most prominent part; a spheroidal fecalith approximately three-fourths inch (2 cm.) in diameter occupied a mucous-lined nest more than an inch (2.5 cm.) from the lumen of the cecum. At one point the mucous lining of the pocket was ulcerated entirely through,

as though the concretion were in the act of migrating to new quarters. Evidently it had formed in a diverticulum of the cecum, and, as it increased in size, pressure necrosis and extensive inflammatory deposit had gradually taken place.

The report of the pathologist was in accordance with the foregoing. Numerous sections showed only inflammatory tissue with foci of necrosis scattered throughout the mass.

Hollingsworth Building.

#### A BELT FOR LIMITING THE RESPIRATORY EXCURSION IN CASES OF PULMONARY TUBERCULOSIS

THOMAS J. BEASLEY, M.D., INDIANAPOLIS

Sewall and Swezey<sup>1</sup> describe a scheme for limiting the motion of the upper ribs in cases of pulmonary tuberculosis by the use of a constricting band from 3 to 3½ inches (7.5 to 9 cm.) wide, which is worn around the chest, fitting as high as the axillae will permit.

I have used in many cases of pulmonary tuberculosis a specially designed belt for the purpose of chest constriction. The method I have used differs from that of Drs. Sewall and Swezey in that the upper part of the thorax is not restricted.

The belt illustrated here encircles the lower portion of the chest, which, on account of a more extensive respiratory excursion, is easier to restrict than the more rigid and less expansive upper thorax.

The belt which I have found most useful for this purpose is made of moleskin cloth. It is 5 inches (12.7 cm.) wide, and is adjustable by having a lace in front, similar to those used in abdominal belts and corsets. The part of the belt which fits over the floating ribs is reenforced by a pad 1 inch (2.5 cm.) thick, which is made of curled hair.

It has been found that a belt constructed in this manner applies an even and continuous pressure over the floating ribs,



Belt for limiting respiratory excursion in pulmonary tuberculosis.

and restricts the respiratory excursion of this part of the chest without being uncomfortable.

The use of this type of bandage has been found of benefit in acute as well as chronic cases of pulmonary tuberculosis

1. Sewall, H., and Swezey, S.: *Am. Rev. Tuberc.* 5: 547 (Sept.) 1921.



in which there is a great amount of moisture in the lungs, causing violent, excessive and almost continuous coughing; and, if worn sufficiently tight, it modifies the violence and frequency of the cough, and apparently lessens the amount of sputum. By restriction of the respiratory excursion, we lessen the unnecessary harmful and forced inspiration which precedes each cough, thereby lessening the dangerous aspiration of infectious exudates into adjacent normal lung tissue. Again, constriction of the chest in this manner, while lessening the violence and frequency of the cough, at the same time lessens the traumatic damage violent coughing does to the lungs, heart and pleura. It likewise lessens in a marked degree the disturbance to the digestive organs which so usually not only accompanies the cough, but also is largely caused by the cough.

Further, in definite continuous and comfortable restriction of the respiratory excursion in tuberculous lesions of the lungs, we not only lessen the violence and frequency of the cough, but in a measure attain a degree of rest for the infected parts which is so essential to healing and ultimate recovery from any disease. In cases in which the use of artificial pneumothorax is impracticable, this method of chest restriction becomes available, and in a less pronounced measure accomplishes much good in such cases.

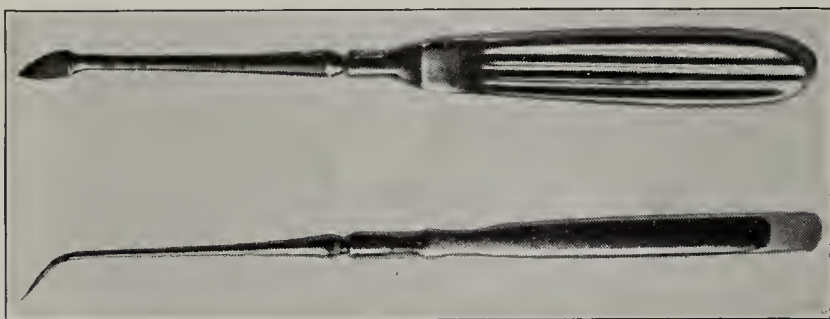
What is said here relative to constriction of the chest wall in tuberculosis is also applicable in many cases of pneumonia.

#### A NEW HYSTERECTOMY KNIFE

WILLIAM EDGAR DARNALL, M.D., ATLANTIC CITY, N. J.

This knife is 8 inches (20 cm.) long. The length of the blade is nine-sixteenths inch (1.4 cm.), and the width of the blade at the base, one-fourth inch (6.35 mm.). The blade, which is two edged, is oval, and tapers to a point. It is set at an angle of 45 degrees to the shaft. The handle is similar to the handle of a bone curet and affords a firm grasp.

My reason for devising this knife was the difficulty experienced in making dissections of the uterus deep in the pelvis with a straight knife or scissors. Its main usefulness is in those cases in which the pelvis is small, with low posterior fibroids of the uterus which almost fill the space between the uterus and the sacrum, or in like fibroids anteriorly under the pubic bone where the space is small and the uterus immovable. It is often difficult to get under the tumor with a straight scalpel and make a clean supravaginal amputation of the uterus. With this angulated knife the performance becomes



Hysterecctomy knife.

simple and easy. It is also most useful in severing the uterosacral ligaments posterior to the uterus in certain panhysterectomies and in amputating the upper vagina when the parts are fixed and the space is small. I have used this knife now for two years and have found great satisfaction with it. It is made by Harvey Pierce & Co., Philadelphia.

1704 Pacific Avenue.

**Cause of Idiopathic Epilepsy.**—The cerebral cortex has been raked over and over again by successive generations of neurohistologists without yielding up the secret of the cause of idiopathic epilepsy, and it may be that the search, transferred from this barren field to that of the autonomic nervous system, will prove more fruitful.—Percy Sargent, *Brain* 44:318, 1921.

#### A RUBBER STOPPER FOR CONTAINERS USED IN PREPARING BLOOD SERUM FOR INTRASPINAL INJECTIONS

EARL D. OSBORNE, M.D., ROCHESTER, MINN.

First Assistant in Section of Dermatology and Syphilology, Mayo Clinic, and Fellow in Dermatology, the Mayo Foundation

The use of gauze and cork stoppers for glass containers in the preparation of blood serum for intraspinal injections has not been altogether satisfactory, and in the Mayo Clinic recently such stoppers have been replaced by rubber stoppers, which eliminate most of the objectionable features of the older method.

The glass container with a gauze stopper requires a large amount of time and material. Such stoppers can be used but once. To avoid forcing the stopper into the blood while centrifuging, it is necessary to fasten the gauze edges against the outside of the container with rubber bands. Small pieces of lint and gauze invariably drop into the blood during the centrifuging. There is great risk of bacterial contamination by the edges of the container and gauze stopper.

Figure 1a shows the container with the new rubber stopping device. The rubber stopper (Fig 2) is made by boring a hole into the base of a standard rubber stopper of the size to fit over the mouth of the container. The diameter of the hole is gradually increased as it is bored. The stopper should fit snugly over the top of the container and down on the side for a distance of from 0.8 to 1.25 cm. (Fig. 1 b). The number of glass containers desired are sterilized together unstopped. The number of rubber stoppers desired are wrapped in a towel and autoclaved for forty minutes under 15 pounds steam pressure. After each pipetting a fresh sterile stopper is used. The rubber stoppers are seldom soiled with blood or serum and are easily cleaned.

The advantages of the rubber stopper are that it (1) eliminates waste of gauze and cork stoppers and rubber bands; (2) prevents contamination of the serum by foreign matter; (3) reduces the time and number of assistants; (4) lessens the risk of bacterial contamination from all sources, and (5) lessens materially the cost of preparation of the serum.

It is important to note that these rubber stoppers should be prepared before use in accordance with the technic of Stokes and Busman<sup>1</sup> by soaking in 5 per cent. sodium hydroxid solution over night.

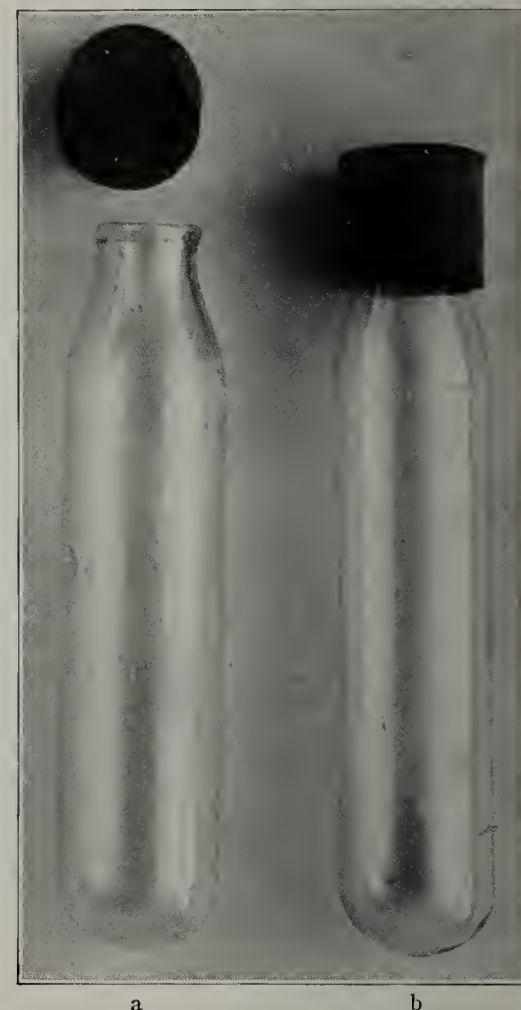


Fig. 1.—a, glass container with narrowed top and rolled edges; b, glass container with rubber stopper in place.

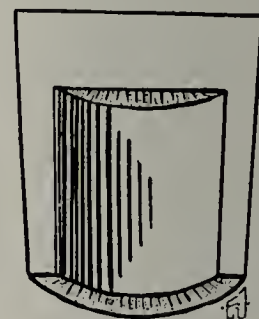


Fig. 2.—Longitudinal section of rubber stopper.

1. Stokes, J. H., and Busman, G. J.: Tubing as a Cause of Reaction to Intravenous Injection, Especially of Arsphenamin, *J. A. M. A.* 74: 1013-1017 (April 10) 1920.



## A NEW SIGN IN GASTRIC ULCER

J. M. ANDERS, M.D., PHILADELPHIA

I have observed that epigastric tenderness is more marked when the patient is standing or sitting than when lying in the dorsal decubitus position, in gastric ulcer. This sign is most conspicuous in cases in which the ulcer is situated on the anterior wall of the stomach. It is easily conceivable that the abdominal wall lies against the base of the ulcer when the patient is in the erect posture, but drops away when he is in the dorsal decubitus, so that the slightest pressure from without, when standing, is sufficient to excite sensitiveness. It is well known that patients suffering from this condition will assume postures that tend to obviate the mechanical pressure of adjacent internal organs on the ulcer.

The same sign, increased tenderness on standing, may be observed in cases of gastric carcinoma situated on the anterior wall of the stomach, although less marked and less circumscribed than in ulcer. In malignant disease, the tenderness is more commonly associated with a palpable tumor than in ulcer.

This increased sensitiveness, like the spot of tenderness when ulcers are located elsewhere than on the anterior wall, corresponds to the site of the pain after food. No use has been made by me of the algesimeter of Boas to determine the precise degree of epigastric hypersensitiveness, but I believe that the difference in intensity is great enough to be easily noted by the use of the index finger. Of course, no diagnostic value would attach to forms of supersensitiveness on assuming the erect posture not strictly circumscribed in a fixed situation. It is not improbable, in view of my personal observations, that this spot of increased tenderness may obtain in a certain proportion of the cases at least in which the ulcer is situated elsewhere than on the anterior wall, e. g., either the lesser or greater curvature.

1605 Walnut Street.

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**New and Nonofficial Remedies**

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THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**ALYPIN.**—The hydrochloride of 2-benzyloxy-2-dimethyl-amino-methyl-1-dimethyl-amino-butane. —  $\text{CH}_3\text{CH}_2\text{C}(\text{C}_6\text{H}_5\text{COO})[\text{CH}_2\text{N}(\text{CH}_3)_2]\text{CH}_2\text{N}:(\text{CH}_3)_2\text{HCl}$ .

**Actions and Uses.**—Alypin is a local anesthetic, claimed to be equal to cocaine, but is not a mydriatic. It is said not to produce disturbance of accommodation and to be less toxic than cocaine, but the evidence as to the relative toxicity of alypin and cocaine is rather conflicting. Death was reported in one case from the injection of about 7.4 Cc. of a 10 per cent. solution into the urethra and bladder; severe poisoning has resulted from smaller amounts.

**Dosage.**—Alypin is used in solutions the strength of which is about the same as that of cocaine hydrochloride. In ophthalmology, 2 to 4 per cent.; in rhino-laryngology, 5 to 10 per cent.; in urology, 1 to 4 per cent.; in minor surgery,  $\frac{1}{2}$  to 2 per cent.; in dentistry, 2 per cent.

Alypin solutions may be sterilized by boiling the required amount of water for 10 minutes in a test-tube stoppered with cotton; the drug is then added and the boiling continued over a small flame for another minute. Solutions should be freshly prepared. Epinephrine preparations may be added when a vasoconstrictor effect is desired.

Manufactured by The Bayer Co., Rensselaer, N. Y. (Winthrop Chemical Co., Inc., New York, distributor). U. S. patent 808,748 (Jan. 2, 1906; expires 1923). U. S. trademark 44,608.

Alypin is a white, crystalline powder; odorless; taste bitter, hygroscopic. It is very soluble in water; freely soluble in alcohol and chloroform; insoluble in ether. Its aqueous solutions are neutral and are not rendered turbid on the addition of sodium bicarbonate

solution in moderate quantities. Its aqueous solution may be sterilized by boiling for a period not exceeding five minutes without decomposition. Two and four per cent. aqueous solutions are quite stable, but weaker solutions are likely to become moldy. It should be protected from the air in well stoppered containers. With the aqueous solution (1:100) potassium dichromate solution produces an orange-yellow, crystalline precipitate, which is soluble in hydrochloric acid. Potassium permanganate solution produces a violet, crystalline precipitate, which turns brown on standing. The aqueous solution of alypin (1:100) gives precipitates with potassium mercuric iodide solution, iodine solution, picric acid solution, gold chloride solution and many other alkaloidal reagents; also it gives precipitates with potassium iodide solution and mercuric chloride solution. Mix 0.1 Gm. of alypin with 1 Cc. of sulphuric acid, warm the mixture to 100 C. for five minutes and carefully add 2 Cc. of water. The odor of ethylbenzoate is developed. On cooling the mixture, crystals separate which are dissolved on adding 2 Cc. of alcohol.

Dry about 1 Gm. of alypin, accurately weighed to constant weight at 100 C. The loss should not exceed 2 per cent.

Incinerate about 0.5 Gm. of alypin, accurately weighed; the ash does not exceed 0.1 per cent.

**NEOARSPHENAMINE** (See New and Nonofficial Remedies, 1921, p. 45).

**Novarsenobenzol-Billon.**—A brand of Neoarsphenamine-N. R.

Manufactured by Powers-Weightman-Rosengarten Co., Philadelphia, by license of Les Etablissements Poulenc Freres, Paris, and under U. S. patent 13,848 (Dec. 15, 1914; expires 1931) by license of the Chemical Foundation, Inc.

*Novarsenobenzol-Billon, 0.6 Gm. Ampules.*

*Novarsenobenzol-Billon, 0.9 Gm. Ampules.*

**PERTUSSIS BACILLUS VACCINE** (See New and Nonofficial Remedies, 1921, p. 303).

G. H. Sherman, Detroit.

*Whooping Cough Vaccine.*—Marketed in 10 Cc. vials, each cubic centimeter containing 2,000 million killed pertussis bacilli.

**TYPHOID VACCINE** (See New and Nonofficial Remedies, 1921, p. 310).

G. H. Sherman, Detroit.

*Mixed Typhoid Vaccine.*—Marketed in 10 Cc. vials, each cubic centimeter containing 1,000 million killed typhoid bacilli and 500 million each of paratyphoid bacilli A and B.

**MIXED BACTERIAL VACCINES** (See New and Nonofficial Remedies, 1921, p. 314).

G. H. Sherman, Detroit.

*Acne Staphylococcus Vaccine.*—Marketed in 10 Cc. vials, each cubic centimeter containing 40 million killed acne bacilli and 1,000 million killed Staphylococcus albus.

**COLON BACILLUS VACCINE** (See New and Nonofficial Remedies, 1921, p. 299).

Persson Laboratories, Mount Clemens, Mich.

*Bacillus Coli Antigen (No. 50).*—Marketed in vials of 20 Cc., each cubic centimeter containing 1,000 million killed colon bacteria, preserved with cresol.

**STAPHYLOCOCCUS VACCINE** (See New and Nonofficial Remedies, 1921, p. 306).

Persson Laboratories, Mount Clemens, Mich.

*Furunculosis Vaccine Mixed-Persson (No. 37).*—Marketed in 20 Cc. vials, each cubic centimeter containing 2,000 million killed staphylococcus aureus and 2,000 million killed staphylococcus albus.

*Staphylococcus Aureus Antigen (No. 49).*—Marketed in 20 Cc. vials, each cubic centimeter containing 3,000 million killed staphylococcus aureus, preserved with cresol.

**GONOCOCCUS VACCINE** (See New and Nonofficial Remedies, 1921, p. 300).

Persson Laboratories, Mount Clemens, Mich.

*Gonococcus Antigen (No. 47).*—Marketed in 20 Cc. vials, each cubic centimeter containing 3,000 million killed gonococci, preserved with cresol.

**STREPTOCOCCUS VACCINE** (See New and Nonofficial Remedies, 1921, p. 309).

Persson Laboratories, Mount Clemens, Mich.

*Streptococcus Antigen (No. 48).*—Marketed in 20 Cc. vials, each cubic centimeter containing 1,000 million killed streptococci, preserved with cresol.

**PNEUMOCOCCUS VACCINE** (See New and Nonofficial Remedies, 1921, p. 304).

Persson Laboratories, Mount Clemens, Mich.

*Pneumonia Vaccine (No. 36).*—Marketed in 30 Cc. vials, each cubic centimeter containing 8,000 killed pneumococci to Types I, II, III and Group IV in equal proportions.



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SATURDAY, FEBRUARY 25, 1922

## REPAIR OF PERIPHERAL NERVES

With the publication of the observations of Miller<sup>1</sup> and Malone,<sup>2</sup> the rationale of the surgical treatment of injuries to peripheral nerves seems to be complete. Miller correlates the microscopic changes in the process of nerve regeneration with the gross changes and with the restoration of the tensile strength of the nerve at the point of suture, showing that, at the end of the fourth week, physical and physiologic healing alike are complete. Malone shows the practical application of the laws of reflex action to the determination of the presence or absence of conducting neurons at any point in the course of the regenerating nerve distal to the line of suture, demonstrating that the fact of physiologic healing in any sensory or mixed nerve may be proved by the elicitation of reflex respiratory stimulation on the application of a threshold stimulus at any point on the nerve trunk distal to the line of suture to or beyond which the axons have penetrated.

For many years it has been admitted that the first steps in the regeneration of the peripheral nerves following section appeared as the proliferation of the nuclei of the neurilemma, with the formation of protoplasmic bands in the proximal and the peripheral segments of the divided nerve; but whether the neuraxis was of central origin or whether it might be formed complete in the peripheral segment and await only union with a similar element in the proximal segment to become a fully functioning nerve tract offered a field for debate. In 1912, Ranson<sup>3</sup> convincingly demonstrated the origin of the protoplasmic bands from the proliferation and growth of the cells of the neurilemma and the bridging of the suture line in a divided nerve by them. He further showed that the new axis cylinders appear on the eighth day as side branches above the zone of degeneration in the proximal stump, and travel distad across the gap and down the peripheral stump guided by the protoplasmic bands. Kirk and Lewis<sup>4</sup> observed similar phenomena after

tubulizing with fascia a gap formed by the removal of a 10 mm. ( $\frac{3}{8}$  inch) segment of the sciatic nerve in dogs. They demonstrated that the protoplasmic bands which form bridge the gap within six days, and that the regenerated neuraxes from the proximal stump penetrate the distal segment within three weeks.

Huber, in 1919, called attention to the importance of the anatomic structure of the nerve trunk and to the nerve pattern. The nerve trunk he likened to a conduit system, each tube of the system leading to some definite point. In the regeneration of nerve fibers, the protoplasmic bands, supported by the endoneurium, are comparable to the empty tubes of such a conduit system, some leading to motor end-plates, some to sensory end-organs. If the distal segment of the nerve were rotated so that the patterns of the distal and proximal segments no longer coincided, then motor nerves might find their way down sensory pathways, and sensory nerves might find their way to motor organs and thus be as effectually lost as though they had never been regenerated. The demonstration that individual nerve fibers may not always occupy the same relative position in the nerve trunk but may interweave with other fibers to a certain extent need not deprive the nerve pattern idea of significance from the practical standpoint, although the longer the segment to be replaced, the more unlikely it appears that the proximal and distal nerve patterns in the unrotated segments would coincide. Also, the importance of the conception of the protoplasmic bands in the rôle of a conduit system remains unshaken.

Clinically, the advances in the technic of nerve suture have been so great as to render obsolete most of the time-honored methods of nerve grafting and of tubulization of nerve defects by fascia, formalized veins and other ingenious but highly uncertain artifices. Today, with very few exceptions, defects in nerve trunks may be repaired by direct end-to-end suture with reasonably bright prospects of success. This has been made possible by the development of five aids to the approximation of the ends of a divided nerve. Briefly, these methods are: (1) Mobilization of the nerve by open dissection for considerable distances above and below the point of suture; much more may be gained in this manner than by stretching the nerve without first dissecting it free. (2) Adduction or extension of limbs, as may be indicated in order to relax the nerve trunk. (3) Flexion of joints, as the elbow and wrist in lesions of the nerve trunks of the forearm. (4) Transposition of nerve trunks to shorter routes. (5) A two-stage operation; at the first sitting, the fibrous ends of the divided nerve are approximated as closely as possible, by means of the proper application of the four devices mentioned above, and sutured. During the succeeding weeks the nerve is stretched by permitting gradual extension and abduction of the limbs so that at the second sitting it may be possible to obtain direct

1. Miller, E. W.: Nerve Suture, *Arch. Surg.* **2**: 167 (Jan.) 1921.  
2. Malone, G. Y.: A Method of Determining the Early Regeneration of Nerve Fibers at Operation, *Arch. Surg.* **3**: 634 (Nov.) 1921.  
3. Ranson, S. W.: Degeneration and Regeneration of Nerve Fibers, *J. Comp. Neurol.* **22**: 487, 1912.  
4. Kirk and Lewis: Regeneration of Peripheral Nerves, *Bull. Johns Hopkins Hosp.* **28**: 71 (Feb.) 1917.



approximation of the nerve segments after proper excision of the impervious fibrous end-bulbs. Naffziger<sup>5</sup> estimates that by the proper combination of methods, gaps of 10 cm. (4 inches) or more in the chief nerve trunks of the extremities may be successfully bridged and end-to-end suture obtained.

#### THE HEMOTOXINS OF ANIMAL PARASITES

The parasitic invaders of the human organism are not all of microscopic proportions. Besides bacteria and the protozoa, a variety of types of worms find lodgment in the alimentary canal and also in various tissues of the body. Some of them travel without much regard for the natural barriers of the different organs, and in penetrating from one part into another they may produce damage by purely mechanical means. Aside from this obvious harm it is more than likely that many if not all of the commoner animal parasites add the menace of toxic products to the injuries—the bites, lacerations of mucosae, obstructions of ducts and vessels and other mechanical disturbances—which they create.

The evidence for the production of harmful compounds by familiar animal parasites is at least twofold. The hosts frequently develop “immunity” reactions of a type commonly elicited only by chemical substances. The serologic reactions to the secretions of parasitic worms have not yet been extensively studied; but the evidence already at hand, and likewise the eosinophilia so characteristic of the infestation with certain worms, point directly to the development of humoral immunity in some cases. Furthermore, “poisons” have actually been separated from animal parasites, so that the possibility of a discharge of toxic agents within the body is rendered more likely. Nearly a quarter of a century ago, Schauman and Tallqvist<sup>6</sup> reported the discovery of a blood toxin in the broad tapeworm of man (*Diphyllobothrium latum*). A recent writer has remarked that although this announcement did not arouse the same degree of activity in parasitology that Ehrlich’s simultaneous discovery of the toxin of *Bacillus tetani* did in bacteriology, the results of Schauman and Tallqvist’s investigations were not without influence on subsequent researches in parasitology, the influence being especially marked in connection with studies on the causes of the anemia that occurs in cases of infestation with hookworms.

Hemolysins have long been prominent as probable products of animal parasites chemically detrimental to man. Schwartz<sup>7</sup> of the Bureau of Animal Industry, who has reinvestigated the subject of hemotoxins from parasitic worms, has shown that hemagglutinins and

anticoagulins may be associated with the hemolysins that stand out as of prime importance and have been charged with the production of various types of anemia attending parasitic invasions of man. Some of these hemolysins appear to be quite thermostable; others, including hookworm derivatives, are less resistant to heat. The hemolysins from parasitic worms are not uniquely specific. Normal serum seems to inhibit their action.

The fact that some of the hemolysins, such as that of the hookworm, are not easily extracted from the parasites harboring them has raised the question whether, in truth, they are ordinarily liberated from the bodies of the latter and actually enter the circulation of the host. Thus, Blanchard<sup>8</sup> has doubted the etiologic significance of these toxic substances because of the possibility that they are either not liberated by the worms or, if liberated, may be thrown out of the body before they can injuriously affect the host. There is the further possibility that the hemotoxic components are not liberated until the worms sicken, degenerate or disintegrate. Schwartz has thrown the weight of his experience in favor of the view that toxic substances from parasitic worms are of etiologic significance in parasitic diseases. Hence they deserve careful consideration in further studies of the etiology and therapy of conditions in which animal parasites may be in some way concerned.

#### DIABETIC LIPEMIA

In a chapter entitled “What Every Diabetic Patient Should Know,” Joslin<sup>9</sup> has described diabetes as a disease in which the patient fails to get the full benefit of the carbohydrate (starch and sugar) eaten. In some cases, he adds, there is difficulty in the assimilation of protein and fat. The physician long ago grasped the significance of this defect in carbohydrate metabolism. For many years the appearance of sugar in the urine served as an index of the abnormality. Subsequently, thanks to the development of suitable methods for the estimation of sugar in small specimens of blood, the study of the glucose content in the circulating fluids of the body and its variations in response to diet has furnished even more accurate information regarding the carbohydrate-assimilating functions of the patient. There has also come to be a growing realization that proteins may become potential sources of sugar in the metabolism, so that the extent of breakdown of these nitrogenous foodstuffs cannot be regarded with indifference when the ability of the organism to utilize carbohydrate is taxed beyond its capacities, owing to the existence of a pathologic state.

The inadequacy of the fat metabolism in many cases of diabetes has found less prompt recognition. Fat is,

5. Naffziger, H. C.: Methods to Secure End-to-End Suture of Peripheral Nerves, Surg. Gynec. & Obst. **32**: 193 (March) 1921.

6. Schauman, O., and Tallqvist, T. W.: Ueber die blutkörperchen-auflösenden Eigenschaften des breiten Bandwurms, Deutsch. med. Wchnschr. **24**: 312, 1898.

7. Schwartz, B.: Hemotoxins from Parasitic Worms, J. Agric. Res. **22**: 379 (Nov. 19) 1921.

8. Blanchard, R.: Substances toxiques produites par les parasites animaux, Arch. de parasitol. **10**: 84, 1905.

9. Joslin, E. P.: Treatment of Diabetes Mellitus, Philadelphia, Lea and Febiger, 1917, p. 470.



of course, primarily involved in the dreaded "acidosis"; and although it becomes one of the few remaining sources of nutriment to an organism deprived of the advantage of the most prominent food supply, namely, carbohydrates, in the usual every day diet of normal persons, it has well been said that "fat at one time may save the life of the diabetic, but at another period may destroy it."<sup>9</sup> Only recently, Blatherwick<sup>10</sup> has substantiated the assertions of Newburgh and Marsh<sup>11</sup> that many patients with mild and moderate diabetes are apparently able to utilize satisfactorily large amounts of fat, as indicated by constancy of the blood fat level and by the absence of acetone bodies in the urine. It remains to be learned, Blatherwick adds, whether or not such high fat diets, continued for a considerable period, will prove to be an overstrain on the fat-burning mechanism.

One reason why the disturbances in the behavior of fat have not been appreciated more readily lies in the lack of readily detected symptoms. Unburned fat does not "overflow" into the urine as does sugar in hyperglycemia so that it can easily be detected by chemical tests. Nevertheless, the fact that marked and persistent lipemia may occur under the older forms of treatment of diabetes with carbohydrate-poor diets rich in fat has long been known, the condition being recognizable in a crude way by the milky appearance of the blood plasma. This is merely a visible sign of some disturbance of fat metabolism. In the case of hyperglycemia and the associated glycosuria, the phenomenon is generally attributed to failure in the utilization of the carbohydrate rather than primarily to overproduction. Bloor<sup>12</sup> has attempted to ascertain in the case of diabetic lipemia to what factor the disturbance of balance between "inflow" and "outflow" of fat in the blood is attributable. According to him, the fat which produces the lipemia may be of endogenous or exogenous origin or both, but the phenomena of the lipemia are the same in either case. Bloor has ascertained that, in lipemia of whatever origin, all three blood lipoids (fat, lecithin and cholesterol) are increased, fat generally showing the greatest ultimate increase, and cholesterol next. He regards it as probable that they have to do with the metabolism of the fat, since whenever the fat of the blood is increased they are also increased, and, conversely, when the fat of the blood is low they also are low. Bloor suggests that the appearance of persistent lipemia is physiologically equivalent to the appearance of sugar in the urine, the abnormality in either case being attributable, perhaps, to the lack of some suitable hormone concerned with the metabolism of the respective foodstuff. More specifically, he assumes that the cause of the lipemia of diabetes is to be sought primarily in a diminished

power to remove fat from the blood, referable to an inadequate supply of the pancreatic hormone, and secondarily to a temporary disablement of the fat-burning mechanism due to overwork, which is recovered from rather slowly.

#### THE PURPOSE OF THE GALLBLADDER

The explanation for the existence of the gallbladder has aroused as much discussion as the futility of the appendix or the utility of the thymus. The value of the gallbladder as a lucrative stone quarry for the artisan surgeon is admitted by all; but when the triumphant operator has removed it, life and gall seem to flow on as if the offending member had never had any function but that of lithogenesis. Comparative anatomy, which helps to clear up so many puzzles, here only serves to baffle, for some animals are entirely devoid of a gallbladder, and yet thrive apparently as well as those more liberally endowed. Thus, McMaster<sup>1</sup> relates that among the higher animals it is present in the cow and sheep, while it is absent in the horse, present in the goat, and absent in the closely related deer, and is to be found in the hog and wild boar but not in the peccary of South America. Among birds, the hawk and owl possess it, while doves do not; and among the rodents the mouse is found with the organ, the rat without. One species of gopher, the pocket gopher, is without a gallbladder, while another, the striped gopher, possesses it. Woods Hutchinson is authority for the statement that in the giraffe it is at times present and again not.

Careful studies in the Rockefeller Institute<sup>2</sup> have indicated clearly enough that when there is a gallbladder it works as vigorously as if it had a purpose in life, concentrating at a remarkable rate the bile that reaches it, for the mere passage of bile through the gallbladder from the cystic duct was found to concentrate it from two to four times, while the bile that enters the intact gallbladder may be concentrated ten times in twenty-four hours. Such power of concentration makes it possible for the gallbladder to serve as a storage place for bile despite its relatively small capacity, although at the same time the concentration favors the precipitation of the least soluble component of the bile, the cholesterol, and undoubtedly this explains the frequency of gallstones. On the other hand, the demonstration of this concentrating ability of the gallbladder fails to explain its functional value entirely, since we have before us the apparent good health of those who have been robbed of this organ, and the manifest good health of those species of animals that have no gallbladder. Certainly it cannot be a matter of different needs because of dietary differences, when the mouse has a gallbladder (and gallstones too) and the rat gets along so well without either.

10. Blatherwick, N. R.: Observations on Blood Fat in Diabetes, *J. Biol. Chem.* **49**: 193 (Nov.) 1921.

11. Newburgh, L. H., and Marsh, P. L.: Use of a High Fat Diet in Treatment of Diabetes Mellitus, *Arch. Int. Med.* **26**: 647 (Dec.) 1920.

12. Bloor, W. R.: Lipemia, *J. Biol. Chem.* **49**: 201 (Nov.) 1921.

1. McMaster, P. D.: *J. Exper. Med.* **35**: 127 (Feb.) 1922.

2. Rous, Peyton, and McMaster, P. D.: *J. Exper. Med.* **34**: 47, 75 (July) 1921.



There is the possibility that when there is no gallbladder the ducts take over its storage and concentrating function, since it is known by surgeons that after cholecystectomy the bile ducts become dilated. McMaster has put this hypothesis to the test by comparing the behavior of the ducts in mice, which have a gallbladder, and in rats, which have none, but finds that the ducts of the rat do not exhibit any power of concentrating bile such as is possessed by the gallbladders in other species. On the other hand, it was found that the bile as secreted by the liver of the rat is about eight times as concentrated as mouse bile, at least as far as pigment content goes, suggesting that the rat does not have a gallbladder since it has no need of concentrating its bile. Whether the same difference in concentration will be found universally between animals with and without gallbladders remains to be seen. Certainly it does not apply to the human subject, whose gallbladder does have active concentrating powers, and without which the bile ducts become distended to a degree that is far from normal, and possibly capable of injury to the hepatic tissues even if this injury is not clinically obvious. Furthermore, instead of the normal relation of bile discharge to the stage of digestion, after cholecystectomy a great difference is observed. Bile dribbles continuously from the ampulla of Vater, and during fasting may fill the duodenum and be voided as such in the stools. The disturbance of function thus indicated is not without a bad effect on the digestive processes, masked though this usually is. Rost applies the term "biliary incontinence" to the continuous escape of secretion into the intestine after removal of the gallbladder. The incontinence is associated with an abnormal relaxation of the sphincter; the latter, however, frequently recovers its tone as duct dilatation ensues. As Rous and McMaster say, the fact that few ills follow on removal of the normal gallbladder means merely that the body has adapted itself to the loss, not that the loss is unimportant. In this connection the surgeon would do well to remember that uncertainty as to function and confidence in readjustment are at best questionable motives for adventures in ablation.

#### SHOCK AS A RESULT OF TOXEMIA

During the World War the subject of shock early assumed a place of unusual prominence in connection with the surgical problems presented by the injured. The topic was in no sense a new one, for the genesis of surgical shock had already been debated many times and had given rise to a variety of more or less conflicting and inconclusive speculations in medical literature. These earlier hypotheses, as well as more recent ones, were earnestly discussed by physiologists and surgeons in the eventful days of supreme military activity, in the hope of discovering some tenable solution of the cause of shock and of providing some

rational procedure for the relief of its threatening symptoms. The history of these efforts has repeatedly been discussed in *THE JOURNAL*, particularly at the time when the need of more knowledge was greatest.

Cannon<sup>1</sup> has recently summarized the best known features of wound shock as characterized by a low venous pressure; a low or falling arterial pressure; a rapid, thready pulse; a diminished blood volume; a normal or increased erythrocyte count and hemoglobin percentage in peripheral blood; a leukocytosis; an increased blood nitrogen; a reduced blood alkali content; a lowered metabolism; a subnormal temperature; a cold skin, moist with sweat; a pallid or grayish or slightly cyanotic appearance; thirst; rapid respiration; often, vomiting and restlessness; and anxiety, changing to mental dulness and lessened sensitivity. Many of these features, he adds, may appear at once or as soon after the reception of the wound as the observations can be made; or they may develop only after the lapse of several hours. At one time it was urged that the widespread effect in the organism induced by severe trauma might be due to nervous impulses. Numerous investigations, however, have made such a theory untenable. It matters little for the outcome of the trauma whether the injured parts are denervated or not; in truth, there is no clearly demonstrable essential relation between the production of shock and an excessive stimulation of the central nervous system. Equally true is the now recognized fact that the low blood pressure initiated by severe injury is not primarily due to a loss of vasomotor tone or any comparable sort of exhaustion. As Cannon has convincingly pointed out anew, if the low blood pressure resulting from local trauma is not due to loss of blood into the injured region, or to reflex vasodilation, or to depression or exhaustion of the vasoconstrictor center, or to fat emboli, or to acapnia, the connection between the local damage and the general bodily state may reasonably be looked for in the remaining great connecting system—the circulation.

In harmony with this conclusion there has arisen a theory of a toxemic cause of wound shock, based on evidence for the existence of a toxic factor liberated in the injured tissues. Striking analogies between the physiologic effects of certain occasional tissue components and the phenomena of surgical shock have been presented by Dale<sup>2</sup> and his associates in England. Poisonous protein derivatives, products of partial digestion, of bacterial action and tissue manipulation readily produce fall of blood pressure attended with a series of changes in which "dilation of the capillaries and pooling of blood within them, poisoning of their endothelial walls so that they are abnormally perme-

1. Cannon, W. B.: Studies in Experimental Traumatic Shock, IV, Evidence of a Toxic Factor in Wound Shock, *Arch. Surg.* 4: 1 (Jan.) 1922.

2. Dale and Laidlaw: Memorandum upon Surgical Shock and Some Allied Conditions, English Medical Research Committee, February, 1917. Dale, Laidlaw and Richards: Traumatic Toxemia, English Medical Research Committee, Report Series 26, March, 1919, p. 9.



able, escape of plasma through these walls into the tissue spaces, and consequent concentration of the corpuscles are the main features." Championing the importance of these features characteristic also of traumatic shock, Cannon has presented a convincing review of clinical as well as purely experimental evidence for traumatic toxemia, citing in particular the notable contributions of the French surgeon Quénu.<sup>3</sup> They show, among other interesting observations, that anything which delays or checks absorption from the injured region delays the development of shock; but if there is a sudden removal of the check, serious results follow.

If shock is actually the outcome of an intoxication, presumably by protein derivatives set free from areas of tissue destruction, some of the manifestations of severe burns become more easy of interpretation. As Cannon concludes, in harmony with other experts in this field, the present conception seems to be that not only the shock following burns, but also the delayed shock consequent on severe trauma, is properly placed in the same category with other forms of general depression of bodily functions and defective circulation due to the setting free of toxic material in the body.

## Current Comment

### THE EARLIEST MAN AND THE LATEST DISEASE

The newest contribution to the history of human evolution, the Rhodesian skull,<sup>4</sup> seems to be one of the most important finds yet made. It was obtained in a mine in southern Rhodesia along with some other human bones and very crude flint and quartz instruments; and, although in some features the most primitive of early human skulls, in others it has many points of resemblance to or even identity with the skull of modern man. The supra-orbital region is massive and gorilla-like, and the cranium is very flat on top; but the posterior portion is so large that the total capacity is about as great as that of a recent human skull. On the other hand, the massive muscle attachment ridges are of the most primitive type. The palate is well arched, there is great length of face, and the wisdom tooth is reduced in size as in modern man, a feature not found in other fossil skulls. In contrast to the Neanderthal man, who is supposed to have walked in a crouching position because of his curved femur, the Rhodesian man had a straight leg, wherefore it has been stated that this specimen represents the direct ancestors of modern man, the Neanderthal man representing a branching off from the main ancestral tree. For the medical man this new specimen has one particularly interesting feature, the presence of unmistakable evidence of dental caries and even of abscesses at the roots of the teeth. In discussing the subject of

paleopathology, a few weeks ago,<sup>5</sup> we commented on the fact that in ancient Egypt dental disease and arthritis deformans were even more prevalent than they are now. The Egyptian mummies are chronologically recent, as compared with the Rhodesian man. There surely can be little justification in attributing dental caries and alveolar abscesses to modern civilization, overcooked foods or too much candy, in view of the testimony of our earliest known ancestor.

### THE VITAL CAPACITY IN HEART DISEASE

The study of vital capacity, that is, the total quantity of air which can be made to leave the lungs when a maximal inspiration is followed by a maximal expiration, has engrossed the attention of clinicians in increasing measure for several years. There are a number of conditions in which the loss of respiratory accommodation in the patients can well be understood. In pulmonary emphysema, for example, a diminution in vital capacity may arise, so that this factor, together with the relatively imperfect mixture of the respired air with that in the alveolar spaces, is liable to bring about suffering from respiratory insufficiency whenever there is an increased demand for gaseous interchange in the lungs. In other cases the presence of exudates in the alveoli and finer bronchi, or the collapse of the lungs from outside pressure or consolidation of parts of these organs, occasions a reduction in vital capacity. There are patients with cardiac disease, however, in whom the vital capacity is demonstrably reduced by one third or more of its usual value, although such physical signs as pulmonary edema, pleural effusion, hepatic enlargement and similar factors sufficient to account for the degree of decrease observed are entirely wanting. Such cases have often proved to be a puzzle from the standpoint of scientific interpretation. Recent experiments conducted by Drinker, Peabody and Blumgart<sup>6</sup> at the Medical School of Harvard University offer a possible clue to an explanation. They have shown that intravascular blood, as well as edema and similar mechanical factors, can encroach markedly on the pulmonary air space. Thus, when a high degree of pulmonary stasis was brought about by obstruction to the pulmonary veins, changes in ventilation due to decrease in the vital capacity ensued. That the effect on pulmonary ventilation in such cases was the result of vascular change alone is indicated by the fact that release of pressure on the veins resulted in a virtually complete return to the previous normal conditions. In other words, the experiments show that if the pulmonary veins are obstructed to such a degree that congestion of the pulmonary vessels without exudation is produced, there results interference with the entrance of air into the lungs, which is relieved as soon as the obstruction is removed; but that, if the circulatory conditions are such that exudation of fluid out of the vessels into tissues and air passages is produced, a permanent inter-

5. Paleopathology, editorial, J. A. M. A. 78: 282 (Jan. 28) 1922.

6. Drinker, C. K.; Peabody, F. W., and Blumgart, H. L.: The Effect of Pulmonary Congestion on the Ventilation of the Lungs, J. Exper. Med. 35: 77 (Jan.) 1922.

3. Quénu: Rev. de chir. 56: 204, 1918.

4. Science 55: 129 (Feb. 3) 1922.



ference with the entrance of air into the lungs results. Clinical analogies to the experimental conditions just recorded are found in mitral stenosis. The Boston investigators remind us that the inability to breathe deeply, and the low vital capacity which is one of its outstanding features in early stages of this cardiac defect, may well be explained by engorgement of the pulmonary vessels and lung rigidity, just as these factors explained the interference with the entrance of air into the lungs in their experiments. At a later stage of mitral stenosis, physical examination reveals râles in the air passages and fluid in the pleural cavities.

## Association News

### THE ST. LOUIS SESSION

#### Authorization of Special Railroad Fares by Various Passenger Associations

The New England Passenger Association has authorized the sale of special rate round-trip tickets from points within its territory to St. Louis. These tickets are to be sold on presentation of identification certificates and at the price of a fare and one-half. Similar authorization has been issued, as previously announced, by the Trunk Line Association, the Central Passenger Association, the Southeastern Passenger Association, the Southwestern Passenger Association and the Western Passenger Association. The combined territories of these associations include practically all the continental area of the United States east of the Rocky Mountains.

The identification certificates are now available. Members may secure these certificates by writing to the Secretary of the American Medical Association, 535 North Dearborn Street, Chicago, and enclosing a self-addressed, stamped envelop.

#### The Scientific Exhibit

The scientific exhibit at the St. Louis session will be located on the auditorium floor of the Moolah Temple, Lindell Boulevard near Vandeventer Street. The entire scientific exhibit will be on one floor. The various booths and spaces for individual exhibitors, organizations, colleges, etc., will occupy one half of the floor of the auditorium and the entire stage. The moving picture theater will be located in the hall just off of the large auditorium. Ample space for both floor and wall exhibits has been provided. Application blanks are now being printed and will be sent out to all those interested. A program of educational talks and demonstrations from lantern slides and moving pictures is being prepared and will occupy about half of the moving picture program, the other half of the time being devoted to individual exhibitors. Any Fellow desiring either wall or floor space in the scientific exhibit or time in the moving picture theater, for presenting and demonstrating scientific material, is requested to write the Director of the Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois, stating the nature of his exhibit and the amount of space or time desired. Application blanks and further details will be sent on request.

**Mental Hygiene is Individualization.**—Mental hygiene means individualization above everything. It aims to give free play to the development of the personality. This does not mean that each individual is to have his own way without regard to others. On the contrary, free play of personality for all promotes harmony and smooth action, for the well adjusted individual knows how to get on in his environment. The conflicts and distresses that arise among individuals can usually be traced to personality defects.—M. C. Jarrett, *Hospital Social Service* 36:364 (May) 1921.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Personal.**—Dr. Augustus D. Matthews, Aariton, was elected president of the Dale County Medical Society, at the recent meeting held at Ozark, and Dr. Malcolm O. Grace, Ozark, was elected secretary-treasurer.

**Medical Association Enlarged.**—At a recent meeting of the Lauderdale County Medical Association, it was decided to enlarge the society by including the adjacent counties of Kemper, Winston, Newton, Neshoba, Clarke and Jasper with the present organization.

**Lack of Accommodations for Tuberculous Patients.**—It has been announced by the Jefferson County Antituberculosis Association that the Red Mountain Tuberculosis Camp has a capacity for forty patients, and that 360 who are financially unable to go to private sanatoriums are awaiting treatment. Only \$8,000 was realized through the sale of Christmas seals, and voluntary contributions are being solicited.

### DISTRICT OF COLUMBIA

**Appropriation for New Hospitals.**—Chairman Langley, of the house, public buildings and grounds committee, announced, February 13, that President Harding has approved the appropriation of \$16,000,000 for the construction of additional hospitals for disabled ex-service men. Passage is advocated by the federal board of hospitalization also.

### ILLINOIS

**Personal.**—Dr. Clarence A. Earle, Des Plaines, recently resigned from the position of district health superintendent of the state department of public health and has been succeeded in that capacity by Dr. George A. Klein, Chicago.

**Champaign County Medical Society.**—At the annual meeting of the society held recently, Dr. David E. Yantis was elected president; Dr. James F. Hilgenberg, Pesotum, vice president, and Dr. Lemuel L. Gregory, Urbana, secretary-treasurer.

**Peoria City Medical Society.**—At the annual meeting of the society, held recently, the following officers were elected for 1922: Dr. Charles G. Farnum, president; Dr. William B. Eicher, first vice president; Dr. Otto W. Simpson, second vice president, and Dr. Sidney H. Easton, secretary-treasurer.

**Ophthalmic Survey.**—Dr. Russell W. Raynor, U. S. Public Health Service, has been assigned for duty with the Illinois State Department of Health to make a survey in the southern sections of the state of a contagious infection of the eyes, which is prevalent there. Dr. Raynor has been in charge of the government trachoma hospital in Pikesville, Ky., for a number of years.

**Epidemic in Rantoul.**—A mild epidemic of scarlet fever recently developed at the flying field near Rantoul where more than 100 persons fell victims to the disease. The situation has resulted in the establishment of regular medical inspection of schoolchildren in Rantoul so that greater preventive protection is now afforded them against this as well as all other communicable diseases.

**Public Health Advisers to Meet at Cairo.**—The next regular meeting of the Illinois Board of Public Health Advisers will be held at Cairo on Saturday, March 4. The program includes a conference during the morning, a luncheon with the chamber of commerce at noon, meetings with the southern Illinois health officers and women's club representatives in the afternoon and an evening session with the Alexander County Medical Society. A meeting each for both Carbondale and Murphysboro has been scheduled for the evening. All members of the advisory board will attend the morning meetings while one or more will be present and will speak at each of the afternoon and evening meetings.

### Chicago

**The Robert Koch Society.**—At the joint meeting of the Robert Koch Society for the Study of Tuberculosis and the



Chicago Medical Society held, February 22, in Chicago, Dr. Paul A. Lewis delivered an address on "Relation of Heredity to Tuberculosis."

#### INDIANA

**Help for Student Nurses.**—At the meeting of the City Hospital Nurses' Alumnae Association it was decided to establish a loan fund for student nurses at the City Hospital, Indianapolis, which will be known as the "Mother Bryce Fund" in memory of Mrs. Peter F. Bryce, for the benefit of prospective students who are prevented by lack of money from taking up the study of nursing as soon as they have finished high school.

**Hospital News.**—Plans and specifications have been approved for a new modern county tuberculosis sanatorium in five units to be erected near Crown Point at a cost of \$350,000. —A campaign has been started to raise \$350,000, for the erection of a 100-room wing, contagious department, and a nurses' training school at St. Elizabeth's Hospital, Lafayette. —A bond issue of \$150,000 for the construction of additional hospital facilities at the Marion County Hospital for the Insane, Julietta, has been arranged. —Contracts have been awarded for the construction of twelve buildings to constitute the female colony of the Indiana Village for Epileptics, at a cost of \$300,177. These buildings are expected to be ready for occupancy early in the fall. —A ward for colored patients will be added to the Byron Hospital, Fort Wayne.

#### IOWA

**Personal.**—Dr. Ora Frank Parish has been appointed surgeon for the Rock Island Railroad, between Brooklyn and Newton. —Dr. John H. Peck, Des Moines, was elected Iowa representative of the Iowa Tuberculosis Association at a recent meeting and Dr. Roscoe P. Carney, Davenport, director of Scott County.

**Physician to Serve Second Sentence.**—It is reported that Dr. William A. Benadom, Davenport, who was released from the federal prison at Leavenworth, Kan., where he has served more than nine months on conviction of violation of the Harrison Narcotic Law, was rearrested, February 14, by the sheriff on a previous conviction to serve one year in Scott County Jail, Davenport, for resisting an officer of the law.

#### KANSAS

**Personal.**—It is reported that Dr. Lucullus R. Sellers has offered his resignation as superintendent of the Larned State Hospital, April 1. —Dr. H. Gerald Shelly, Mulvane, was elected president of the Sumner County Medical Society, recently.

#### KENTUCKY

**Personal.**—Dr. David Y. Ragan, Coal Spring, has been appointed county district physician.

#### LOUISIANA

**Hospital News.**—It has been announced by Albert B. Dinwiddie, Ph.D., president of the Tulane University of Louisiana School of Medicine, New Orleans, that it is planned to erect a new modern hospital on the university campus at a cost of between \$1,000,000 and \$2,000,000. The hospital will be in connection with the medical school of the university and will be constructed along substantial lines.

**Ordinance Declared Unconstitutional.**—The New Orleans city ordinance providing for the detention of women infected with communicable disease in the isolation hospital was declared unconstitutional by the supreme court, February 6, when the decision of Judge Dowling in the case of Ida Johnson was upheld. This ordinance was passed in 1917 as a war measure and has been enforced since that time.

#### MARYLAND

**Personal.**—Dr. William S. Thayer has been made president of the Friends of Art Society of Baltimore. —Dr. Ira L. Fetterhoff has bought the Biedler-Sellman Sanatorium in Baltimore and, with fifteen other physicians, will operate the institution under the name of the Homewood Hospital. Dr. Fetterhoff has been in charge of the hospital since Nov. 1, 1921. —Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, has been awarded the Distinguished Service Medal for "meritorious and conspicuous service as specialist in hospital management and construction." The presentation took place at Fort Howard, Maryland, and was

made by Major-Gen. Charles J. Bagley, commander of the third army corps area.

#### MASSACHUSETTS

**Auxiliary Tuberculosis Association.**—At the meeting of the Boston Tuberculosis Association held in Boston, February 9, the Boston Tuberculosis Association Auxiliary was organized. Dr. John B. Hall was elected secretary of the society and Dr. Lloyd T. Brown delivered an address on "Tuberculosis in Children."

**Memorial to First Physician.**—It has been announced that a memorial in the form of a maternity ward at the Jordan Hospital, Plymouth, will be erected to Dr. Samuel Fuller, the physician who came with the Pilgrims on the Mayflower, in 1620. All physicians and surgeons and medical societies of the country will be asked to contribute toward the building fund.

**Psychiatric Specialists Hold Meeting.**—At a meeting held February 8, at Boston, Dr. Thomas W. Salmon, medical adviser of the National Committee for Mental Hygiene and professor of psychiatry, Columbia University College of Physicians and Surgeons, New York City; Dr. William A. White, superintendent of St. Elizabeth's Hospital, Washington, D. C.; Dr. Charles Macfie Campbell, director of the Boston Psychopathic Hospital, Medical School of Harvard University, and Dr. Haven Emerson, former commissioner of health, New York City, delivered addresses on the treatment and prevention of mental diseases and feeble-mindedness.

#### MINNESOTA

**Personal.**—Dr. Palmer R. Bowditch, for several years with the Massachusetts State Board of Health, has been appointed superintendent of the Sand Beach Sanatorium, Lake Park. —Dr. Charles R. Christenson was elected president of the West Central Minnesota Medical Society at the annual meeting held recently. —Dr. William E. H. Morse has been elected president of the Rice County Medical Society.

#### MISSISSIPPI

**Roberts Bill Postponed.**—It is reported that the Senate has indefinitely postponed consideration of the Roberts bill, which seeks to repeal the special privilege tax on physicians.

#### NEBRASKA

**Elkhorn Valley Medical Society.**—At the annual meeting of the Elkhorn Valley Medical Society, held recently, Dr. William J. Davies, Fremont, was elected president; Dr. William H. Heine, Hooper, vice president, and Dr. Andrew Harvey, Fremont, secretary-treasurer. Dr. Frederick Tice, Chicago, was the principal speaker at the meeting.

#### NEW HAMPSHIRE

**Personal.**—Dr. Maurice Watson was elected president of the Manchester Board of Health at the annual meeting, held February 9.

**Portsmouth Medical Society.**—At the annual meeting of the society, held February 8, the following officers were elected for the ensuing year: president, Dr. George A. Tredick; treasurer, Dr. Herbert L. Taylor, and secretary, Dr. Laurence R. Hazzard.

#### NEW MEXICO

**County Medical Meeting.**—At the meeting of the Eddy County Medical Society held recently at Carlsbad, Dr. Mallory B. Culpepper, Carlsbad, was elected president and Dr. Chester Russell, Artesia, was elected secretary of the society.

#### NEW YORK

**Personal.**—Dr. Morris J. Davies of Utica has been elected president of the board of managers of the Oneida County Hospital.

**Physician Awarded Carnegie Medal.**—It is reported that Dr. John Albert Kelk, Brooklyn, has been awarded a bronze medal for heroism by the Carnegie Foundation, for attempting to save the life of Carl Dierker, who had fallen into the water from a capsized canoe.

**Course in Infectious Diseases and Public Health.**—The annual course in infectious diseases and public health given by the Albany Medical College in cooperation with the state department of health will begin, March 2, 1922. A program of the course will be mailed to any physician on request.



**Hearing on Antivivisection Bill.**—A hearing on the Betts bill, which would prevent experiments on living dogs, was held in Albany, February 7. This is the same bill that has been before the legislature for ten successive years. Among the advocates of the bill were Drs. Joseph D. Harrigan and Willard Carver of New York City. Drs. Simon Flexner of the Rockefeller Institute, H. B. Williams of Columbia University, and Augustus B. Wadsworth of the the state department of health opposed the bill.

**Plan to Provide Rural Doctors.**—At its annual convention held in Binghamton, February 10, the state grange placed itself on record as favoring the plan of Dr. Milton E. Gregg of Mottville, who proposes that each country community now without a physician erect a home and a small hospital for the use of any physician who will settle there. Dr. Gregg told the grange that wherever a farming community erected a home, the Rockefeller Foundation would send a physician, thus providing medical service for those places in the state now without it. Dr. Gregg further states that the plan had received the approval of the state association of health officers. The state department of health and the Rockefeller Foundation will be asked to join the movement.

#### New York City

**Academy of Medicine Increases Membership.**—At its stated meeting, February 16, the New York Academy of Medicine passed an amendment to its constitution which makes provision for an increase in the resident fellowship from 1,350 to 1,400, and an increase in the nonresident fellowship to 300.

**Planning for New Medical Buildings.**—A committee representing the College of Physicians and Surgeons of Columbia University, consisting of Edward Harkness and William Sloane, trustees of the university, Dr. William Darrach and Dr. Clarence C. Burlingame, recently made a visit to the Medical College of the University of Cincinnati as a part of their work of gathering ideas for the proposed new buildings for the medical school at Columbia.

**Begin Maternity Study.**—The Maternity Center Association, at its recent annual meeting, made public the fact that it had begun a scientific study of the essentials of complete maternity care and that it is opening a new chapter in an effort to reduce the mother and baby death rate in the United States. More than a million pamphlets are being prepared for nationwide distribution. During the past year, 8,211 patients reported to the association for care and 48,729 visits were made to the homes of patients by nurses. Patients made 23,002 visits to the twenty-five nursing centers maintained by the association.

#### NORTH CAROLINA

**Hospital News.**—The Lincoln Hospital, for negro patients, Durham, which was totally destroyed by fire, January 26, at an estimated loss of \$15,000, will be rebuilt at a cost of \$100,000, funds for which have already been raised.

**Personal.**—Dr. Albert S. Root, Raleigh, has been elected president of the Wake County Medical Society.—Dr. Roy B. McKnight has resigned from the staff of the U. S. Public Health Service Hospital, Biltmore, to accept the position of assistant professor of pharmacology at the University of North Carolina School of Medicine, beginning with the September term.—Dr. Jacob Frank Highsmith, Fayetteville, has been appointed assistant surgeon general on the staff of the commander-in-chief of the United Confederate Veterans, with the rank of colonel.—Dr. Clyde K. Hasley, radium and roentgen-ray therapy specialist in the Crowell Clinic, Charlotte, has been appointed associate professor in the University of Michigan Medical School, Ann Arbor.

#### OHIO

**Hanna Lecture.**—The fifth Hanna lecture was delivered, February 24, at the Medical Library, Cleveland, by Prof. Joseph Barcroft, F.R.S., Fellow, Kings College, Cambridge, England, on the subject of "The Physiology of Life at High Altitudes."

**Unlicensed Practitioner Convicted.**—It is reported that Arthur W. Marriott, Christian Science practitioner, was found guilty, January 20, in the municipal court, Cleveland, of practicing medicine without a license and was fined \$100 and costs. In passing judgment, Chief Justice John P. Dempsey stated that he was bound by the ruling of the Supreme Court of Ohio in the Marble case, brought about fourteen years ago. At that time, the supreme court held that under the laws of Ohio "the practice of Christian Science treatment is the practice of medicine."

**Personal.**—Dr. Edmund M. Baehr, professor of psychology at the Medical College of the University of Cincinnati, who has accepted the position of head of the juvenile research bureau of the state welfare department, Columbus, was the guest of honor at a farewell dinner given by the faculty of the university, February 8. Addresses were made by Dr. Frederick C. Hicks, Ph.D., president of the university; Dr. Henry Page, dean of the medical college; Dr. Robert Ingram, and Dr. Charles A. L. Reed, former president of the American Medical Association.—Dr. James M. Lantz, Lancaster, has been appointed attending specialist to the Veterans' Bureau at Columbus, effective February 14. Dr. Lantz, during the late war, served in the M. C., U. S. Army, with the rank of captain. He will have charge of all eye, ear, nose and throat work in central Ohio.—Dr. Charles R. Kayser has been renamed county health officer for Van Wert County.

#### PENNSYLVANIA

**Physician Fined.**—It is reported that Dr. E. C. Watson, Cambridge Springs, who entered plea of nolle contendere, when arrested recently for the violation of the Harrison Narcotic Law, was fined \$100 and costs by Judge Prather at Meadville.

**State Guards Against Smallpox.**—Officers of the state department of health have vaccinated members of the engineering and laboratory forces of the state government because of the appearance of smallpox in New Cumberland, near the residences of several attachés of the engineering branches.

**Hospital News.**—The board of trustees of the Odd Fellows' Orphans' Home, Ben Avon, have purchased a site on the north side and a new home will be erected at a cost of \$250,000.—The Catholic Diocese of Erie will construct an orphans' home at Meadville.—A new county tuberculosis hospital will be erected at Wilkes-Barre.

**State Welfare Conference.**—At the Pennsylvania Welfare Conference held in York, February 10, Dr. S. F. Janney Stoddard of Philadelphia was elected president. Dr. William C. Sandy, chief of the bureau of mental health of the state welfare department, urged the establishment of mental clinics in all hospitals and similar institutions that receive state aid.

**Health Commissioner Retrenchment Program.**—Dr. Edward Martin, commissioner of health, February 10, announced the dismissal of twenty-two clerks from the division of medical inspection of his department as part of the program of reduction of force and expenses determined on last fall. The appropriations available for medical inspection of schools will not permit extended work and only "follow up" supervision will be carried out this year.

**Personal.**—Dr. Charles H. Crampton, Harrisburg, has been appointed lecturer in the genito-urinary division of the state health department. Dr. Crampton, who is vice president of the National Medical Association, an organization of colored physicians, will deliver lectures throughout the state before colored physicians and state bodies.—Dr. Daniel E. Sable has been appointed fire and police surgeon for Pittsburgh to succeed Dr. Philip Kamin, who resigned recently. Dr. Sable held this position from 1913 to 1917, when he served as major in the M. C., U. S. Army.—At a recent meeting of the board of directors of the Williamsport Hospital, Dr. James Gibson Logue was elected to the staff. He will serve on the children's ward and the contagious ward. He will alternate every six months with Dr. Robert K. Rewalt.

**Industrial Physicians and Surgeons of Pennsylvania.**—The fourteenth annual conference of industrial physicians and surgeons of Pennsylvania was held, February 10, in Philadelphia. Dr. Francis D. Patterson, chief of the division of industrial hygiene and engineering of the Pennsylvania department of labor and industry, was chairman. Visiting physicians who gave addresses were: Dr. Hugh S. Cumming, U. S. Public Health Service; Dr. Henry Field Smyth, assistant professor of industrial hygiene, University of Pennsylvania; Dr. Elizabeth B. Bricker, medical director, Pennsylvania department of labor and industry; Dr. Arthur B. Emmons, director of mercantile health work, at the Medical School of Harvard University, Boston, and Dr. S. Dana Hubbard, superintendent of industrial hygiene, New York City department of health.

#### Philadelphia

**Personal.**—The director of the department of public health has announced the appointment of Dr. Joseph C. Doane as medical director and superintendent of the Bureau of Hospitals and of the Philadelphia General Hospital.—Dr. James



M. Anders has been reelected president of the Pennsylvania Tuberculosis Society.—Dr. H. L. Lynah of New York City addressed the section on otology and laryngology of the College of Physicians of Philadelphia, February 15, his subject being "Some Difficult Cases of Chronic Laryngeal Stenosis."

**College of Pharmacy and Science.**—The Founders' Day exercises were held at the Philadelphia College of Pharmacy and Science, February 23, in the College Auditorium, under the presidency of Dr. William C. Braisted. Dr. Judson Daland, professor of medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia, gave an address on "Professional Ethics." Award of honorary membership was announced to the following scientific workers: Dr. E. Poulsen, Christiania, Norway, professor of pharmacology and chairman of the pharmacopeial commission of Norway; Dr. L. Van Itallie, University of Leyden, Holland, chairman of committee of revision of the Dutch Pharmacopeia; Sir Nestor Tirard, London, England, secretary of the pharmacopeial committee of the General Medical Council of Great Britain; Dr. J. Bougault, professor of galenical pharmacy, L'Ecole Supérieure de Pharmacie, Paris, France, and Sir William Glyn Jones, M. P., London, England, secretary of the pharmaceutical society of Great Britain.

#### RHODE ISLAND

**Hospital News.**—At the annual meeting of the board of hospital commissioners, held in January at Providence, Dr. Dennett L. Richardson was reelected superintendent of the institution, and Dr. Harmon P. B. Jordan was elected assistant superintendent.

**County Medical Meeting.**—At the annual meeting of the Washington County Medical Society, held in January, the following officers were elected for 1922: president, Dr. Asa S. Briggs, Ashaway; vice presidents, Drs. John E. Ruisi, Westerly, and Francis E. Burke, Wakefield, and secretary-treasurer, Dr. William A. Hillard, Westerly.

#### SOUTH CAROLINA

**Hospital News.**—The Thompson memorial building of the Roper Hospital, Charleston, has been completed, and will be known as the Riverside Infirmary. The old building will be remodeled and used as a nurses' home.—Dr. Robert C. Bruce has been elected president of the Greenville City Hospital staff for 1922.—Dr. Claude C. Gambrell has been elected to the board of managers of the Abbeville Memorial Hospital, Abbeville.

#### TEXAS

**Physicians Sue Prohibition Director.**—It is reported that Drs. John M. Boyd, Claude V. White, Arthur R. Matthews and A. L. Shackelford have sued the state federal prohibition director for \$10,000 damages alleging that they were subjected to "shameful humiliation and disgrace" in the eyes of both their patients and their fellow physicians on his refusal to renew permits for the plaintiffs to prescribe alcohol for their patients.

**Hospital News.**—The contract has been let and ground will be broken immediately for a new modern sanatorium in Hillsboro. The building will be two stories high and will contain twenty rooms. The hospital is the property of and will be occupied by Dr. James E. Boyd.—Fire recently completely destroyed the Physicians and Surgeons Hospital, Brownwood. The loss is estimated at \$30,000.—The new addition of a baby ward at the Physicians and Surgeons Hospital, Corsicana, has been completed and is ready for occupancy.—A new city-county hospital will be erected at Ranger at a cost of \$60,000.—It is announced that a hospital exclusively for drug addicts will be erected at Fort Worth.—Joint construction of a negro tuberculosis hospital at Woodlawn is planned by the city and county.

#### WASHINGTON

**Personal.**—Dr. Jacob S. Smith, Bellingham, has been appointed member of the city board of health to succeed Dr. Edward W. Stimpson, resigned.

**Physicians' Credit Bureau.**—A credit bureau has been incorporated for \$25,000 at Seattle, comprising fifty physicians and dentists, which will be a rating bureau and bonded collection agency for the profession in that city.

**King County Medical Society.**—At the annual meeting held in January, the following officers were elected for the ensuing

year: president, Dr. Reginald Copeland Plummer; vice president, Dr. Charlton E. Hagyard, and secretary-treasurer, Dr. Donald V. Trueblood.

#### PORTO RICO

**Personal.**—Dr. A. Martínez Alvarez of the editorial staff of the *Bulletin* of the Porto Rico Medical Association has been granted leave of absence for six months.

#### CANADA

**Hospital News.**—A county memorial hospital will be established at Brampton, Ont. At the annual meeting of the board of governors held recently, Dr. C. M. French, Brampton, was elected president.

**Personal.**—Dr. Clarence B. Dickson, Los Angeles, has recently been appointed supreme physician to the Independent Order of Foresters, Canada, to succeed the late Dr. Thomas Millman.—Dr. Robert J. Niddrie, Toronto, has been appointed chairman of the medical advisory council of the Independent Order of Foresters, Canada.

**University News.**—Although the provincial government has expressed disapproval of the financial suggestions contained in the 1921 report from the University of Toronto, it is understood that the university will make another effort to secure the adoption of its principles. Unofficial opinions have been expressed by members of the provincial government that the suggested division of one half of the provincial succession duties between the government and the university is not ideal, because of the instability of the succession duties revenue.—Replying to the Lincoln County Council's expression of disapproval against the raising of the University of Toronto's entrance requirements, Mr. W. J. Dunlop, director of extension at the University of Toronto, explained the reasons for the new standards in a recent interview. Mr. Dunlop explains that there are five different avenues for entering an Ontario university in the first year: (1) with two honor matriculation subjects, in addition to pass matriculation; (2) with pass matriculation, with 75 per cent. in any four papers; (3) with pass matriculation, including 66 per cent. in any six papers; (4) with a second-class teacher's certificate in addition to pass matriculation, and (5) as a student of mature years with pass matriculation only. He pointed out that the purpose actuating this raising of the standard was misconstrued, because it was misunderstood. Faced with the dilemma which the less earnest type of student produces, faced also with the fact that scores of students fail in each year in their examinations, the university was driven to the necessity to raising the standard; but this was done solely to bar the student who was too immature, or whose previous education was too meager to enable him to take advantage of the work which the university has to offer him.

#### GENERAL

**General Education Board.**—It has been announced by the board that appropriations of \$18,210,353 for colleges and universities, \$12,029,513 for medical schools and \$646,000 for negro education were made during the fiscal year. The total appropriations of the board from its foundation by John D. Rockefeller in 1902 to June 30, 1921, have amounted to \$89,017,872. Mr. Rockefeller, it is stated, has released the board from any obligation to hold any of his gifts in perpetuity.

**Death Rate from Tuberculosis in Europe and the United States.**—Recent statistics taken before, during and after the war, of the death rate from tuberculosis, are as follows:

	Before the War 1913	During the War 1917	After the War 1920
New York .....	171	164	109
London .....	130	171	106
Paris .....	328	295	227
Berlin .....	156	292	148
Vienna .....	302	425	405
Warsaw .....	306	840	338
Lodz .....	...	1,164	...
Cracow .....	487	908	...
Lvov .....	480	665	...
England and Wales.....	99	134	89
U. S. registration area....	128	129	100

**Dinner in Honor of President Hubert Work.**—On February 16 Dr. and Mrs. Charles Richardson, Washington, D. C., gave a dinner in honor of Dr. Hubert Work, President of the American Medical Association, and First Assistant Post-



master General, at which the Vice President, Calvin Coolidge, and the British ambassador, Sir Auckland Geddes, were also guests of honor. The British ambassador spoke, bringing greetings from the British Medical Association. Among other guests were Dr. Alexander Lambert, Dr. George E. de Schweinitz, President-Elect of the American Medical Association, Surgeon-Generals Ireland, Stitt and Cumming, Brigadier Generals Noble and Sawyer, Dr. T. H. Ball, senator from Delaware, O. H. Shoup, governor of Colorado, Senator L. C. Phipps, Dr. George H. Simmons, Bishop Alfred Harding and Representatives Samuel Winslow and Wallace White.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

Northwestern General Hospital, Philadelphia, \$25,000; Home for Incurables, Philadelphia, \$5,000; American Oncologic Hospital, \$10,000, one half of which is to endow a bed as a memorial to his wife, Kate G. Schell; Fred Douglass Memorial Hospital, \$5,000; Germantown Dispensary and Hospital, \$1,000; Gyneccean Hospital, \$1,000; Hahnemann Medical College and Hospital, \$5,000; Howard Hospital, \$10,000; Jewish Hospital Association of Philadelphia, \$5,000; Kensington Hospital for Women, \$5,000; Methodist Hospital, \$10,000; Philadelphia Orthopaedic Hospital and Infirmary, \$2,500; Philadelphia Polyclinic for Graduates in Medicine, \$1,000; Rush Hospital for Consumptives, \$1,000; Southern Dispensary, \$500; Women's Southern Homeopathic Hospital, \$5,000; Woman's Medical College of Philadelphia, \$2,500; Maternity Hospital, \$1,000; Pennsylvania Hospital, \$5,000; Woman's Hospital, \$2,500, and the Woman's Homeopathic Association, \$2,500, by the will of Harry D. Schell.

Hahnemann Hospital, Philadelphia, \$1,000, in memory of his wife, by the will of James M. Stokes.

The Good Samaritan and St. Joseph's Hospital, Lexington, Ky., \$10,000 each, by the will of Edmund J. Curley.

Toronto General Hospital, Toronto, Canada, and the Hospital for Sick Children, Toronto, about \$94,000 each; Victoria University, Toronto, \$100,000, to establish scholarships, by the will of Dr. M. H. Aikins of Burnhamthorpe.

Episcopal Hospital, Philadelphia, \$10,000, by the will of Ann Warder Pearsall.

Vineland Hospital Association, New Jersey, a site valued at \$30,000 and a hospital costing about \$200,000 will be donated by Leverett Newcombe of Vineland.

The Home for Aged Women, and the Eastern Maine General Hospital, Bangor, each \$500, in memory of her mother, Augusta H. Bragg, by the will of Florence E. Buzzell of Bangor.

Foundation Fund of the Tri-State District Medical Society of Illinois, Iowa and Wisconsin, \$317, by the Milwaukee Medical Society.

Maryland General Hospital, Baltimore, \$160,000, by subscriptions, for improvements at that institution.

## LATIN AMERICA

**Smallpox Epidemic in Costa Rica.**—A commission of Red Cross workers has been sent from San José to the outlying districts, where there is an epidemic of smallpox, to organize a sanitation campaign to combat the disease.

## FOREIGN

**Radium for Paris Hospitals.**—The city of Paris has authorized the expenditure of 2,500,000 francs (\$183,750, at the present rate of exchange) for the purchase of radium, to be used in the public hospitals for the treatment of cancer.

**Personal.**—Dr. Christen Lundsgaard, Copenhagen, has arrived in the United States for two years' work on cardiac and pulmonary diseases at the Rockefeller Institute.—Dr. R. Holguín of Puerto Colombia, has left New York to begin practice at Colon, Canal Zone.

**First Chinese Woman Physician in Hong Kong.**—Dr. Hoashoo, M.B., Ch.B., graduate of Edinburgh University, is the first Chinese woman physician to set up in practice at Hong Kong. During the war, Dr. Hoashoo served in hospitals at Bristol, England, and at Edinburgh.

**Public Health Association of Australasia.**—At the first annual meeting of the Public Health Association of Australasia, the issue of an official public journal was announced, which will be known as the *Bulletin of the Public Health Association*. The first *Bulletin* was issued in January.

**American Physicians in Moscow.**—It has been announced by the American Relief Administration, New York City, that Dr. Agha B. Musa, Webster, N. Y., and Dr. J. Rivers Child, Lynchburg, Va., two administration relief workers, who are in the famine districts of Russia, are recovering from typhus contracted while carrying on their work.

**Alastrim in Jamaica.**—It is reported that the epidemic of alastrim which started in Kingston, Jamaica, in May, 1920, has spread all over the island, over 2,300 cases having been reported during ten months. This disease resembles a mild form of smallpox and originated in Brazil. It has been

reported as occurring in Cuba, Australia and Canada, during the last ten years.

**International Congress on Mental Hygiene.**—The *Informateur des Aliénistes, etc.*, brings the details of the First International Congress on Mental Hygiene, to convene at Paris, May 23-28, 1922. It has been organized by the young and active Ligue de Prophylaxie et d'Hygiène Mentales, and appeals to physicians, educators, manufacturers, and sociologists of all countries. The address of the secretary is Dr. Génil-Perrin, 99 Avenue de la Bourdonnais, Paris. The fee is 25 francs for regular members and 10 francs for others.

**Tribute to Professor Netter.**—A gold medal was recently presented to Prof. Arnold Netter on the occasion of his retirement from hospital service. He has been *chef de service* at the Trousseau for twenty-five years. The medal presents his portrait on one side, and on the reverse shows him doing lumbar puncture on a child. Wright, the British biologist, brought greetings from across the channel. Netter's publications have been numerous on pneumococcus and paratyphoid infections, poliomyelitis, meningitis and epidemic encephalitis.

**English Physicians to Visit Gorgas Institute.**—It has been announced by Sir Patrick Manson, member of the advisory committee of the Gorgas Memorial movement, that a number of physicians from the London School of Tropical Medicine will attend courses at the proposed Gorgas Memorial Institute of Tropical and Preventive Medicine at Panama. A cablegram received, January 25, at the Panama legation at Washington, D. C., from President Belisario Porras, president of the Republic of Panama, announces that ground will be broken for the Gorgas Memorial Institute early in the spring on the site contributed by the Panaman government. Dr. Richard P. Strong, dean of the school of tropical medicine, Harvard University, Boston, who has accepted the post of scientific director of the institute, will sail, April 1, for Panama, where he will assume charge of the scientific work in connection with the research work.

**Compulsory Insurance Against Sickness in France.**—While Alsace and Lorraine formed part of the German empire, they were included of course in the universal social insurance from the very first. Now that they have been returned to France, the country has the spectacle of a thoroughly organized compulsory sickness and old age insurance system in these two departments while nothing of the kind exists elsewhere in France. A bill has been presented in parliament to provide for extension of the system throughout the whole country, and the profession is very much exercised thereat. Our exchanges bring numerous protests from leading physicians against the adoption of the bill. Legrand of Mulhouse in Alsace warns of the perils for the profession in a law modeled too closely on the German system, and tells of the overwork of the insurance physician who, he says, becomes a sort of *spécialiste de l'à peu près*, and the insured go to some other physician to be *examinés sérieusement*. He adds that the physicians who have moved to Alsace or Lorraine from other parts of France are almost unanimous in their condemnation of the German system as they see its workings.

## Deaths in Other Countries

Dr. Alfred Ashby, medical officer of health of Reading, England, died, January 7.—Dr. César Cantu Lara, director of the civil hospital, Monterey, Mexico, died recently, from pneumonia.—Dr. W. Beattie Smith, formerly clinical lecturer on mental diseases, University of Melbourne, Australia.—Dr. Sydney Taylor Champtaloup, professor of bacteriology, University of Otago, Dunedin, New Zealand, December 11, aged 41.—Dr. A. Monprofit, a prominent French surgeon, with a chair at the University of Angers.—Dr. Keating-Hart, of fulguration fame, died recently from influenza, aged 52. He is said to have wedded the long electric spark to the high frequency current, and he led the way in thermopenetration and diathermia. He practiced at Marseilles but moved to Paris in 1907.—Dr. H. J. M. Schoo of Amsterdam, an authority on malaria and pathologic anatomy, aged 49.—Dr. N. P. Ernst of Copenhagen, vice president of the Danish Cancer Research Society, aged 54.—Dr. R. Klemensiewicz, formerly professor of pathology at the University of Graz, aged 73.

## CORRECTION

**Distinguished Service Medal.**—In THE JOURNAL, February 11, page 440, it is stated that Dr. Hunter H. McGuire received a distinguished service medal, January 12. The item should have stated that Dr. Stuart McGuire received a distinguished service medal.



## Government Services

### Surplus Medical Supplies for Russian Relief

Surplus medicines, medical, surgical and hospital supplies held by the War, Navy and Treasury departments and the Shipping Board will be made available for the Russian relief under an executive order issued by President Harding this week. The order is in accordance with the resolution recently adopted by Congress. The supplies will be delivered to the American Relief Administration within four months from the date Congress passed its resolution, Jan. 20, 1922, and will not exceed \$4,000,000 in original cost to the government. The relief association is authorized to make the distribution of the materials through its own agencies or those of other relief organizations operating in Russia which may be found in a better position to distribute the supplies to centralized localities.

### Army Medical Reserve Corps Assignments

The Medical Reserve Corps officers of the territorial assignment group are being assigned to the duties expected of them in time of war. These officers have been selected after careful consideration of their records of service and their professional and military qualifications and preferences. Notices of assignment are made by corps area or department commanders and indicate the organizational scheme of the employment of officers of the reserve corps and should not be confused with orders for duty. No orders for active duty can be issued at the present time except for training purposes and these are voluntary. Furthermore, under the law, even were appropriation of funds made by Congress, officers of the reserve corps could not be called to active duty for more than fifteen days a year, without their consent. No such plan of compulsory duty is being thought of. The only intention is to afford practical training for those who want it.

Throughout the country, twenty-seven divisions, three in each corps area, as well as many corps and auxiliary units, are being organized and officered entirely by reserve corps officers. Medical officers of the regular army are being detailed as instructors in the proportion of one for each division. These troops will constitute three field armies and require more than 6,500 medical officers; and many more will be required for the auxiliary and special units also being organized by corps area commanders.

*The Branch Assignment Group.*—This group is composed of officers selected by the Surgeon-General for assignment to organizations to be formed by the War Department and which do not function under territorial commanders. Among these are the general, evacuation, surgical and convalescent hospitals, the various laboratories pertaining to the armies, general hospitals and hospital centers, and of the air service, supply depots, training centers, hospital trains, and air units, as well as regiments, brigades and other tactical units pertaining to the field armies, the general headquarters reserve, the communication zone and zone of the interior. It will be seen that many of these activities pertain to the service at the front and are not confined to the home territory nor to what was formerly known as the S. O. S. To this group are also assigned those medical officers best qualified as professional and administrative consultants and advisers in connection with the organization of the Surgeon-General's office and other War Department offices and activities.

*General Assignment Group.*—This is a relatively small group of reserve officers retained by the Secretary of War for assignment in time of war. It comprises officers selected at large for general staff duty, general officers, members of Congress, and certain other reserve officers in public life.

*Organization of Hospitals and Other Units from the Branch Group.*—The classification and grouping of all officers enrolled in the officers' reserve corps have been completed and each officer has been notified of his grouping. The Surgeon-General will soon start the organization of the units to be officered by branch assignment officers. The plans of the War Department call for a very comprehensive scheme of national defense. Many of these units must be organized and will absorb all the officers now enrolled and require many more. The base hospitals under the old organization now become the general hospitals. It is hoped that the identity of the Red Cross and other base hospitals of the World War may be preserved by the use of the same personnel and designation as to numbers. In the organization of the many

and varied units, there will be a place for every medical officer of general or special qualifications. The commanding officers and staffs of these hospitals must be selected, and it is essential that representative medical men be enrolled before these hospitals are officered.

The regulations governing the officers' reserve corps are now definitely defined in Special Regulations 43. These govern all matters relating to the appointment, assignment to duty, training and promotion.

### Legislation on New Hospital Construction

Chairman Langley of the House committee on public buildings and grounds has asked for a special rule providing for the immediate consideration by the House of Representatives of his bill appropriating \$16,000,000 for the erection of new hospitals and the extension of present hospitals owned by the government. Recently, the federal board of hospitalization, with the approval of President Harding, made some recommendations regarding the measure. One of them favored elimination of the appropriation of \$500,000 for the enlarging of the Mount Alto Hospital in Washington. Another provided that the construction work should be under the supervision of the director of the U. S. Veterans' Bureau, instead of under the direction of the supervising architect of the Treasury Department. The measure is expected to receive prompt consideration in the House and Senate.

### New Tuberculosis Sanatorium Dedicated

Official opening of the new tuberculosis sanatorium at Dawson Springs, which cost the government \$2,300,000, took place at Dawson Springs, Ky., on February 22. The institution will be under the direct control of the U. S. Veterans' Bureau instead of the U. S. Public Health Service. No surgeon has yet been designated to take command of the new hospital for disabled veterans and it will be several weeks before patients are installed. The U. S. Public Health Service, however, is making a thorough inspection of the equipment and has taken over the work of installing roentgen-ray equipment and setting up a laboratory. This work is under the direction of Earle T. Bailey of the Public Health Service. Representative David H. Kincheloe of Kentucky, who originally introduced the bill in Congress for the erection of the Dawson Springs sanatorium and who successfully pushed it through the national legislative body, will participate in the ceremonies of the formal inauguration of the Dawson Springs sanatorium that takes place this week. Other public officials will also be present.

### Psychiatric Conference Ends

Psychiatric specialists, who met in conference in Washington, D. C., at the invitation of the U. S. Veterans' Bureau to consider the care and treatment of mentally disabled war veterans, have completed their sessions. The result of the meetings was a detailed recommendation for additional government hospital construction in various parts of the country. Twelve thousand additional beds are proposed for the care of mental patients. The recommendations are as follows:

- (a) Location of a hospital in the western part of Massachusetts containing 500 beds to receive patients from Vermont, New Hampshire and Connecticut to replace the hospital now in use at East Norfolk, Mass.
- (b) Use of hospital at Fort Porter, Buffalo, for mental patients.
- (c) Increase in capacity of hospital at Perryville, Md.
- (d) Increase in capacity of hospital at Gulfport, Miss.
- (e) New institution of 500 beds to be increased later to 1,000 beds in district comprising Ohio, Indiana and Kentucky.
- (f) Disapproval of use of the hospital at Maywood, Illinois, and construction of new hospital of 1,000 beds to be increased later to 1,500 beds for district comprising Michigan, Illinois and Wisconsin.
- (g) New hospital of 500 beds to be increased to 1,000 beds for district comprising Iowa, Missouri, Kansas and Nebraska, to replace the present institution at Knoxville, Iowa.
- (h) New hospital of 500 beds for district comprising Minnesota, North Dakota, South Dakota and Montana.
- (i) New hospital of 250 beds to be increased to 500 beds for district comprising Oregon, Idaho and Washington.
- (j) Increase in capacity of hospital now being erected at Fort Logan H. Roots, Little Rock, Arkansas.

Director Forbes of the U. S. Veterans' Bureau declared that the recommendations of the psychiatric specialists were being considered by the bureau and further action awaited the action of Congress on the \$16,000,000 hospitalization appropriation now before that body.



## Foreign Letters

### PARIS

(From Our Regular Correspondent)

Jan. 27, 1922.

#### Insanity, Crime and Alcohol

Under this significant title, Dr. Legrain, who is well known for his works on alcoholism, and more particularly for his monograph "Alcoholism and Heredity," published in the last number of the *Annales médico-psychologiques* an interesting study which deserves careful consideration at the hands of opponents of prohibition. Is alcohol per se the cause of insanity, and if so, under what conditions? Insanity is frequent among alcoholics, and the hospitals for the insane in every land are full of drinkers of alcoholic beverages. It is, therefore, an incontrovertible fact that there is a close connection between alcohol and insanity, as there is between alcohol and crime. Many persons would be able to ward off insanity if they did not come in contact with alcohol, which appears to be the spark in the powder mill, the precipitator, as it were, of the delirium. It seems as if a brain cell prepared and sensitized in some manner is necessary as a secondary causative agent. That is evidently what happens under the conditions in which a superacute state of emotivity develops, as could be noted during the recent war. An extraordinary number of persons, women as well as men, but soldiers more particularly, were overwhelmed by insanity which they would have been able to resist in times of peace. What tended to precipitate the development of insanity was an abnormal consumption of wine and spirituous liquor. How many misdemeanors and crimes, how many absurd and dangerous maneuvers, extravagancies of all kinds, on the part of officers and privates, when under the influence of alcohol and thus rendered more likely to feel and to react to the unusual impressions of war, were noted on every hand. The observations that Legrain himself made in great number before the war councils (more than 500 examinations of psychopathic cases) have furnished ample evidence that, if alcohol had not exerted its demoralizing effects, many trials in which insanity played a part would never have been held.

When we contemplate the wave of degeneracy that threatens to engulf us—the ultimate product of hereditary alcoholism which finds its expression in a progressive decrease of psychic resistance—we understand how essential it is to take account of all the agents that are capable of changing latent insanity to an active state. Alcohol, especially, should be considered in this connection for the reason that the nations of the earth are in a position to destroy the power of this reagent whenever they shall decide to do so, on the same basis that they protect themselves against dynamite and other explosives.

Having been for twenty years at the head of a service in the hospital for the insane at Ville-Evrard, where there was a vast number of cases of toxicomania, Legrain had an opportunity of treating more than 8,000 alcoholics, in whom he was able to demonstrate the significance of sensory disorders, which tend to affect markedly or even to exert a controlling influence over the personality of the individual. The change in the personality of the habitual drinker is so great at times that he lives a secondary life, as it were, which is associated but rarely with the realities of his primary existence. This is a clinical point that is not so well known, particularly among medicolegal experts. Many habitual drinkers suffer from delusions in regard to their state of lucidity. In reality, they are dreaming though awake; they continue to dream much as they did while they were intoxicated, and their lives are controlled by the wildest vagaries and fancies, without any very definite attempt on their part to harmonize these

fancies with the other facts of their lives. For some time past, Legrain has called attention to what he terms "folies à éclipse" (a type of temporary insanity), which are, as a rule, visitations affecting those suffering from a delirious intoxication. These ephemeral but repeated attacks of insanity lead finally to the development of a special type of imaginative life, with fantastic, dramatic and melancholy tendencies and especially fertile manifestations. The existence of the drinker has become nothing but a continual deception. The older he grows, the more he reduces his life to a series of automatic acts; that is, he gives up his power of logical control more and more, and yields to the influences of phantasmagoria and the promptings of spontaneity, bereft of the control of reason. Abdicating, step by step, all logical control of himself, the alcoholic moves steadily onward toward a special type of dementia, characterized by the most flagrant moral imbecility, which contrasts very strongly with the most deceptive appearances. This mental make-up is not to be regarded merely as a clinical curiosity. It entails consequences fraught with danger for the family and for society in general, the automatism often taking such forms as lead up to misdemeanors and crime. Nothing in this field is of more striking interest than the categories in which insanity and crime alternate and intermingle, thus giving rise to a natural doubt in the mind as to whether a given subject is in reality a criminal or whether he is insane. Just as the habitual drinker displays a tendency to fall back, if the occasion arises, into his old delirium and into the same stage he was in when he came out of it, he has likewise a tendency to commit the same misdemeanors; in other words, there are "*délits à éclipse et récidivants*" (delinquencies which, while suppressed for the time being, recidivate) just as there are "*folies à éclipse et récidivantes*" (folie or insanity that appears, is suppressed, but continually reappears).

From these interesting facts, many conclusions might be drawn, but Legrain emphasizes only one, which he puts in the form of an exclamatory question. He asks: "Against such a harmful agent as alcohol will there ever be prohibition severe enough? The United States has given the response, and the hospitals for the insane are becoming empty."

#### Employment of Medical Terms Before Patients

Dr. A. Schwartz, associate professor of the Faculté de médecine of Paris and surgeon to the hospitals, writing in the *Paris médical*, calls attention to a certain danger that lies in the use of medical terminology in the presence of patients. Practitioners have, without doubt, very commonly taken account of this danger and have always endeavored, in order to save their patients useless anxiety, to conceal their diagnosis by the use of terms little known to the general public. For example, in the medical services of our hospitals, the words "tuberculosis" and "tuberculous" are commonly replaced by "bacillosis" and "bacillary," or by "*phimatose*" and "*phimateux*." In like manner, in the surgical services, the word "cancer" is never used before the patients, but "neoplasm" or "epithelioma" is employed instead. At the present time, however, such precautions are no longer adequate, for, owing to the increasing number of medical articles of a popular nature appearing in the daily press, the general public is much better informed on medical subjects than formerly. Nowadays, words that might appear to be absolutely safe may prove to be eminently dangerous. For example, take the word "radium." Quite commonly, in the presence of a cancer, especially if it is inoperable, we propose, before the patient, the use of radium. Owing to the education on the subject that the public has received through the press, the patient concludes that he has a cancer. In illustration of the point, Schwartz reports the following case:



A patient had undergone an abdominal total hysterectomy for cancer of the cervix. She was happy over the idea of being on the road to recovery from an affection which she knew was of a serious nature but the exact character of which had not been told her. As the operator had found extensive lesions and judged that all the pathologic tissue had not been removed, he advised, within hearing of the patient, the use of radium. Immediately the patient betrayed signs of extreme fright and so far all efforts to relieve her of her anxiety had been futile. Since such cases are far from being rare, Schwartz recommends that, whenever under such circumstances it is necessary to refer to the use of radium, we employ some form of camouflage, referring, for instance, to certain physical or chemical treatment. He holds that, generally speaking, it is the duty of the physician to withhold from a patient with a grave lesion an exact knowledge of the nature of his case, since such knowledge gives rise to useless fear and anxiety.

#### Frequency and Causes of Stillbirths

At a recent meeting of the Congrès annuel d'hygiène, held at the Pasteur Institute, Dr. Couvelaire, professor of clinical obstetrics in the Faculté de médecine of Paris, presented an interesting report on the movement to inquire into the causes of stillbirths and to discover means of lessening their frequency. In France, fetuses are not classed under stillbirths, even though born dead, unless they had entered on the seventh month of the gestatory period. The following three classes are recorded under the same head: (1) fetuses that die during gestation; (2) fetuses that die during parturition, and (3) children born alive but who die within three days after birth, the time within which, according to law, births must be reported to the authorities. Official statistics take no account whatever of fetuses expelled before the end of the sixth month of gestation, many of which cases are due to criminal maneuvers. The published statistics, therefore, do not allow us to show in figures the full social importance of the problem of stillbirths. Nevertheless, we give herewith the statistics on stillbirths for the year 1920, as compiled by the French bureau.

#### FRANCE

Births of children declared as living.....	834,411
Births of children declared as stillborn.....	38,641
Proportion of stillbirths.....	4.6 per cent.

#### PARIS

Births of children declared as living.....	55,813
Births of children declared as stillborn.....	4,024
Proportion of stillbirths.....	7.2 per cent.

In his endeavors to ascertain the causes of stillbirths, Couvelaire bases his conclusions more particularly on the documents collected at the Baudelocque Clinic by Professor Pinard from 1890 to 1914, and since then by himself. As regards fetal mortality during the period of gestation, the records of the clinic show, during the period from 1890 to 1919, that out of 57,642 births there were 1,769 stillbirths that occurred before the beginning of parturition, the proportion being slightly in excess of 3 per cent. A careful investigation of the clinical records of these fetal deaths has made it possible to connect them as follows: 653 cases with syphilis, 346 cases with syndromes of toxemia of pregnancy and 175 cases with various causes, among which there were six cases of saturnism due to occupational intoxication. In 572 cases, the cause or causes could not be determined. But, as regards the latter category, a large number of cases were doubtless referable to latent syphilis in the parents or their ancestors. Since Couvelaire introduced in his service the custom of giving the Bordet-Wassermann test to all prospective mothers, the proportion of fetal deaths traceable to syphilis has risen to nearly 50 per cent. of the total number of cases.

Whether the primary cause is syphilis or the toxemia of pregnancy, it is the lack of systematic treatment that is the cause of the death of more than half of the fetuses. For example, of eighty-four cases of fetal death due to the toxemia of pregnancy, as recorded in the Baudelocque Clinic from 1909 to 1919, only three cases had received proper treatment; thirty cases had been treated in an irregular and insufficient manner, and fifty-one had received no treatment at all. Of 233 cases of fetal death due to syphilis, three had been treated for from four to six months, twenty-nine had been treated in very irregular fashion, twenty-eight had not been treated at all, and 173 cases were due to old syphilitic infections that had not been treated because they had not been recognized. This lack of systematic treatment explains why, in spite of progress in therapeutics, the figures for fetal mortality recorded in the maternity hospitals have not varied materially since the beginning of the nineteenth century. The statistics established for the Maternité de Paris by the famed Madame La Chapelle give a proportion of 3.5 per cent. of fetal deaths, which is only slightly higher than the 3 per cent. record at the present time.

The mortality of the new-born during the first few days after birth is also rather high. In 1920, at the Baudelocque Clinic, of 3,021 children born alive, 103 died before the tenth day; namely, forty-nine the first day, twenty-two the second and third days, and thirty-two from the fourth to the tenth day. Of these 103 deaths among the new-born, eighty-four concerned children prematurely born. Premature births are usually determined by the bad physical condition of the mother, who is obliged to work in spite of the advanced stage of pregnancy, and often under circumstances that no breeder of stock would permit to exist. But aside from the physical condition of the mother, syphilis is also a causative factor in premature births. Of the eighty-four cases in which children prematurely born died before the tenth day, seventeen cases were referable to syphilis in the parents, or one case out of five.

#### Personal

At a recent meeting of the council of the Faculté de médecine of Paris, Dr. Henri Claude, associate professor and physician to the Saint-Antoine Hospital, was appointed to the chair of clinical mental diseases and diseases of the brain, to succeed Professor Dupré, deceased.

#### LONDON

(From Our Regular Correspondent)

Jan. 30, 1922.

#### Birth Control

An address delivered to the church congress by a well known physician, Lord Dawson of Penn, on "Love-Marriage-Birth Control," has aroused great interest and has been reprinted in the form of a pamphlet. Lord Dawson traverses a recent pronouncement of the Lambeth (church) Conference which runs: "In opposition to the teaching which under the name of science and religion encourages married people in the deliberate cultivation of sexual union as an end in itself, we steadfastly uphold what must always be regarded as the governing considerations of Christian marriage. One is the primary purpose for which marriage exists—namely, the continuation of the race through the gift and heritage of children; the other is the paramount importance in married life of deliberate and thoughtful self-control." This means, says Lord Dawson, that sexual union as an end in itself (though not the only end) is to be condemned and that sexual intercourse should rightly take place only for the purpose of procreation. As the large majority of conceptions take place immediately after or before menstruation, a large family



could easily result from a few sexual unions. For the rest, the couple should be celibate. But this is contrary to the facts of life. Union constantly takes place as the physical expression of love without thought or intention of procreation. Sex love, apart from parenthood, Lord Dawson holds, is an essential part of the health and happiness of marriage and is to be prized for its own sake.

Turning to birth control, he believes it is here to stay. Despite the condemnation of the church, it has been practiced in France for well over half a century and is extending in other catholic countries. If the Roman church with its authority and discipline cannot check birth control, is it likely that Protestant churches can? The reasons which lead parents to limit their offspring are sometimes selfish, but more often honorable and cogent. The desire of those of limited incomes to rear children well equipped for life's struggle is a forcible motive. Absence of birth control means late marriages and irregular unions, with all their baleful consequences. Some say that the only justifiable birth control is abstention. Such abstention would be either ineffective, or, if effective, harmful to health. To limit the family to, say, four children during the child bearing period would impose abstention equivalent to celibacy for long periods. Artificial control is said to be "unnatural and immoral." This word "unnatural," puzzles Lord Dawson. Civilization involves the chaining of natural forces and their conversion to man's will and uses. When anesthetics were first used in childbirth, many worthy and religious people said that the practice was unnatural and wicked, became God meant woman to suffer the pains of childbirth. Now we all admit that it is right to control the process and save the mother as much pain as possible. It is no more unnatural, says Lord Dawson, to control conception. The question is whether the artificial control is for the good of the individual and the community. The answer depends on the purpose for which contraceptive measures are used. If to render unions childless or inadequately fruitful, they are harmful. It is justifiable to limit the number of children and spread out their arrival so as to insure their true interests and those of the home. But excessive control has evils. There is, first, the individual to be considered: every woman is better in mind and body for child bearing. Maternity gives her her most beautiful attributes. The woman with one child and all child bearing finished before the age of 30 does not compare at 40 in preservation of youth and beauty with the woman of the same age who has had, say, four children at proper intervals. On the other hand, baby after baby every year or eighteen months wears away, and often exhausts a woman's strength. The inference is that the use of birth control is good, its abuse bad. Next, as to children: the single child has overanxious parents, is spoilt, and has no children to play with at home. It may die when it is too late to produce another. The loss of the only son was the greatest tragedy of the war.

#### Boycott of the Appointment of Health Officers of the City of Manchester

The Manchester city council is advertising for a health officer at a salary of \$7,500. The British Medical Association has declined to allow the advertisement to be inserted in its journal, and the *Lancet* has taken the same course, on the ground that the salary is inadequate for what is one of the most important health posts in the country. By way of comparison, it is stated that the town clerk of the city receives on appointment \$11,250 a year and the city engineer is paid \$15,000. It is a common practice for the medical journals mentioned to refuse to insert advertisements of medical posts when they consider the salary offered inadequate, but they do not appear to have taken this course in similar circumstances. It was, previously, a matter of standardizing the salaries for

various classes of appointments: here, it is a matter of condemning a large salary not because it does not conform to a prescribed scale but because the post is so important.

#### Reform of the Lunacy Laws' Administration

A conference on lunacy administration, attended by practically all the medical superintendents of mental hospitals (as they prefer to call them now, instead of "lunatic asylums"), has been held. The following conclusions were unanimously adopted: (1) Early treatment without certification should be legalized. (2) By early treatment many cases would be prevented from suffering permanently from mental breakdown. (3) Such early treatment should be given only in institutions or homes approved for the purpose by the government. The conference did not desire that a hard and fast line should be laid down as to where early treatment should be provided. Sometimes it might be best given at a general hospital; sometimes at a public mental hospital; and sometimes at an approved home. The conference also agreed that the law should be altered so as to allow the reception of voluntary boarders in public mental hospitals.

#### A Naval Surgeon's Tragic Mistake

During gunnery practice in the Forth, a lieutenant asked the ship surgeon for a tonic. The surgeon intended to give a small dose of strychnin in tincture form, but being unable to lay his hands on the particular bottle he wanted, he decided to give the hydrochlorid, a preparation which he was not in the habit of using. He therefore looked up the dose in his textbook. He misread drachms for minims and gave an overdose with fatal result. Cases of poisoning from a mistake in dispensing are reported from time to time, but no case from the misreading of a dose in a book appears to have occurred.

#### BELGIUM

(From Our Regular Correspondent)

Jan. 13, 1922.

#### Governmental Control of Antisyphilitic Arsenicals

With a view to bringing about a standardization of arsenicals by means of governmental control, Dr. Rulot, chief physician of the ministry of the interior, has submitted to the Société Belge de dermatosyphiligraphie the preliminary draft of a bill which seems to be rendered necessary by the fact that arsenical products are being put on the market from the use of which regrettable accidents are arising. From analyses made in the state laboratories, it appears that certain of these products do not contain the proportions of active substances that are claimed for them. Dr. Rulot proposes:

Antisyphilitic remedies that the physicians who are taking part in the campaign undertaken by the government to prevent the spread of venereal diseases prescribe gratuitously must stand a chemical, biologic and clinical test. The chemical and biologic tests will be carried out by a state laboratory. The results of the clinical tests will be considered and passed on by the Société Belge de dermatologie et de syphiligraphie.

The society admits that this action is well taken but suggests that it be embodied in the report demanded of the society by the ministry of the interior and of hygiene with respect to the medicaments that the state should adopt for the antiveneral campaign.

#### Syphilis Resistant to Arsenicals

A number of peculiar cases of syphilis absolutely rebellious to neo-arsphenamin treatment have been reported by Dr. de Grave to the Société Belge de dermatologie et de syphiligraphie. The thirteen cases presented much the same characteristics, including the fact that they did not seem to be influenced by neo-arsphenamin. Both primary and secondary lesions are resistant to frequent injections and to gradually increasing doses. Sometimes the lesions would dis-



appear for a time, but they soon reappeared. The positive seroreaction did not yield to the arsenical, and the spirochetes remained numerous. In some of the cases, mercury brought about considerable improvement, while in others it was of no effect. In all cases, silver arsphenamin caused the lesions to disappear and effected an improvement in the seroreaction. In one case, a patient communicated the disease to a woman, in whom the syphilis showed the same peculiar characteristics. There seem, therefore, to be cases of syphilis that cannot be cured by the use of the usual arsenicals. These lesions are of the secondary type, being accompanied by slight reactions in the tissues, or they may be of the secondotertiary type, with marked lesions in the tissues. The former lesions yield to mercury and the latter to silver arsphenamin. It was noteworthy that in these patients the allergic state is raised. They were subjected at first to treatment with too mild doses or the intervals between the doses were too long. One is almost tempted to assume that under the influence of such treatment the spirochetes became mithridatized and that the specific used against them at first had no effect whatever. Under such conditions, other specifics should be employed; but there will be cases in which the resistance of the infection will manifest itself toward many different specifics or even all. Such cases are of the same category as those published by Strickler, Munson and Sidlick (Chicago).

#### Occupational Intoxication with Arsphenamin

Like many other toxic substances, the arsphenamins may give rise to occupational intoxication. Dr. Slosse recently presented a communication on the subject to the Academy of Medicine. Physicians and nurses connected with services where many intravenous injections of arsphenamin are given were found to present various morbid manifestations: facial pallor, anemia, indigestion, icterus, etc. In such subjects, Slosse demonstrated (1) by the Srzyzowsky modification of the Marsh method, the presence of abnormal quantities of arsenic in the blood, the hair and the nails; (2) by the method of Folin and Flanders, an increase in the quantity of hippuric acid in the urine; (3) by the Tollens method, an increase in the quantity of glycuronic acid in the urine. The absorption of arsphenamin by persons who prepare or administer this therapeutic agent seems to take place principally through the skin.

#### Prospective Reforms in Medical Education

From time to time, I have referred to the important movement to introduce certain modifications in the medical curriculum and to the action that Belgium is taking in the matter. I wish, further, to mention the conclusions that the Royal Academy of Belgium has reached concerning the character and scope of the secondary instruction by which pupils are prepared for admission to the university medical course. 1. Humanistic studies have for their prime purpose the development of intelligence, and for their secondary purpose the inculcation of a body of knowledge which shall be at once varied and fundamental and such as every one should possess. Ample provision should be made, at the same time, for the physical development of young people. 2. Secondary schools should see to it that pupils are equipped with the main facts in the history of ancient (Greeks, Romans, etc.) and modern civilizations. The history of art should receive its share of attention, while the history of the sciences, belles-lettres and the arts in general must be carefully studied. 3. During the course of secondary studies, all pupils should receive an objective and practical instruction in the principles of the natural sciences; more particularly, physics and chemistry. 4. All secondary pupils should acquire sufficient knowledge of the principles of mathematics and drawing to permit them to express, in the shape of formulas or diagrams, any physical or chemical phenomena desired. 5. Under these

circumstances, it seems wise to establish, either at the end of the present secondary course or at the beginning of the university training, a year of study devoted to general biology, history of art, history of literature, the principles of law and philosophy, etc. This would mean a lengthening of the preparatory course of study of all students and would constitute a higher literary and philosophical course. But not only does the course of study need revision; the methods of secondary instruction also should be modified, in order to develop by observation a keen judgment and the ready expression of thought, and to avoid the overloading of the memory. 6. The Academy of Medicine holds that, in the meantime, while secondary studies are undergoing a process of revision, it is advisable to admit to medical and pharmaceutic courses all pupils of the secondary schools in which Latin and mathematics receive the main emphasis, on the same footing as the pupils of the classical schools in which Greek and Latin are kept more in the foreground.

#### Paravesical Calculi

Before the Société Belge d'urologie, Dr. François discussed recently the clinical, cystoscopic and roentgenologic aspects of calculi found in the vesical portion of the ureter. From the clinical standpoint, calculi arrested in the portion of the ureter that traverses the wall of the bladder and ends in the ureteral meatus are revealed solely by symptoms of cystitis. With the cystoscope, we note changes of the ureteral meatus characterized by redness and tumefaction of the ureteral ostium, and by bullous edema surrounding and concealing the latter. Instead of bullous edema, we may note around the meatus a punctate ecchymosis. From the standpoint of roentgenology, in order to bring out more clearly the organs of the pelvis, the author injects carbon dioxide into the bladder and rectum. Certain calculi betray their presence by a shadow located about a centimeter from the lateral border of the base of the coccyx. To cause such calculi to fall into the bladder, the author, in three cases that he reports, using an endoscope, slit the ureteral meatus by means of a special sound used for electrocoagulation, which he describes in detail.

#### VIENNA

(From Our Regular Correspondent)

Jan. 29, 1922.

#### The Influenza Epidemic

About three weeks ago, a fresh epidemic or rather pandemic of influenza developed in this country. This time the authorities were not taken by surprise, and at the outset all necessary precautions could be taken. An important step was the preparation of a large number of hospital beds for the middle classes, who are worst off in case of illness, because they generally have no servants, the bills of physicians are too heavy for a medium income, and the nutritive condition is far from satisfactory. Now they can obtain hospital accommodation of a better kind for a moderate sum, while the working classes are cared for either by their *krankenkasse* or by the public health service. Up until now, the epidemic has been characterized by a mild course; an enanthem of the fauces is visible, the temperature rarely exceeds 39 C. (102.2 F.), slight tracheal or bronchial involvement is noticed, and nasal and aural complications of a mild type. Mortality is as yet low. Notification of influenza is now compulsory, as disinfection is carried out by the municipal board of health.

#### Termination of the Medical Strike and Conflict with the *Krankenkasse*

As has been reported in a previous letter (*THE JOURNAL*, Jan. 21, 1922, p. 208), the dissatisfaction of the medical staff



of the *krankenkassen* has found outlet in a strike, which lasted for more than ten weeks, and deprived the insured workers of their guaranteed medical help. They could have obtained it, of course, but only as paying private patients. Finally, an agreement was arrived at, by which the medical officers obtained nearly 80 per cent. of their demands. They get now about 150 times their peace-time salaries, and will in future be paid according to the "index," i. e., the ratio of the rise or fall of the average expenditure necessary for the purchase of the principal foodstuffs in this country. The outcome is as complete a victory for the profession as could be hoped for. It shows that only by uniting all physicians in one organization and acting on the principle "*unus pro omnibus, omnes pro uno*" is a definite success sure. It is interesting to note that all along the government did not care very much about interfering, hoping, no doubt, that the profession would have to yield in the end. The success, however, will strengthen the position of our representatives in the coming contest for a "medical act," which is being worked out now. Here the chief points of opposition are to be found in the endeavor of the profession to obtain a sort of self-government, while the other party tries to continue its authoritative control of the physicians and their work.

#### Control of the Pharmaceutic Substances in Dispensaries

The chemicopharmaceutic laboratory of the board of health a year ago established a regular service for the control of the remedies sold by the apothecaries to the public. In 1921, more than 800 laboratories and pharmacies were visited and nearly 5,000 samples were taken, especially in smaller places in the country, where ineffective or spoiled goods could be expected. As a rule, not more than 15 per cent. of the samples were not up to the required standard, while in no place was the percentage less than 5 per cent. *Digitalis folia* was most frequently found ineffective, while adulterations were only rarely observed, in the majority of cases among the alkaloids and narcotic drugs only.

#### The Antituberculosis Provisions in Austria

The board of health has issued a small booklet to all medical centers and practitioners, containing all the information necessary to give patients instructions as to the available means of combating tuberculosis in this country. We have here three groups of such institutions: first, the "welfare centers" or tuberculosis dispensaries; second, special tuberculosis sanatoriums; and, third, the tuberculosis wards of the general hospitals all over the country. In the first group, a fully competent lung specialist, with the help of two or three trained nurses, gives not only advice as to prophylaxis and hygiene in the patient's relations with his family and friends, but gives also ambulatory treatment to patients not requiring proper hospital attendance. In cases requiring hospital care, a bed is procured for the patient much more readily than if the patient himself applies to the hospital. An important feature of this work is also the control, by regular visits in the patient's home, of the convalescing tuberculous person. To that end, the nurses are trained in a special course for "tuberculosis sisters." There are forty-three such welfare centers distributed over the country, situated chiefly in the populous districts of the capital and the provincial cities, where the laborers dwell. In the second group, comprising twenty-seven special institutions, there are about 3,500 beds available for persons suffering from internal or surgical tuberculosis. These sanatoriums are situated chiefly in the sunny or mountainous districts of the Alps, and are equipped with all appliances and apparatus for modern phthisiotherapy—Finsen light, quartz lamps and roentgen rays. The state has of late acquired the control of about 1,800 beds in these institutes, so that the poorer classes also

can obtain the benefit of this kind of treatment. Especially for children, about 400 beds are reserved, and the school physicians and the welfare centers have the right to recommend their patients to the state authorities. In the third group, we have 5,700 beds in the general hospitals, both public and private, intended for the treatment of surgical and internal tuberculosis. Of this number about one fourth are set aside for children. In Vienna alone, 3,400 beds belong to this group, and even this is not sufficient. The charges for this hospital accommodation are as a rule borne by the state or the corporations, which are responsible for the health of their members (*krankenkasse*, civil service, municipal corporations, industrial firms, etc.). In some instances, the expenditure is covered by special tuberculosis grants from philanthropic societies. In any case, the authorities now try to send every patient out to the country for a while, and then keep him under control by notifying the respective "welfare center," so that the ring is closed. Still the number of hospital beds available for tuberculous patients is small in proportion to the total number of hospital beds, being less than 20 per cent.

#### Cancer Research in Austria and Its Present State

Some time ago, the Austrian Society for Cancer Research distributed questionnaires among the profession of this country. In connection with this investigation, Professor Frankel recently read a paper on the subject of cancer research before the medical society of Vienna, in which he gave a review of the present state of the problem. Hunter had begun such an inquiry as early as the beginning of the nineteenth century, and many problems which were a riddle to him have been solved. The pathologic-histologic entity of cancer is settled, but the diagnosis is still doubtful in very many cases; for instance, in cases of the gastro-intestinal canal, cancer was not recognized in more than 18 per cent. of cases, taking the last five years as an average. There is no known method of recognizing the condition at its beginning. However, it has been definitely settled that nearly every individual cancer has its own prognosis, and the histologic constitution alone does not always regulate the malignity or benignity. People who have resisted all other diseases often fall victims to cancer; and its influence on the organism is variable; for example, severe cachexia may be present in very small cancers without severe symptoms. The etiology is extensive. There is the roentgen-ray cancer, purely exogenous, showing little tendency to metastasis; also the xeroderma pigmentosum. The senile involution is often marked by cutaneous carcinoma; higher parasites (vermes, spiropteres) or chemical agents (soot, tar, paraffin, anilin dyes) also produce cancer formations. In other instances, endogenous etiologic factors must also be considered. The nervous carcinoma, the branchiogenous tumors, are no doubt explained by Cohnheim's embryonal theory. Neoplasms follow the same hereditary rules as the malformation. Although statistics do not give a striking proof of the hereditary transmission of cancer, it cannot be doubted that the disposition to it is hereditary. In certain districts in which cancer appears frequently, one must think of parasitic etiology. The pathology of animals shows that invertebrates are free from cancer. In human cancer, the localization in the uterus, stomach or rectum is much more frequent than in the duodenum or ileum. In herbivorous animals, the cancer is usually found in the respiratory tract. Immunology has not hitherto thrown much light on the problem. But the united efforts of pathologists and statisticians, together with general practitioners, who see the development of the evil and often its termination, will aid in unraveling the mystery of cancer by elucidating the following points: frequency, contagiousness, heredity and etiology.



## Marriages

LOWRIE JAMES PORTER, Grand Rapids, Mich., to Miss Priscilla Alden Laing of New Rochelle, N. Y., January 13.

JOHN MILLER TRAIN FINNEY, JR., Baltimore, to Miss Virginia Lee Milton of Wilmington, N. C., February 4.

WILLIAM EDWARD GALLAGHER, Akron, Ohio, to Miss May Rieger of Niagara Falls, N. Y., January 24.

CHARLES A. LEISHER, Cleveland, to Miss Lillian Schreiner of Charleston, W. Va., February 4.

HARRY D. WEBSTER, Doniphan, Neb., to Miss Pauline Weirick of Denver, December 29.

WILLIAM A. MCMURTRIE to Miss Nora Pruden, both of Norristown, N. J., January 4.

ALLEN G. CROW, Cleveland, to Miss Avanell Frenier of Newark, Ohio, December 26.

CHARLES B. EDWARDS, Overton, Neb., to Miss Lillian Arndt of Lincoln, recently.

HARLAN HUBBEL, Laura, Ill., to Mrs. Mabel Wells of Peoria, Ill., January 21.

## Deaths

**James William Holland**, Philadelphia; Jefferson Medical College, Philadelphia, 1868; died, February 10, in the Jefferson Hospital, aged 73. Dr. Holland was born in Nashville, Tenn., April 24, 1849; received his A.M. from the University of Louisville, 1868; professor medical department, University of Louisville, 1872-1875; editor of the *Louisville Medical News* in 1880; formerly president of the Kentucky State Medical Association and member of the Kentucky State Board of Health. Dr. Holland then removed to Philadelphia and became professor of medical chemistry and toxicology, 1885-1912; dean of the faculty, 1887-1916, Jefferson Medical College; member of the American Philosophical Society and fellow of the College of Physicians of Philadelphia; member of the Council on Medical Education, American Medical Association, 1907-1916; author of "Diet for the Sick," "Common Poisons and the Urine," "Mineral Poisons" and "Text-book of Medical Chemistry and Toxicology."

**Walter Van Fleet**, Glendale, Md.; Hahnemann Medical College and Hospital of Philadelphia, 1880; died in Miami, Fla., January 27, following an operation, aged 64. Dr. Van Fleet in 1892 became horticultural editor of the *Rural New Yorker*, New York; served with an expedition up the Amazon to collect new species of birds and plants; plant pathologist to the United States government since 1910, and author of several books on the subject of horticultural hybridization.

**Jacob Anthony Kimmell**, Findlay, Ohio; Cleveland Medical College, Cleveland, 1869; veteran of the Civil War; former postmaster of Cannonsburg, Ohio; served in the Ohio state legislature, 1895; secured the passage of the Kimmell bill, a medical law for the examination and registration of physicians and surgeons in Ohio; surgeon of the Cleveland, Cincinnati, Chicago and St. Louis Railroad for twenty-two years, and president of the railroad surgeons of that system in 1909; died, February 2, from arteriosclerosis, aged 77.

**Young Hance Bond**, St. Louis; University of Maryland School of Medicine, Baltimore, 1867; former president of the Medical Society of St. Louis; member of the board of health; founder, 1890, and president of the Marion Sims College of Medicine, St. Louis, until it became the Medical Department of St. Louis University in 1903, of which he was dean for three years; founder of the St. Louis Dental College; died, February 5, from angina pectoris, aged 75.

**James Watt Fleming** ☉ Brooklyn; Long Island College Hospital, Brooklyn, 1880; founder, and for twenty-five years chairman, of the Eastern District, Y. M. C. A.; formerly president of the Kings County Medical Association; served during the World War on the local draft board; died suddenly on the street, February 7, while returning from a professional call, from heart disease, aged 67.

**David Inglis**, Detroit; Detroit Medical College, Detroit, 1871; Bellevue Hospital Medical College, New York City,

1872; member of the Michigan State Medical Society and president, 1906-1907; formerly consulting neurologist to the Harper Hospital, Detroit; clinical professor of neurology and psychiatrics, Detroit College of Medicine and Surgery; died, February 1, at Tryon, N. C., aged 72.

**John Munro Elder**, Montreal, Quebec; McGill University Faculty of Medicine, Montreal, 1885; surgeon major with the Canadian army during the Northwest Rebellion, 1885; served in France, C. A. M. C., with the rank of colonel during the World War, 1915-1919; formerly assistant professor of surgery and clinical surgery at his alma mater; died, February 5, from septicemia, aged 62.

**Newton Elisha Webb**, Washington, D. C.; National University Medical Department, Washington, 1901; member of the Medical Society of the District of Columbia; member of the board of trade; died suddenly, February 11, while attending a patient, from heart disease, aged 56.

**Ora Dewitt Holland**, Streator, Ill.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, Ky., 1879; Bellevue Hospital Medical College, New York City, 1880; died, December 15, at Long Beach, Calif., from heart disease, aged 68.

**George Clement Samson**, Washington, D. C.; University of Pennsylvania, Philadelphia, 1869; member of the Medical Society of the District of Columbia; physician in charge of the Soldiers' and Sailors' Orphan Home, Washington, 1870-1879; died, February 11, aged 73.

**Martha Elizabeth Reifsnnyder** ☉ Liverpool, Pa.; Women's Medical College of Pennsylvania, Philadelphia, 1881; served as medical missionary in Shanghai, China, since 1883, at the Margaret Williamson Hospital; died, February 4, from heart disease, aged 64.

**Eleazur King Nash**, Akron, Ohio; Cleveland Medical College (Western Reserve University School of Medicine), Cleveland, 1861; Civil War veteran; member of the Ohio State Medical Association; died, February 10, from senility, aged 93.

**James Francis Sullivan**, New York City; Medical Department of the University of the City of New York, 1878; formerly physician at the Alms House, Tarrytown, N. Y.; died suddenly, February 4, in his office, from heart disease, aged 64.

**William G. Hier**, Cincinnati; Pulte Medical College, Cincinnati, 1884; member of the Ohio State Medical Association; formerly professor of sanitary science and hygiene, Pulte Medical College; died, February 2, at Madisonville, aged 66.

**John Addison Jenkins**, Brooklyn; Bellevue Hospital Medical College, New York City, 1865; member of the Medical Society of the County of Kings and the Medical Society of Greater New York; died, February 4, from senility, aged 78.

**Charles Russell Conway**, Greensburg, Ind.; American Medical College, St. Louis, 1896; formerly known as Charles W. Pagel; died, December 29, at La Ceiba, Honduras, C. A., from septicemia resulting from snake bite, aged 51.

**James A. Shirley**, Mount Sterling, Ky.; University of Louisville, Ky., 1872; president of the Montgomery County Medical Society; president of the county board of health; member of the school board; died, January 28, aged 75.

**Milton B. Blouke**, Chicago; Chicago Homeopathic Medical College, 1885; at one time professor of gynecology, Hahnemann Medical College and Hospital of Chicago; died, February 13, at St. Petersburg, Fla., aged 59.

**Harrison Gray Blake**, Woburn, Mass.; Medical School of Harvard University, Boston, 1888; member of the Massachusetts Medical Society; member of the Massachusetts Medical-Legal Society; died, January 6, aged 57.

**Henry Scammon Edson**, Deer Lodge, Mont.; Rush Medical College, Chicago, 1917; during the World War served as lieutenant, M. C., U. S. Army; local surgeon of the Northern Pacific Railroad; died recently, aged 30.

**William Christopher Berry**, Boston; Tufts College Medical School, Boston, 1907; member of the Massachusetts Medical Society; died, February 8, at the Peter Bent Brigham Hospital, from pneumonia, aged 62.

**James Stein**, Philadelphia; University of Pennsylvania, Philadelphia, 1887; served during the World War; former coroner of Lackawanna County; died, January 30, from cerebral hemorrhage, aged 55.

**Marcus Summerfield**, New York City; Eclectic Medical Institute, Cincinnati, 1864; also a lawyer; formerly member of the faculty of the law school of the University of Kentucky; died, January 19, aged 79.



**Alexander Logan Cope**, Winona, Ohio; Western Reserve University School of Medicine, Cleveland, 1888; member of the Ohio State Medical Association; died, January 28, from angina pectoris, aged 72.

**William Culbert Lyon** ♂ Annapolis, Md.; University of Maryland School of Medicine, Baltimore, 1907; lieutenant, M. C., U. S. Navy, retired; died at his home, Valatie, N. Y., February 6, aged 42.

**Jacob Oosting** ♂ Muskegon, Mich.; Detroit College of Medicine, Detroit, 1897; city physician; medical examiner of the Muskegon County draft board; died, January 30, from pneumonia, aged 56.

**Henry Thomas Carter**, North East, Pa.; Medical Department of the University of the City of New York, 1883; member of the Medical Society of the State of New York; died recently, aged 61.

**James A. Judkins**, Barnesville, Ohio; Medical College of Ohio, Cincinnati, 1866; veteran of the Civil War; member of the county board of charities; died, February 2, from pneumonia, aged 79.

**John Louis Wessels**, Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1888; member of the Medical Society of the State of Pennsylvania; died, February 2, aged 66.

**Charles Albert Johnson**, Barry, Ill.; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, 1903; was shot and killed by an insane man, February 7, aged 41.

**Rueben Frederick Fellows**, Des Moines, Iowa; St. Louis College of Physicians and Surgeons, St. Louis, 1897; died, January 29, at Punta Gorda, Fla., from pneumonia, aged 56.

**Alfred Turpin Calhoun** ♂ Cartersville, Ga.; Atlanta Medical College, Atlanta, Ga., 1890; at one time councilor of the Medical Association of Georgia; died, January 31, aged 59.

**Edward Augustus Cook**, Kirks Grove, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1884; died, December 18, from chronic cystitis and gastritis, aged 64.

**Levi Oberholtzer**, Phoenixville, Pa.; University of Pennsylvania, Philadelphia, 1854; former burgess of Phoenixville; also a druggist; died, February 2, from senility, aged 89.

**Joseph Allen Horne**, Philadelphia; University of Pennsylvania, Philadelphia, 1880; member of the Medical Society of the State of Pennsylvania; died, January 4, aged 72.

**William Rowley** ♂ Gloucester, Mass.; Baltimore Medical College, 1893; served on the medical board of the Addison Gilbert Hospital; died, January 29, aged 57.

**John Montgomery Malony**, Dundee, N. Y.; Georgetown University School of Medicine, Washington, D. C., 1870; died, January 31, following a long illness, aged 76.

**Wellington T. Stewart** ♂ Chicago; College of Physicians and Surgeons (University of Illinois), Chicago, 1893; died, February 11, from heart disease, aged 57.

**Daniel Winfield Layman**, Des Moines, Iowa; Medical Department, University of Illinois, Chicago, 1904; died, January 15, at San Diego, Calif., aged 42.

**Harry Horner Hubbell** ♂ Corning, N. Y.; University of Buffalo, N. Y., 1901; consulting physician, Corning City Hospital; died, January 26, aged 43.

**Arthur Blake Clarke**, Plantersville, S. C.; University of Maryland School of Medicine, Baltimore, 1906; died, January 31, from lobar pneumonia, aged 51.

**Oliver S. Weddell**, McKeesport, Pa.; Jefferson Medical College, Philadelphia, 1876; former city physician; died, January 27, from pneumonia, aged 74.

**John C. Anderson**, Greenpond, Va.; College of Physicians and Surgeons, Baltimore, 1876; died, November 25, from carcinoma of the prostate, aged 70.

**Acastus L. Macomber**, Norfolk, Neb.; New York Homeopathic Medical College, New York City, 1872; died, January 28, in Rochester, N. Y., aged 77.

**Edward Martin Wise**, Baltimore; University of Maryland School of Medicine, Baltimore, 1877; died suddenly, February 5, from heart disease, aged 67.

**Eugene Jeffrey Brinson**, Americus, Ga.; Meharry Medical College, Nashville, Tenn., 1898; died, February 2, from cerebral hemorrhage, aged 49.

**John Baxter Carson** ♂ Blairsville, Pa.; Jefferson Medical College, Philadelphia, 1889; died, suddenly, January 30, from heart disease, aged 55.

**Solon R. Wakefield** ♂ West Salem, Wis.; Rush Medical College, Chicago, 1879; died suddenly from heart disease, February 4, aged 70.

**George Ball Rowell**, San Bernardino, Calif.; McGill University Faculty of Medicine, Montreal, Quebec, 1884; died, January 15, aged 62.

**Arthur Allen Gibson**, Somerville, Mass.; University of Vermont College of Medicine, Burlington, 1877; died, February 6, aged 72.

**Caroline Hempstead Marsh-Wikle Farrell**, Jonestown, Pa.; Woman's Medical College of Philadelphia, 1890; died, January 15, aged 58.

**Emanuel William Eilau** ♂ Baltimore; University of Maryland, Baltimore, 1879; died suddenly, February 1, from heart disease, aged 68.

**James A. Martin**, Mount Zion, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1887; died, January 21, aged 72.

**Francis R. Sparling**, Marietta, Ohio; Starling Medical College, Columbus, 1880; died, February 3, at Devois Dam, aged 68.

**Robert Reed Stewart**, Philadelphia; Jefferson Medical College, Philadelphia, 1882; died, February 2, from heart disease, aged 74.

**Sarah Elizabeth Simonet**, Croghan, N. Y.; University of Buffalo, N. Y., 1885; died, February 3, from heart disease, aged 68.

**George Roberts**, Alexandria, Va.; University of Pennsylvania, Philadelphia, 1868; died, February 1, from senility, aged 75.

**Walter Miller**, Millerton, N. Y.; Albany Medical College, Albany, N. Y., 1882; died, January 13, from heart disease, aged 66.

**Samuel Abraham Christie**, South Acton, Mass.; College of Physicians and Surgeons, Boston, 1903; died, February 3, aged 67.

**Daniel L. Campbell**, DeFuniak Springs, Fla. (license, Florida, years of practice); died, January 27, from senility, aged 87.

**William Henry Tippie**, Tremont City, Ohio; Starling Medical College, Columbus, Ohio, 1895; died, December 11, aged 61.

**George Nixon White**, Canadian, Texas; Eclectic Medical Institute, Cincinnati, 1884; died, January 26, from pneumonia, aged 71.

**John W. Christian**, Concord, Tenn.; Tennessee Medical College, Knoxville, 1898; died, January 20, from pneumonia.

**Marcellus R. Toland**, Los Angeles; Southern Medical College, Atlanta, Ga., 1883; died suddenly, February 5, aged 68.

**Frederick E. Dalrymple**, Lincoln, Neb. (license, Nebraska, 1881); died, December 23, from diabetes mellitus, aged 70.

**Henry Nathan Litchfield**, Darby, Pa.; Medico-Chirurgical College of Philadelphia, 1904; died, December 15, aged 51.

**James Robert F. Bell**, Philadelphia; University of Pennsylvania, Philadelphia, 1869; died, December 16, aged 76.

**Albert Volkenberg** ♂ New York; Medical Department of the City of New York, 1883; died, January 31, aged 72.

**Robert Foster Dayes**, Freeport, Ill.; University of Pennsylvania, Philadelphia, 1858; died, November 6, aged 85.

**William A. Smith**, Walnut Ridge, Ark.; Kentucky School of Medicine, Louisville, 1893; died, January 30, aged 60.

**Jonathan N. Shemwell**, Barlow, Ky.; Kentucky School of Medicine, Louisville, 1889; died recently, aged 89.

**T. B. Satterfield**, Oklahoma City (years of practice); died, January 24, at the University Hospital, aged 84.

**J. R. Groover**, Key, Ga.; Atlanta Medical College, Atlanta, 1876; died, January 16, from senility, aged 81.

**Samuel Russell**, Brooklyn; Long Island College Hospital, Brooklyn, 1875; died, February 3, aged 84.

**Felix M. Borucki** ♂ Chicago; University of Kharkov, Russia, 1874; died, February 13, aged 73.

**Jonathan Moffett**, Malvern, Ohio (years of practice); died, January 17, from pneumonia, aged 87.

**John Nevins**, Greene, Iowa; Rush Medical College, Chicago, 1886; died, January 27, aged 61.

**Thomas Howell**, Havana, Fla. (years of practice); died, February, 3.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### LIPOIDAL SUBSTANCES (HOROVITZ) NOT ADMITTED TO N. N. R.

#### Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report declaring Lipoidal Substances (Horovitz) inadmissible to New and Nonofficial Remedies because its composition is essentially secret and because the curative claims made for it are unsubstantiated and, therefore, unwarranted.

W. A. PUCKNER, Secretary.

In the advertising of the Horovitz Biochemic Laboratories Co. (A. S. Horovitz, president) we read:

"Horovitz proves by careful paralleled investigations of normal and of pathological tissues, both in addiction disease and in other diseases, that in patients suffering from narcotic addiction disease there is an inactivity of the lymph-glands due to the use of the drug and that the system is not supplied with the necessary fats." "Horovitz further found that the lipoidal content of the cerebro-spinal system varies in strict accordance with the pathological processes introduced by infection or by alkaloids. Furthermore, he has found that the lipoids of various other organs, as well as those of the nervous system, may be extracted and consumed by the administration of narcotic alkaloids."

It is further stated in the advertising that:

"After a long and very careful research investigation, Dr. Horovitz worked out a method of rational treatment for narcotic addiction disease which involves the restoration of the lipoids, which have been lost through the action of the drug, and of the toxins, by means of a combination of lipoidal substance from various plant lipoids in the form of a sterile solution. This preparation not only replaces the lipoids lost by the tissues, but also protects the nerve tissues, from attacks by the toxins elaborated during the use of narcotics, and, this by detoxicating the tissues, brings about permanent freedom from the craving of narcotics, instead of the temporary relief afforded by other methods of treatment."

The "combination of lipoidal substance of various plant lipoids" which was worked out by Horovitz, the Horovitz Biochemic Laboratories offer as "Lipoidal Substances." This preparation is supplied in ampoules said to contain 1 c.c. of solution. The treatment with "Lipoidal Substances" consists, first, in the complete withdrawal of the narcotic; second, in free catharsis; and third, in the intramuscular injection of the preparation. The initial dose is given as 8 to 12 minims repeated with increase of 3 to 4 minims every three hours during the first day. On the second, third and fourth day 16 minims is to be given twice a day and "from the fifth day until the medication is stopped (usually 28 to 35 days) it will be necessary usually to give but 1 injection of 16 minims each day."

In a request for the admission of its preparation to New and Nonofficial Remedies, the Horovitz Biochemic Laboratories Co. stated:

"The composition of Lipoidal Substance is (a) Lipoids of plant origin, (b) Vitamines (water soluble) of plant origin, (c) Non-specific plant proteins, (d) Preservatives—None."

While the communication abounded in generalities, it gave neither the identity nor character of the lipoids, of the vitamins nor of the nonspecific protein, nor their quantities or methods for their control. The firm presented no evidence that the injection of "Lipoidal Substances" produced any effect other than by suggestion. Also, while a long list of references to publications bearing on lipoids was submitted (many of which had no bearing on the subject under consideration) there was no reference to the work of Horovitz quoted in the firm's advertising.

After examining the information which had been submitted, the Council requested the manufacturer to supply:

1. Information as to the character (identity) of the several ingredients contained in the preparation that it marketed, the amount of each ingredient so far as known and the method used for their control.

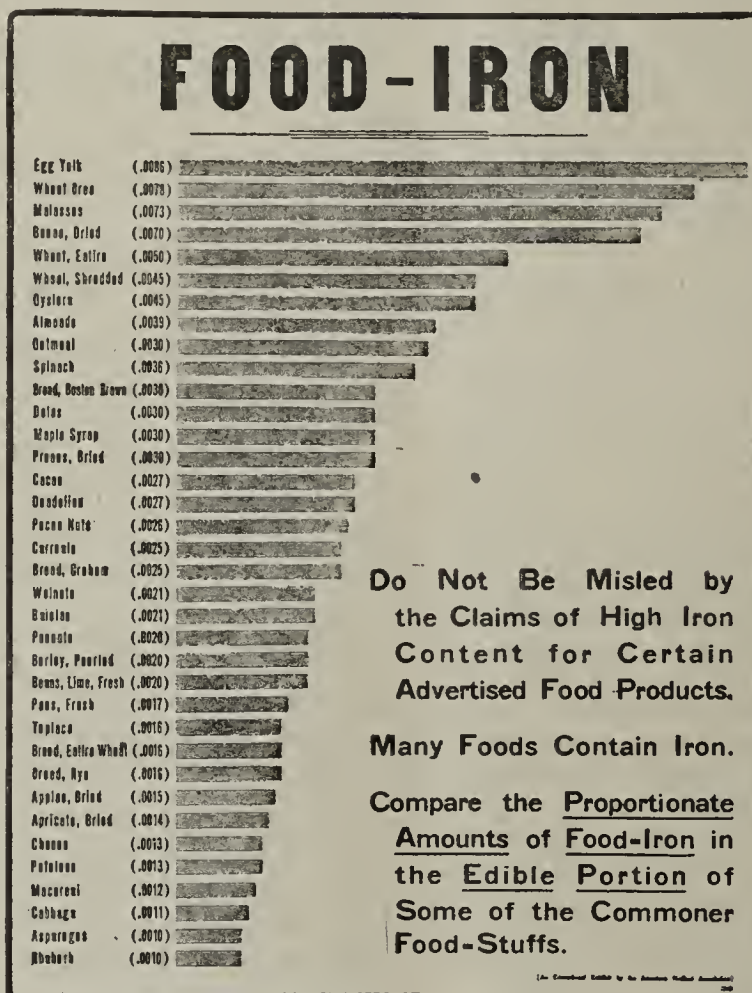
2. Evidence that the administration of "Lipoidal Substances" is of value in the treatment of drug addiction.

3. Evidence for the claims that the "researches" of Horovitz have proved that "in patients suffering from narcotic addiction disease there is an inactivity of the lymph-glands . . . and the system is not supplied with the necessary fats" and that "lipoidal content of the cerebro-spinal system varies in strict accordance with the pathological processes introduced by infection or by alkaloids" and that "the lipoids of various other organs as well as those of the nervous system, may be extracted and consumed by the administration of narcotic alkaloids."

The Horovitz Biochemic Laboratories replied that the requested information would be supplied in about *two weeks*. At the expiration of *three months* the promised information and evidence had not been received; neither had any reports to show the value of the treatment come to the attention of the Council. The Council, accordingly, declared "Lipoidal Substances" (Horovitz Biochemic Laboratories) inadmissible to New and Nonofficial

Remedies because the composition is essentially secret and because the curative claims are unsubstantiated and unwarranted.

**Standardization of Biologic Stains.**—A conference was held in November, in New York City, under the auspices of the National Research Council to discuss the standardization of biologic stains, with the object of developing a reliable American supply of these. It was stated that the stains must be standardized by three different methods: chemical analysis; testing for bacterial staining, and testing for histologic purposes. The bacterial staining has achieved satisfactory results in obtaining basic fuchsin and methylene blue and work is now in progress on gentian violet. A committee was appointed under the division of biology and agriculture, with the cooperation of the division of medicine, for the organization of further plans in this direction. Dr. Frederick G. Novy, University of Michigan, and Dr. Frank B. Mallory, Boston City Hospital, are on the committee.



Photographic reproduction (greatly reduced) of one of the Educational Posters prepared by the Propaganda Department. In the original these posters measure 22 by 28 inches. This one is published for the purpose of offsetting to some degree the misleading claims made by the exploiters of certain advertised food products relative to the amount of food-iron such products contain.



## Correspondence

### A COURT OF DECENCY FOR PHYSICIANS

*To the Editor:*—Among the activities of various medical associations to stimulate legislative enactments favorable to our interests and to block legislation detrimental to them, one important form of propaganda is being omitted. Medicine, like any other public utility dependent on the good will of the consumer for the franchise regulations that give it life, should have some mechanism to take care of complaints of customers dissatisfied with the service. In every other profession, the law, the ministry, the army and the navy, and in academic and legislative bodies there is what might be called a court of decency to which the layman can appeal for information or enlightenment in regard to acts of any member of these professions that he may consider wrong; a committee that has the power to disbar from membership in these associations on account of numerous offenses, among them so subtle a one as "conduct unbecoming a gentleman."

There is need in our profession of a similar court before which the public can carry complaints for maltreatment, real or imagined, medical or financial, with the assurance that members of our profession who may have offended in their relations with the public will, if found culpable, become subject to reprimand and censure by this body of their peers, that redress will be offered, a penalty be imposed and, in extreme cases, a license be revoked or disbarment instituted. Such a court could be national, or limited to each state or even to smaller communities. Our boards of censors or committees on ethical relations do not answer this purpose as far as the layman is concerned; they settle disagreements among physicians and are merely a loose league of medical men with a mandate over professional conduct.

As things are drifting today, health centers, medical groups, superspecialists, etc., are driving a cold wedge between physician and patient. The sick person coming to his physician in pain or suffering, frightened and in confidence, misses the old hearty personal relation for which we are substituting something very mechanical. On account of the increased "overhead" incident to these modern arrangements, it has become more and more difficult to exclude commercialism and to rule out the element of cupidity. The tendency is for the doors to be thrown open to questionable practices, professional and financial, chiefly along the lines of needless surgery, needless diagnostic fussing, and unduly prolonged courses of treatment, with needless hospitalization and consequently needless expense. It is really quite wonderful that in the great majority of instances the work remains as honest as it is; for it is very easy to be crooked, and the difference between straight and just a little crooked can make an enormous difference in the professional income. I think the public is beginning to understand this, to assume an attitude of somewhat amused suspicion toward the doctor, and in general to contemplate acts of self-defense.

We should hold communion with ourselves and recognize this attitude and the facts that underlie it. If we can reestablish an attitude as friendly to the profession collectively as it was, and, broadly speaking, still is, to the family physician, then we have "sold" them our estimate of ourselves and it will not then be necessary by legislative enactments to ram it down their throats.

In order to make the people feel that generally their confidence in their physicians remains justified and that the element of cupidity is not brought into the foreground as often as they imagine, they must, in cases of abuse, have an outlet for their grievance. The patient with a "kick" may

tell his troubles to his friends, maybe to another physician, or he may go to law; but he rarely secures any satisfaction. Many cases arise in which recourse to the law can offer nothing or in which factors of delicacy preclude the airing of grievances in public, cases in which the code of decency rather than the code of laws has been violated.

If people cannot complain, they grow more angry than if they had spoken. Collectively, these unspoken, unrequited grievances have done more to undermine the confidence of the public in our profession and have created more opposition to legislation in favor of the profession, more fear of a medical trust, than any other single factor that we have to deal with.

If, therefore, we wish to retain the good will of the public, and by means of a friendly electorate stimulate our legislators to regulate the practice of medicine as we should like to have it regulated, because most physicians recognize that the interests of the patient should be given first consideration, then as a first and essential step we should inaugurate an effective mechanism of self-purification and allow the public to participate in the process.

ALFRED C. CROFTAN, M.D., Chicago.

### "THE SERUM PROPHYLAXIS OF MEASLES"

*To the Editor:*—In his paper on the serum prophylaxis of measles (*THE JOURNAL*, Feb. 4, 1922, p. 340) Dr. McNeal mentions the work on immunization against measles which I have been carrying on since 1914, and makes a criticism of my method, which at first sight seems justifiable, namely, that "the method cannot be recommended strongly because of the danger of producing a severe attack of the disease in a susceptible infant, and also of introducing other virulent organisms." These objections are theoretical rather than real, for I have immunized about 150 infants without a single unfavorable effect. It goes without saying that certain precautions must be taken in the selection of the individuals from whom the infectious material is taken, and in the infants to be immunized. However, as I myself have stated, in order to make the method safe for general use, it would be advisable to free the mucus from extraneous micro-organisms. I do not think it would be very difficult to obtain a preparation which would be bacteria free and which would still retain its potency.

The use of convalescent serum for the purpose of immunization against measles has only a limited application. As Dr. McNeal says, "One child contracted measles two months after successful injection; this suggests that the immunity does not persist longer than sixty days in some cases." The method is only of value in protecting a group of susceptibles when they are exposed to infection, and even then it is not certain, as the published reports show. However, this is only a very small part of the measles problem. In a paper on this subject (*Arch. Pediat.* 34:933 [Dec.] 1917) I stated that "after years of observation of the spread of measles, I have become convinced that a real control and a distinct reduction in the morbidity and mortality is impossible with our present prophylactic measures. A true control can only be obtained by the immunization of infants against the disease." Dr. McNeal recognizes this, for he says: "A marked attenuation of the disease with permanent immunity, but without complications or sequelae, would seem to be more advantageous than the absolute but transient protection."

The necessity for immunizing young infants will become apparent if we compare the results obtained by vaccination against smallpox with those obtained by the use of antitoxin against diphtheria. By vaccinating all young infants, smallpox has been almost eradicated. In diphtheria antitoxin we



have a certain means of protecting susceptible individuals who are exposed to infection. What has been the result? After the introduction of diphtheria antitoxin, there was a distinct reduction in the mortality, but during the last ten years, it has remained almost stationary. Why? Because the vast majority of the susceptibles are exposed at a time when such exposure is not suspected. With the introduction of immunization of all infants by means of toxin-antitoxin mixtures, diphtheria will probably be really controlled.

The isolation of the measles virus, its identification and its growth in pure culture are not essential for successful immunization (compare with vaccination against smallpox). We know positively that the nasal mucus in a certain stage of the disease contains the infectious material in an active form. In the method of immunization which I have employed, I have utilized the fact that infants under 5 months of age whose mothers have had measles are relatively immune to the disease. This makes it unnecessary to attenuate the virus, which I believe is a distinct advantage, because such attenuation would probably render its immunizing effect less certain. By inoculation, the temporary relative immunity is converted into an immunity which lasts at least for the first few years, that is, during the period when the disease is most dangerous.

CHARLES HERRMAN, M.D., New York.

#### MOTION PICTURES OF OBSTETRIC PROCEDURES

*To the Editor:*—Recently our medical society gave an exhibition of some moving pictures illustrating normal and abnormal labor, or rather labor with the child in various positions both of the vertex and breech. Some of the cases illustrated the application of the forceps. In one case the child's head was perforated, the brain broken up and washed out, then a cranioclast applied, and the fetus extracted. If the indication for this barbarous procedure was given on the film, I failed to get it; I did get the impression that it was done merely to show technic. In another case it was performed on the aftercoming head. My criticism is that sufficient information was not given to enable a spectator to judge as to whether the operation was justified or not. So far as I could form an opinion from the picture, it was not justified. Five or six cases of puerperal eclampsia were shown during the spasms. No treatment was indicated, and this part of the "picture" looked as if it had been prepared more for a lay audience than for medical men. In the first obstetric picture, the patient had not been shaved. The preparation for the laparotomy disclosed a number of errors in technic, and the incision for the removal of the ovarian cyst was twice as long as was necessary. Episiotomy was given more prominence than it should have been given, and was done at a period in the labor when it could not be known whether or not the operation would be called for. The incisions for cesarean section extended from the ensiform cartilage to the symphysis, and the uterus was delivered outside the abdomen before it was opened. No one does the operation in this country by that technic any longer, nor would an assistant wearing a long and luxurious growth of beard be allowed near an operating table without a gown and his hair and beard covered. There is no clinic in this country that could not show better obstetric work.

In thinking the matter over, it struck me that it was an effort on the part of Vienna to induce students to come back there for postgraduate work as they did prior to 1914. In talking with our secretary, however, I learn that this is not the case, so far as he knows. At least, he says, his arrangements were made with the Scientific Film Company of Chicago, which concern rents this film to a society for \$75,

and the society then rents a motion picture house to have it put on. Our total expense was \$100.

It is due any other medical body which is planning to put this on to know about what to expect.

BUDD VAN SWERINGEN, M.D., Fort Wayne, Ind.

#### THE SCARCITY OF PHYSICIANS IN RURAL DISTRICTS

*To the Editor:*—I have been much interested in reading the articles in regard to lack of physicians in rural communities.

I wonder whether the real cause has been properly stressed. The normal young man starting in the practice of medicine looks forward to a family. He may be able to stand the isolation, hard work and other drawbacks, but, if he has any intelligence at all, he hesitates to place himself in a position in which his children cannot receive a proper education under decent sanitary conditions. The average small town and rural child does not have these advantages.

I believe that the procurement of a sufficient number of properly educated physicians for rural regions depends, as does most other rural progress, on proper public schools for those regions.

CHARLES H. KEENE, M.D., Harrisburg, Pa.

Director, Department of Public Instruction,  
Commonwealth of Pennsylvania.

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### BALANITIS GANGRENOSEA AND TROPICAL ULCER

*To the Editor:*—1. Are "tropical ulcer" and "fourth venereal disease" synonymous terms?

2. Kindly give me some suggestions for treatment of a very extensive ulcerative condition of the skin and soft parts of the shaft of the penis and the region at the base of the penis. This is a chronic inflammatory process of fourteen months' duration. Blood and spinal fluid Wassermann tests are negative. In spite of tests, many injections of arsphenamin have been given with negative results. Likewise, mercury compounds have had no influence on the condition.

3. How should antimony be given in a case of this nature?

4. Have the roentgen rays and radium been used to any good effect in these chronic ulcerative processes?

Kindly omit my name.

R. K. C.

ANSWER.—1. Balanitis gangrenosa has sometimes been called the "fourth venereal disease." It is a disease similar to Vincent's angina, apparently being due to a bacillus and spirillum that are found in symbiosis. The organism flourishes only in anaerobic conditions, and it invariably starts in man under a long prepuce. It produces rapid gangrene which may in a few days destroy the glans and the prepuce, and, in some cases, destroys the entire shaft of the penis. The key to its treatment lies in the fact that the organism does not flourish when exposed to oxygen. The parts should be left exposed to the air, and perhaps the best treatment is the constant application of hydrogen peroxid. The brief description which our correspondent gives of the case of chronic ulceration of the penis of fourteen months' duration does not suggest balanitis gangrenosa, but rather suggests the condition of chronic ulceration of the genitals which has heretofore been thought to be in most cases the result of a chancroidal infection. Lately some of these cases in this country have been found to be true tropical ulcers of the pudenda, which is a form of leishmaniasis. It is probable, however, that most of these cases in this country are not that condition, but chronic phagedenic chancroids.

2. The treatment of these chancroids is difficult, and consists of constant surgical attention, in laying open the pockets and trimming off the undermined skin, and other similar surgical applications. The best local applications in such cases are iodoform and argyrol crystals, not powder. Another



method of treating these cases which sometimes succeeds when all other methods fail is the bath in which the patient's body is immersed for a few hours a day in a bath kept at comfortable temperature—that is, one slightly above blood heat.

3. The most effective treatment of tropical ulcer is in the intravenous administration of antimony and potassium-tartrate. This is administered in the form of a 1 per cent. solution, of which 5 c.c. ( $1\frac{1}{3}$  fluidrams), best diluted to 25 c.c. ( $6\frac{3}{4}$  fluidrams) is given every second day.

4. Neither of the two conditions considered is due to syphilis, and neither of them is benefited by arsphenamin or mercury administered internally.

The following papers may be consulted:

Goodman, Herman: Ulcerating Granuloma of Pudenda, *Arch. Dermat. & Syph.* 1:151 (Feb.) 1920.

Aragão, H. de B.: Granuloma Venereum, *New Orleans M. & S. J.* 70: 369 (Oct.) 1917.

Pardo, V.: Ulcerating Granuloma of Pudenda, *J. Cutan. Dis.* 36: 206 (April) 1918.

#### PHYSICIANS AND THE INCOME TAX

To the Editor:—After reading the article on "Physicians and the Income Tax" in THE JOURNAL, February 4, I wish to ask one question: Can money paid for sick and accident insurance be considered as a deductible expense in a physician's return?

R. E. GOLDEN, M.D., Walla Walla, Wash.

ANSWER.—The cost of insurance is a personal and not a business expense, and it is therefore not deductible.

To the Editor:—In THE JOURNAL, February 4, page 373, among those who must file income tax returns you include "all persons . . . even if the exemptions are sufficient to relieve them from paying any tax." In the February 4 issue of the *Literary Digest*, page 66, quoting from a report of the Commissioner of Internal Revenue, David H. Blair on this question writes: "Returns are required of every single person whose net income for 1921 was \$1,000 or over, every married person not living with husband or wife whose net income was \$1,000, and every married person living with husband or wife whose net income was \$2,000 or over." If the *Digest's* statement is correct it would probably save thousands of physicians in the country the trouble of making out reports; and as this corresponds to a personal letter written to me by the collector for Colorado, I take the liberty of calling your attention to it and ask that you answer through THE JOURNAL.

EMANUEL STUVER, M.D., Fort Collins, Colo.

To the Editor:—In THE JOURNAL, February 4, you say, on page 373, that all must make returns whose net income for 1921 amounts to \$1,000; but I find in the new forms no statement that would lead me to think a married man supporting wife and children should make returns unless his net income is \$2,000.

GEORGE D. CARNES, M.D., South Haven, Mich.

ANSWER.—The instructions for individual returns provide that every citizen and every person residing in the United States whose income for 1921 amounted to \$5,000 or whose net income amounted to \$1,000, if single, or \$2,000, if married, must file an income tax return.

#### BIO-CHEMIC LABORATORIES PRODUCTS

To the Editor:—Will you kindly report on the enclosed preparations, and oblige.

L. A. FRARY, M.D., Los Gatos, Calif.

ANSWER.—Accompanying this inquiry were three pieces of advertising matter put out by the "Bio-Chemic Laboratories" of Chicago and Los Angeles.

1. "Salvarsan and Mercury without the Needle!" In this pamphlet the firm recommends the use of "Salv-Absorbs" and "Merc-Absorbs," which are said to represent preparations for the rectal administration of arsphenamin and mercury, respectively.

2. "Something New in Glandular Therapy—Caplets." This circular declares that "Caplets make possible the preparation of any desired pluriglandular combinations in your own office. . . . Your office girl can make them up for you."

3. "Why Gland Transplantation?" A circular devoted to "Orch-Absorbs" which is said to be "a preparation of interstitial glands for intra-rectal administration."

The Bio-Chemic Laboratories has not requested an examination of its proprietaries by the Council on Pharmacy and Chemistry, nor has the Association's Chemical Laboratory or THE JOURNAL investigated any of them. The Council on Pharmacy and Chemistry, however, has published a report on another proprietary form of administering arsphenamin by rectum. This brings out the lack of evidence for the efficacy of this method of arsphenamin administration. The pluriglandular "Caplet" medication is a form of shot-gun therapy that has been the subject of a report by the Council

on Pharmacy and Chemistry ("Pluriglandular Mixtures," THE JOURNAL, Jan. 18, 1919), and has been discussed editorially ("Disappointments of Endocrinology," THE JOURNAL, June 11, 1921, p. 1625).

#### TREATMENT OF DIPHTHERIA—REACTION TO SERUM AND TO ANTITOXIN

To the Editor:—1. What is the best method of treatment of a case of pharyngeal diphtheria in which the patient reacts badly to a trial injection of a few minims of antitoxin?

2. Approximately what percentage of asthmatics react to antitoxin with serum disease or anaphylactic shock?

3. Is not one type of serum as liable to produce anaphylaxis as another, e. g., tetanus or diphtheria antitoxin or plain horse serum?

4. Then in a case in which antitoxin has been previously administered, regardless of the type, is it not quite advisable to test the patient's susceptibility before administering a prophylactic dose of tetanus antitoxin?

5. How long, on the average, does sensitization last?

6. What is the most effective treatment of carriers of diphtheria bacilli?

7. A patient, having been given diphtheria antitoxin, has no reaction. Two years later, three days after taking the diphtheria antitoxin, he has a typical serum sickness accompanied by intense edema, urticaria, etc. What are the possibilities which may follow a third dose given a year or two later; will the sensitization increase and produce an immediate shock, or will it diminish in intensity? Or will it merely reproduce the serum sickness as before?

8. Granted that the reaction occurs because of the serum itself and not the antitoxin, is the cause to be found in the fact that less care is used in the preparation of one set of antitoxin than in another? Is it the experience of practitioners in general that a lesser number of unfavorable reactions occur after the use of antitoxin put up by well known pharmaceutical firms, than after the use of that distributed by the state department?

Please omit my name.

V. W., New York.

ANSWER.—1. In mild cases of diphtheria, especially in older patients, local treatment as employed in preantitoxin days may be sufficient. Usually very small doses of serum may be given, and by gradually increasing doses at short intervals, the desired amount may be administered. Gradual entrance of the serum into the blood may be secured by injecting it subcutaneously, well diluted with physiologic sodium chlorid solution.

2. It is impossible to state.

3. Yes.

4. Yes.

5. It may last many years.

6. Removal of the abnormal local condition which allows the bacilli to persist, such as diseased tonsils (large or small), chronic nasal sinusitis, hypertrophied adenoids, or foreign bodies in the nose.

7. No prophecy can be made as to what will occur. There may or may not be a reaction.

8. Virtually all the diphtheria antitoxin serum now produced is treated by a process of chemical precipitation, much of the protein content being thus removed and the antitoxin being retained in solutions with globulins. Different preparations might vary in the completeness with which the "purification" is carried out. They will also vary in their antitoxic content per cubic centimeter, and so in the quantity which holds a certain number of units. There seems to be no reason why unfavorable reactions should occur when the antitoxin distributed by state departments is used over those which occur with antitoxin distributed by commercial firms. In fact, most of the state board antitoxin is purchased from private manufacturers.

#### "THE RELATION BETWEEN TUMORS IN PLANTS AND IN ANIMALS"

To the Editor:—In the editorial (THE JOURNAL, Jan. 14, 1922, p. 112) on "The Relation Between Tumors in Plants and in Animals," it is stated in the second paragraph that "Jensen . . . in 1910 discussed the resemblance to mouse cancer of tumorous growths in *turnips*" (italics mine). Can you give me this reference? I think you must mean beets instead of turnips. I was in Jensen's laboratory in the fall of 1910, and he showed me some beautiful tumors in beets: yellow tumors produced in red beets and red tumors in yellow beets. He had presented a paper on these tumors at a meeting that spring or summer, I do not remember which. Possibly you got your information from a report of this meeting.

CHARLES B. MORREY, M.D., Columbus, Ohio.

ANSWER.—Our correspondent's suggestion is probably correct, the error being due to the ambiguity of the Teutonic speech. Blumenthal in his review of Jensen's work used the word "rüben." Generally when beets are meant the Germans specify "rote rüben." The dictionaries give the equivalent of "rübe" as "turnip." Blumenthal himself speaks of working with "rote rübe," whereas in speaking of Jensen's work, he uses only "rübe," and reference to Jensen's original work indicated that he worked with beets and not with turnips.



## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vighne, Juneau.  
ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.  
CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.  
CONNECTICUT: New Haven, March 14. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.  
DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.  
HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.  
IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.  
IOWA: Des Moines, March 21-23. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.  
MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.  
MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.  
MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.  
MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.  
OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.  
RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.  
UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

### MEDICAL CASE RECORDING IN HOSPITALS \*

E. H. LEWINSKI-CORWIN, PH.D.

Executive Secretary, Public Health Committee, New York  
Academy of Medicine  
NEW YORK

In connection with the dispensary study of two years ago, the Public Health Committee of the New York Academy of Medicine devised a method of rating medical efficiency in an objective way, on the basis of case records, the theory being that the case record contains, or at least should contain, a clinical picture of the case plus such facts about the personal and family history of the patient as bear on his present condition, and such diagnostic, therapeutic and other notes as are necessary for the proper understanding of the case and the future reference. For, otherwise, why is a record? Why has it been introduced?

The same method was pursued in the study of hospital efficiency. Accordingly, several thousand case records were critically scrutinized in accordance with a standard method carefully devised. It may be granted that an analysis of records does not give a fully adequate portrayal of the work, because, under prevailing conditions of inexcusable laxity, a great many things are omitted from the record which should be there, and the work done for the patient is probably of a higher grade than is indicated by the record. Careful case recording is not only admittedly necessary for diagnostic purposes, but it is essential for the training of the powers of observation of interns, who are students, and for future reference. Otherwise, no records would have been kept. They are either needed or not needed, and if needed, all data of any significance should be entered on them.

How is the workaday medical experience in our hospitals reflected in the light of an objective, dispassionate study of records? In many instances, the recording by the intern is either not supervised at all or is inadequately supervised. There is a certain amount of supervision on the part of the

lay file clerk, who sometimes sends a history back to the ward because of so many glaring omissions. The various diagnostic procedures are often neither dated nor signed. Instances are rare when it is easy to find out whether the provisional diagnosis by the intern was made on the first, second or third day after admission, an important fact to know, at least from an administrative point of view. The bedside notes seldom give a complete picture of the case. There is likewise hardly ever a note as to the condition of the patient on discharge, and the notes are rarely dictated by the visiting physician and, therefore, their value for scientific purposes is correspondingly diminished. On the records of operations, the anesthesia, pulse or blood pressure charts are seldom completely filled in. The descriptions of the operations are so brief as to be considered worthless in many instances. On one of the records there was found the following laconic account by an intern: "Operation performed with alacrity, dexterity and celerity." Sometimes the post-operative notes are missing, as is the pathologist's report. The laboratory work is often recorded in a fragmentary manner. The physician's orders covering the medication and diet are seldom found with the records. In case of consultations, the results of the examination are not always noted, nor are the findings of postmortems. Sometimes the necropsy report reaches the record room months after the necropsy has been performed. The final diagnosis is in many instances left unchanged after the necropsy has shown it to be erroneous. The case histories are usually filed in bound volumes and stored away in inaccessible places and seldom utilized.

The record room is in many instances too small for comfortable study. The cross index file is inadequate in most cases, and in some hospitals there is none at all. The nomenclature varies from institution to institution. The private patient records are worse than the ward records. In some of the hospitals, no records of the private patients are required for the central file, thus making the relationship of the patient to the hospital purely that of a hotel, although one of the modest requirements of the American College of Surgeons is that these records be a part of the hospital system the same as any other record.

Of only a few hospitals in this city can it be said that the records, nomenclature, filing, cross indexing and availability make them of perfect scientific value, immediate and future. In one hospital of very high standard the nomenclature used is so indefinite and all embracing that from a scientific standpoint it weakens otherwise good endeavor. In another of the well known special hospitals, the disease classification is almost entirely based on symptoms.

Now, it may be that there are numerous instances of cases in which the symptomatology and the course of the disease are so typical that there is not need of minutiae in recording; or the hospital may be of a type not aspiring to scientific distinction; a revision of procedure is, therefore, in order. In these cases a considerable saving in the time of physicians, nurses and clerks, as well as expense for paper and filing, can be effected by limiting the case record to a single card which would bring together in compact form the fragments now widely scattered through the several sheets composing an average hospital case record.

### ABSTRACT OF DISCUSSION

DR. GEORGE B. WALLACE, New York: In this extensive study of New York hospitals, made by Dr. Corwin and his associates, one of the features looked into was the data concerning the immediate care of the individual patient. Inquiry was directed to the recorded facts brought out in establishing the diagnosis—that is, the history and the physical and laboratory examinations—the course of the disease or injury, the treatment, and the condition of the patient at the time of

\* From the summary of study by the Public Health Committee of the New York Academy of Medicine of Hospital Conditions, in New York City.



discharge from the hospital. It was assumed that such an inquiry would give not an absolute but still a fairly definite idea of the character of the medical work done in the hospital.

As might be expected, the inquiry showed the most marked variation in the matter of patients' records. At the one extreme the record consisted of a filling out of the printed headings on the record sheet and practically nothing else but the nurse's notes. At the other extreme, the record contained the minute and detailed data that one associates with the accurate recording of facts in an experimental research. The records of the first type were almost useless except for the purpose of compiling the annual hospital reports, and those of the second type represented an amount of work not practicable in the ordinary hospital with its limited staff. Obviously, some mean between these extremes should be selected as a working basis.

If we consider the purpose in keeping a record for each patient, and the value of such a record, two points present themselves. The first has to do with the welfare of the patient. Certain procedures, such as the obtaining of a proper history, a thorough physical examination, and certain laboratory examinations, are necessary for a diagnosis, using this term in the broadest sense. Subsequent examinations are equally necessary for a knowledge of the course of the disease. In some hospitals, such facts as are necessary for an understanding of the case are either not recorded or are recorded only in part. For example, one record gave the diagnosis typhoid fever, with no statement of the presence or absence of an enlarged spleen or rose spots, no mention of a Widal test or of a blood or other culture. Another, containing the diagnosis chronic nephritis, had no urine examination recorded. Many similar examples could be cited. These omissions do not, of course, prove that the necessary examinations have not been made, but it is manifestly impossible for any one to carry accurately in his memory the history and the findings in each patient in a ward. Again, without a record, the following of the course of the disease and the recognition of complications becomes much more difficult. Further, in many hospitals there are sudden shifts in the staffs, and the newcomers, with inadequate past records to guide them, are often quite at sea regarding any particular case. In order to avoid mistakes, therefore, to be able quickly to refresh the memory on any question arising, a written record is indispensable.

The acceptance of a hospital appointment carries with it an obligation of the physician to do all he can for the welfare of the patients under his charge. Since the keeping of a proper record has a great deal to do with the patient's welfare, it becomes a duty to see that the proper record is kept. Failure to perform this duty renders the hospital open to the criticism that the medical work is not well done; and since so many hospitals are dependent on private contributions for their maintenance, it may well follow that discriminating donors will hesitate to make contributions to such a hospital.

The second point has to do with a further value of the record, namely, its educational value. An accurate recording of clinical facts instils a spirit of carefulness and thoroughness on the part of the recorder. There is another aspect. The advance of clinical knowledge is not dependent solely on laboratory research work. Our knowledge of disease is based largely on the careful observation of patients. This knowledge is far from complete. It is a function, or rather an obligation, of hospitals, with their wealth of clinical material, to add to it. One way of doing this might be to render the ward more accessible to those who wish to study certain diseases. Certainly, one way is to keep case records which are sufficiently comprehensive to have the desired facts clearly set forth. I think it is obvious that there can be no standard record for all hospitals and for all patients. Speaking generally, there is, however, this minimum requirement: (1) Every record should contain all the facts necessary for a diagnosis; here is included a complete history and physical examination, the latter showing not only what is abnormal but also what is normal, together with certain routine laboratory examinations, such as of the urine and blood. (2) Bed-side notes should be taken describing the progress of the case and a full account of any complications or unusual features

arising. (3) There should be an adequate statement of the therapeutic measures applied. (4) The nurse should take notes on pulse, temperature, etc. (5) Finally, there should be a statement of the condition of the patient on discharge, based either on the recorded facts or on a final general examination. With this minimum established, there is no limit to the additions that may be made in cases that are being especially studied. What should be kept in mind is that the record is to be made available for future study by some one who has never seen the patient, and who wants all the facts brought out concerning him. The conclusion is inevitable that poor records mean that the medical work is not first class.

In Bellevue we frequently encounter patients who show scars of previous operations, who give histories of definite illnesses or injuries, who tell of having had blood examinations or injections made. On inquiry it is often found that the patient is totally ignorant of what the operation was for or what was found, of what the illness was, or what the blood test showed. In the study of dispensaries made some years ago, there was shown a very small book, slipping easily into a vest pocket, which each patient in one of the dispensaries was given. This little book, which was to be carried or kept by the patient, contained very brief statements, over a physician's signature, concerning the complaint from which the patient suffered. It is worth considering whether it would not be advantageous for hospitals to see to it that each patient on discharge has some such similar book containing the proper entries. If this system became general, it would result in time in a large number of patients having an accurate record of their past medical history.

#### ADDITIONAL HOSPITALS APPROVED FOR INTERN TRAINING

Since the publication of the list of Hospitals Approved for Internships in the 1921 edition of the American Medical Directory and the supplementary list in *THE JOURNAL* of October 1, the following institutions have been added:

##### Section I: General Hospitals:

Alameda County Hospital, San Leandro, Calif.  
Mount Sinai Hospital, Chicago.  
Swedish Covenant Hospital, Chicago.  
Iowa Lutheran Hospital, Des Moines, Iowa.  
Highland Park General Hospital, Highland Park, Mich.  
Clearfield Hospital, Clearfield, Pa.  
Hamot Hospital, Erie, Pa.

##### Section III: Special Hospitals:

Cleveland Maternity Hospital, Cleveland.

#### California October Examination

Dr. Charles B. Pinkham, secretary, California State Board of Medical Examiners, reports the oral and written examination held at Sacramento, Oct. 17-20, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 38 candidates who took the physicians' and surgeons' examination, 29, including 4 osteopaths, passed, and 9, including 3 osteopaths, failed. One candidate took the drugless practitioners' examination and failed. One candidate took the osteopathic examination and failed. Six candidates took the examination for chiropody and passed. Ninety candidates were licensed, and 5 candidates were refused licenses by reciprocity. Two candidates were licensed on government credentials. Three candidates received osteopathic certificates by reciprocity. Four candidates received drugless certificates by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
College of Medical Evangelists.....	(1920)		88.2
College of Physicians and Surgeons, Los Angeles.....	(1920)		76.5
Leland Stanford Junior University.....	(1921)	85.2,	86.5
Northwestern University.....	(1920)	78.1, 82.4, (1921)	83, 85.5, 86.7
Rush Medical College.....	(1919)	86.1, (1921)	83.8
State University of Iowa College of Medicine.....	(1920)		78.1
University of Kansas School of Medicine.....	(1917)		83.7
University of Maryland.....	(1921)		75
University of Minnesota Medical School.....	(1921)		82
Washington University.....	(1921)		83
John A. Creighton Medical College.....	(1916)		79.2
Syracuse University.....	(1920)		88
University of Buffalo.....	(1920)		75.2
University of Cincinnati College of Medicine.....	(1921)	75,	83.5



University of Pennsylvania.....	(1916)	89.4
McGill University .....	(1899)	79.7
University of Jena.....	(1899)*	82
University of Budapest.....	(1916)*	76.2
Osteopaths .....	75, 77.3, 78, 78.8	

## FAILED

College of Physicians and Surgeons, Los Angeles.....	(1920)	68.9
College of Physicians and Surgeons, San Francisco....	(1918)	63.8
University of Cincinnati College of Medicine.....	(1921)	38.9
Aichi Prefecture Special Medical School.....	(1908)*	54.8
Chiba Special Medical School.....	(1918)*	53.8
Kyushu Imperial University.....	(1913)*	65.7
Osteopaths .....	67.9, 68.8, 69.7	

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Denver and Gross College of Medicine.....	(1910)	Colorado	
Georgetown University .....	(1904)	Dist. Colum.	
Medical Department of Columbian University.....	(1899)	Dist. Colum.	
Atlanta College of Physicians and Surgeons....	(1901)	Georgia, Missouri	
Chicago College of Medicine and Surgery.....	(1908)	Montana	
Chicago Homeopathic Medical College.....	(1899)	S. Dakota	
College of Physicians and Surgeons, Chicago.....	(1890)	Illinois	
(1903) Washington			
Hahnemann Medical College and Hospital of Chicago.....	(1911)	Illinois	
National Medical University, Chicago.....	(1899)	Missouri	
Northwestern University.....	(1882), (1906)	Illinois	
(1901), (1910) Washington			
Rush Medical College.....	(1894)	Michigan, (1897)	Iowa
(1900), (1907), Illinois, (1911) Iowa, Wisconsin			
Indiana University .....	(1919)	Indiana	
Medical College of Indiana.....	(1902)	Indiana	
Keokuk Medical College.....	(1895)	Illinois	
Keokuk Medical College, College of Phys. and Surgs....	(1905)	Iowa	
State University of Iowa College of Medicine.....	(1902)	Minnesota	
State University of Iowa College of Homeo. Med....	(1903)	Iowa	
(1905) South Dakota			
Kansas City Medical College.....	(1898)	Iowa	
Kansas Medical College, Topeka.....	(1906)	Kansas	
University of Kansas School of Medicine.....	(1917)	Kansas	
Kentucky University Medical Department.....	(1901)	Kentucky	
Louisville and Hospital Medical College.....	(1908)	Montana	
University of Louisville Medical Department.....	(1898)	Indiana	
Tulane University .....	(1916), (1920)	Louisiana	
Baltimore Medical College.....	(1896)	New Jersey, (1898)	Michigan
(1908) Maryland			
Johns Hopkins University.....	(1915)	New York, (1919)	Maryland
University of Maryland.....	(1902)	Minnesota	
College of Physicians and Surgeons, Boston.....	(1911)	Georgia	
Harvard University .....	(1915)	Missouri	
Tufts College Medical School.....	(1914)	Mass.	
University of Michigan Medical School.....	(1900)	Mass.	
(1904) Arizona, (1907) Michigan			
University of Michigan Homeopathic Medical School....	(1904)	New York	
Univ. of Minnesota Med. School....	(1907), (1914), (1920)	Minnesota	
Barnes Medical College.....	(1908)	Illinois	
Beaumont Hospital Medical College.....	(1892)	Missouri	
National University of Arts and Sciences.....	(1918)	Missouri	
St. Louis University School of Medicine.....	(1906)	Illinois	
(1918) Missouri			
University Med. College of Kansas City, Mo....	(1908), (1909)	Kansas	
John A. Creighton Medical College.....	(1912)	Nebraska	
Albany Medical College.....	(1909)	Connecticut	
Bellevue Hospital Medical College.....	(1896)	Washington	
Columbia Univ.....	(1895) Michigan, (1904) Illinois, (1905)	New York	
Cornell University .....	(1910)	New York	
Eclectic Medical College of the City of New York....	(1895)	New Hamp.	
Long Island College Hospital.....	(1882)	New York	
University and Bellevue Hosp. Med. College..	(1907), (1920)	New York	
University of Buffalo.....	(1902)	New York	
Ohio State University College of Medicine.....	(1917)	Ohio	
Western Reserve University.....	(1916)	Washington	
Jefferson Medical College.....	(1888) Utah, (1902)	Illinois	
(1906) Pennsylvania, Utah, (1908) Utah, (1910)			
Minnesota, (1914) Montana, Pennsylvania			
University of Pennsylvania.....	(1909)	Penna.	
Meharry Medical College.....	(1884), (1915)	Texas	
University of Nashville.....	(1899)	Kentucky	
University of Tennessee.....	(1915)	Louisiana	
University of Texas.....	(1920)	Texas	
Marquette University .....	(1914)	Wisconsin	
Laval University .....	(1906)	Maine	
Queens University .....	(1902)	Michigan	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
George Washington University.....	(1916)	U. S. Army	
Jefferson Medical College.....	(1905)	U. S. Navy	

\* Graduation not verified.

## Arkansas November Examination

Dr. Claude E. Laws, secretary, Arkansas Eclectic Board of Medical Examiners, reports the written examination held at Little Rock, Nov. 8-9, 1921. The examination covered 12 subjects and included 120 questions. An average of 75 per cent. was required to pass. Of the 3 candidates examined, 2 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Bennett College of Eclectic Medicine and Surgery.....	(1894)	84.3	
Kansas City College of Medicine and Surgery.....	(1921)	89.4	

## FAILED

Kansas City College of Medicine and Surgery.....	(1921)	*
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\* No grade given.

## Social and Industrial Medicine

## DEFECTIVE VISION AMONG INDUSTRIAL WORKERS

CAREY P. MCCORD, M.D.

AND

DONALD J. LYLE, M.D.

CINCINNATI

The workers of this country are distributed over no less than 8,000 separate and distinct occupations. As a part of the general program of making all work free from health and accident hazards, the greater number of these trades and professions have been carefully investigated to determine eye hazards. The dangers from mechanical injuries, burn, glare and eyestrain are well known to many industries. Satisfactory protective measures have been devised and are in common use. Although the worker's eyes are being protected against the hazards of his job, the reverse is not true; his job is not equally protected against the hazard of poor eyesight. While it is recognized that poor eyesight is of chief significance to the affected individual, from industry's point of view it also is to be recognized that poor eyesight constitutes an economic hazard on account of ruined work materials, low production, high accident frequency, and high absentee rates.

As evidence of the frequency of defective vision among industrial workers and as the basis for a plea of the routine examination of the eyes of all applicants for work, the findings from an examination of the employees of a small textile mill are here recorded.

## EYESIGHT AMONG TEXTILE WORKERS

The workers of this plant were engaged in the manufacture of cotton braids. The trade processes involved were such as to require good eyesight to obtain best results. The factory building was found to be well lighted both naturally and artificially. General conditions as to sanitation and safety were excellent. Sixty-two workers were examined, of whom 80 per cent. were women. The average age for both men and women was 39 years.

Although this report is limited to findings as to visual acuity, extended examinations were made of all special sense organs. It is noteworthy that from all persons in whom uncorrected defective vision existed, histories were obtained of repeated headaches, vertigos, gastro-intestinal disturbances, etc., attributable to poor eyesight. Our chief eye findings were:

1. Of the sixty-two persons examined, fifteen persons (24 per cent.) possessed vision of 20/20 or better.
2. The average vision (uncorrected) for the entire plant's personnel (sixty-two) was 20/61.
3. The average vision of all persons (forty-five) working without glasses was 20/34.
4. The average vision for persons (seventeen) wearing glasses at work was 20/36.
5. Eleven persons wearing glasses only for reading purposes at home were engaged at close work with an average vision of 20/55.
6. Twenty-two per cent. of persons working without glasses exhibited only 1/2 vision or less in one or both eyes.
7. Thirty-seven per cent. of all workers not wearing glasses would be distinctly benefited through the wearing of suitable glasses.
8. In those persons (seventeen) already wearing glasses, only four instances were noted wherein the defect was fully corrected. In 33 per cent. of instances, the vision was not at all improved by the glasses that had been supplied to them.



Reduced to the language of the manufacturer, this experience indicates that the work of this factory had been delegated to a group of workers nearly one-half blind. It is believed that this particular factory is not unusual in this respect. The bearing of this on the comfort, the health, the quantity and the accuracy of daily performed work, is patent. The industrial physician, in his dual function of serving the employee and the employer, advances the interests of each through the careful supervision of the eyesight of all workers.

## RECOMMENDATIONS

From our general experience in industrial medicine, we are prompted to make these recommendations:

1. Illuminometer measurements of the light provided for the several types of work in the factory; the provision and maintenance of that quantity of light optimal for the individual job; the elimination of glare.

2. The suitable testing of visual acuity of applicants for work, and of all employees at yearly intervals.

3. The referring of all persons exhibiting defects of 20/30 or greater to reliable ophthalmologists for corrections.

4. Selected job placement for all persons having defects of 20/25 or greater, for whom correction is not feasible or obtainable.

5. Payments for services of specialist and optician to be made by the factory management, arrangements being made with employee to deduct small weekly repayments from earnings. This procedure insures prompt remedying of the defect, is usually entirely satisfactory to the employee, and avoids services from incompetent sources.

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## Book Notices

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NOUVEAU TRAITÉ DE MÉDECINE. Publié sous la direction de MM. les Professeurs G.-H. Roger, F. Vidal, and P.-J. Teissier. Secrétaire de la Rédaction: Marcel Garnier. Fascicule VII: Avitaminoses, Maladies par agents physiques Troubles de la Nutrition. Price, 35 francs, net. Paris: Masson & Cie, 1921.

This volume of the new French System of Medicine contains a discussion of vitamins and avitaminoses, scurvy, pellagra, beriberi, venom poisoning, anaphylaxis, serum sickness, diseases caused by physical agents, and diseases of nutrition. Every subject is interestingly discussed; the interest, however, is evoked as frequently by disagreement or criticism as by agreement with the thoroughly French attitude of most of the articles. We wondered as we read whether science really is international: if science is greater than the boundaries of any country, this volume is, generally speaking, provincial. One misses, except in Roger's first article, any reference to English or American work on the deficiency diseases. No discussion of disturbances of nutrition seems complete without somewhere seeing the names of Rubner, Voit or Graham Lusk; yet the uninformed reader of this volume would conclude that all diabetic research emanated from France. We do not in the least wish to depreciate the value of French contributions; but we believe that modern medicine should reflect the spirit of the age and not of any particular place. Furthermore, the volume has two other defects which are common to other systems recently published. The bibliographic references are most unevenly distributed—in some articles, they are fairly complete, in others noticeable by their absence. Perhaps the war and its effects are responsible for the absence of much of the recent literature; but can the war be responsible for the absence in the pellagra article of any reference to literature published after 1915? The literature of gout is brought up to 1920. It is, of course, impossible to give a detailed review of each of the articles. The French point of view on the arthritic diathesis is thoroughly, if not convincingly expounded, by

Le Gendre, whose literary versatility is also given expression in some 330 total pages of discussion of all the troubles and diseases of nutrition! Obesity sounds romantic in these pages, but a searcher for fundamentals will find many gaps. Likewise, in diabetes mellitus, statements are made which are incomplete: for instance (p. 329), "The quantities of sugar found in the blood of diabetics . . . vary greatly . . . between 0.35 and 5.3 gm. per thousand." This surely is true; it is likewise true and of more importance to say that at certain times of the day, or during certain periods of treatment, the diabetic blood sugar may be perfectly normal. The same criticism may well be directed to the discussion of diabetic glycosuria (p. 341), which, according to Le Gendre, "is characterized by its *abundance* and its *constancy*" (italics in the French original). There are, however, some excellent phases of this volume which easily counterbalance the deficiencies pointed out. The clinical discussion throughout is of an unusual quality. The diabetic patient seems better understood than his intermediary metabolism. Clinical differentiations of patients with arthritis, gout and obesity are made which indicate unusual clinical opportunities. Treatment, too, receives a grand share; and it is gratifying to note that there are writers who do not treat the nutritional patient as a test tube chemical reaction.

LOS MECANISMOS DE CORRELACIÓN FISIOLÓGICA, ADAPTACIÓN INTERNA Y UNIFICACIÓN DE FUNCIONES. Por el Augusto Pi Suñer, Catedrático de Fisiología en la Universidad de Barcelona. Paper. Pp. 299. Barcelona: P. Salvat, 1920.

This is a compilation, by a noted Spanish professor and physiologist, of the eighteen lectures given by him in the University of Buenos Aires in 1919, on the physiologic unity and correlation of the organism. He takes up successively the conception of physiologic unity, micellar correlations and intercellular influences, chemical correlations, nervous correlations, internal reflexes, respiratory nerve supply, secretory reflexes, trophic sensitiveness, trophic reflexes, neurochemical correlations, agents involved in nutritive and functional control, metabolic adaptations, tonus and trophism, function and form, individualizing rôle of unification, nervous systematization and psychic individuality, unconsciousness and consciousness, life and knowledge. Supremely familiar with his subject, the author reviews its history from the Renaissance days when physiology was born and Paracelsus set down his hypothesis of an organic ruling principle, to the many recent physiologic investigations, including Pi Suñer's own, which have contributed to our knowledge of physiologic unity. He emphasizes the different points of view of physiologist and physician when approaching this subject, the first tending to pluralism through his study of diverse structural functions, and the latter to unity, as he observes the generalization of pathologic reactions. After considering the many data already available on coordinating mechanisms of the body and the profound solidarity existing in all living forms, the author leans to Baldwin's metaphysical explanation that all living beings are subject to the same laws as the universe as a whole. As a scientist, however, he rebels against this, stating that the duty of physiology is merely to study the mechanisms of coordination and function. The book in a way is a supplement of the author's previous work on "Functional Unity" and will prove interesting to all those engaged in this field.

LA DÉGÉNÉRESCENCE HÉPATO-LENTICULAIRE. Maladie de Wilson—Pseudo-Sclérose. Par H. C. Hall, Ancien Chef de clinique à l' "Hôpital de Bispebjerg", Copenhague. Préface du Professeur Pierre Marie. Paper. Price, 20 francs, net. Pp. 361, with 44 illustrations. Paris: Masson et Cie, 1921.

This is the most complete exposition of progressive lenticular degeneration (Wilson's disease) that has appeared. The literature is fully reviewed and the author adds a number of personal cases, one with complete necropsy and microscopic examination. He believes that Wilson's disease, pseudo-sclerosis (Westphal-Strümpel) and dystonia musculorum deformans (Oppenheim) probably are all the same disease, differing only quantitatively and from slight differences in location of the morbid process, and proposes to call the group hepatolenticular degeneration.



## Medicolegal

### Injunction Against Retired Physician Refused

(*Oates et al. v. Leonard (Ia.)*, 183 N. W. R. 462)

The Supreme Court of Iowa says that the defendant, who was conducting a small hospital and enjoyed a good practice in the town where he was located and in the surrounding country, in November, 1917, sold his business, including his hospital and good will, to the plaintiffs, and agreed in the written contract not to engage again in the practice of medicine or surgery in said town or surrounding country for a period of ten years. Thereafter, the defendant moved to his farm, some two or three miles from the town, and carried on the farm. He did not maintain an office or drug store after the execution of the contract. The contract was carried out in all respects, except that the plaintiffs contended that the defendant continued to attend women in childbirth and to write prescriptions for people in the territory surrounding the town; wherefore they asked that he be enjoined from practicing medicine. The defendant, answering, denied that he had violated the contract; denied that he had injured and wilfully made inroads into the professional practice and business of the plaintiffs; and denied that unless he was enjoined he would cause them loss or injury. He alleged the fact to be that he treated only emergency cases which had arisen during the absence of the practicing physicians in the community, or attended emergency cases which the resident physicians refused or were unable to treat; that the only cases in which he had appeared or acted as a physician or prescribed for patients were those in which the interest of humanity and the health of the public so demanded.

For the most part, the cases were attended and the prescriptions were given shortly after the defendant sold his practice. Some of the prescriptions were written without expectation of pay therefor. The plaintiffs contended that, if the defendant should prescribe and practice without making any charges, it would be the keenest kind of competition for them. This might be so under some circumstances. On the other hand, if such persons were indigent, as the evidence tended to show some of them were, there would be no prejudice in a financial way to the plaintiffs. One of the cases treated by the defendant was a person who was on a black list, whom the plaintiffs would not be required to treat, and, as the court understands the record, they would not have treated. In some of the childbirth cases complained of, women, after their pregnancy, and before the defendant sold out, had engaged the defendant, who had been their physician, to attend them. It was true, as contended by the plaintiffs, that no reservation was made in the contract of such cases; but the parties would not have gone to the plaintiffs in any event, at least some of them. Of cases treated by the defendant, twelve were complained of, mostly confinement cases. In some, if not all, of the confinement cases, he attempted to get them to employ the plaintiffs, but they insisted on his carrying out the agreement he had made with them. In other cases, he had treated the patients before and he testified that, according to the ethics of the medical profession, when a physician has once treated a case, he ought to carry it through. In one case, he refused to go, and told them to get somebody else, when in an hour he was called again and told that nobody else could be got, that all were busy with the flu. Of prescriptions, he wrote about 120 in three and one-half years after the contract was made, the most of them in the first year, only three of them being written in 1919, and the last one in February, 1920.

In affirming a judgment for the defendant and dismissing the plaintiff's petition, the supreme court holds that the contract involved was legal, but that under the entire record the equities were with the defendant. The court is not prepared to say that under such a contract a physician should be enjoined, as for a violation of the contract, when he acts in a emergency, and when another physician cannot be secured. It might be that, strictly speaking, all the transactions shown were not of that character, but for the most part they

occurred shortly after the defendant's retirement, and naturally patients would be more insistent at that time than they would later, and the transactions would grow less as time passed, while for the most part the transactions occurred a considerable time before this suit was brought, and it was apparent at the time of the trial that the defendant was not claiming the right to practice medicine.

### No Malpractice in Treatment of Knee and Abscesses

(*Hanson v. Harris (S. D.)*, 184 N. W. R. 262)

The Supreme Court of South Dakota, in reversing a judgment rendered for the plaintiff for damages for alleged malpractice, says that a wagon wheel ran over his right knee. A physician was called, but the knee soon became badly swollen, inflamed, and very painful. About two weeks after the injury the defendant was asked to treat the case. The defendant had a hospital, and had the plaintiff removed to it. The plaintiff had considerable fever. The defendant opened the knee joint and found a large cavity filled with thin sero-purulent pus. The cavity extended 5 inches (12.5 cm.) above the knee, and a number of abscesses containing pus had formed about the knee. The defendant made four incisions, drained and cleaned out the abscesses, and applied the proper drainage and irrigation. He inserted his finger through the incision into the cavity of the knee and found that there was no fracture of any of the bones; but the joint was badly infected and the bone had become infected to some extent. The swelling and the temperature went down, and about ten days or two weeks after the plaintiff entered the hospital, the defendant injected into the joint, abscesses, and pus cavities "Beck's paste," a thin salve composed of one part powdered bismuth and two parts petrolatum. Soon afterward, another abscess formed down on the calf of the leg, but soon healed, after being opened, drained, and irrigated. After he had been at the hospital about five or six weeks, the plaintiff was discharged as cured. His knee was nearly stiff and so bent that, when he stood up, only his toes touched the ground. Eight months later, he went to another hospital, where the knee joint was opened, and necrosis of the bones of the joint, especially of the lower end of the femur, was found. Small quantities of Beck's paste were also found in the joint; and a roentgenogram taken some months later showed that some of the paste still remained in the cavities formed by the abscesses.

After a thorough analysis of the testimony, the court fails to find any facts that warranted the conclusion that the defendant was negligent or unskilful in his treatment of the plaintiff's injury, or that any other course of treatment known to the medical profession would have produced better results. The plaintiff had suffered much pain, and no doubt would continue to suffer great pain, and much inconvenience from the condition of his leg. No doubt his condition appealed strongly to the sympathies of the jury, as it certainly did to the sympathies of this court; but that did not justify a verdict against the defendant. The mere fact that the plaintiff's limb was not restored to its natural condition and usefulness did not prove, nor even imply, that the defendant was negligent or unskilful. Physicians and surgeons are not to be held for results, but only for the kind of service rendered by them.

The purpose of taking a roentgenogram of an injury being to ascertain facts not otherwise ascertainable, and the only fact that it was contended could have been ascertained in this case by taking one being whether there was any fracture, the defendant was not negligent in not taking a roentgenogram at the time of his first treatment, as it was wholly unnecessary for the purpose of ascertaining whether there was a fracture, because the defendant had opened the joint, inserted his finger, and ascertained that there was no broken bone. It was argued that the use of Beck's paste was unnecessary, and under the circumstances was improper treatment, on the theory that the paste was intended to be applied to, and could properly be used only in cases of chronic or tubercular abscesses, while the abscesses in this case were acute ones. But the defendant appeared to have used the paste in the exercise of his best judgment that it was necessary to hasten the healing of the abscesses about the knee. Nor does the



court agree with the contention that the defendant should have kept the leg in splints, on the theory that the knee would be entirely stiff, and that it would be better to have it straight than bent. There was a splint on the leg for some time, but the defendant believed that the knee joint would not be entirely stiff after it healed, and the splint was removed.

#### Misrepresenting Condition Does Not Preclude Compensation —Evidence from Conjoint Case

(*Kelty v. Fisher et al. (Ore.)*, 199 Pac. R. 188)

The Supreme Court of Oregon says that Dr. Kelty was sent for by one Clay Fisher to treat his brother, Johnnie B. Fisher, and his half-brother, George M. Syron, who had influenza. Both patients died. The physician presented to the administrators of the estate of each a claim for medical services, and finally got a judgment in each case for \$175, from which the administrators appealed. The case here before the supreme court was that of the claim against the Fisher estate. The administrators asked that the jury be instructed:

"It is the duty of a physician to disclose to the relatives of a patient who employ him to treat the case, when called on by such relatives to state to them the true condition of the patient, full, accurate, and complete information as to the condition of the patient. If he should fail in this duty, and should inform such relatives that the patient was not in a dangerous or serious condition, when in fact and in truth such patient was in a dangerous and serious condition, the physician would be guilty of such carelessness and negligence as to preclude him from receiving any pay for his services in case of the death of the patient. If you should believe in this case, from a preponderance of the evidence, that Dr. Kelty informed Clay Fisher, and led him to believe, that the patients, Johnnie B. Fisher and George W. Syron, were not dangerously sick, that there was no occasion for getting another doctor, and that he would be able to get them up from their sickness, when in truth and in fact they were in a dangerous condition, and he knew and considered them in a dangerous condition at the time such representations were made, then and in that event he would not be entitled to any fee whatever, and it would be your duty to return a verdict for the appellants."

The trial court refused to give that instruction, and the supreme court says that the mere reading of the requested instruction demonstrated the correctness of the view taken by the trial court. If the court had submitted the requested instruction to the jury, they would have been required to return a verdict for the administrators, if they found merely that the physician believed the two patients were dangerously sick, and, so believing, told Clay Fisher that the two men were not dangerously sick; and the jury would have been required so to find for the administrators even though they might also have found that the physician exercised the very highest degree of care and skill in the treatment of the patients, and even though it was impossible to have done more than was done for them.

The supreme court, however, reverses the judgment in this case and remands the cause for a new trial on the ground that the administrators were entitled to show the facts and circumstances attending the Syron case, and it was prejudicial error to refuse the evidence which the administrators offered concerning the treatment of Syron and the symptoms manifested by him, the two cases being so intimately connected as practically to constitute one case, or, on the authority of some precedents, to make the medical treatment given to Syron and the symptoms manifested by him a part of the *res gestae*, or essential circumstances, of the Fisher case. Therefore, when the administrators contended that the physician gave to Johnnie B. Fisher a hypodermic injection of morphin, which caused the death of the patient, while the physician insisted that if he gave a hypodermic injection of any medicine at all it was of camphorated oil, a heart stimulant, it was competent for the administrators to show, if such were the facts, that the symptoms manifested by Syron were exactly like those manifested by Johnnie B. Fisher, and that the physician stated before giving a hypodermic injection to Syron that he was going to give him morphin.

#### Death of Physician from Septicemia After Injury

(*Rorabaugh v. Great Eastern Casualty Co. (Wash.)*, 200 Pac. R. 587)

The Supreme Court of Washington, in affirming a judgment for \$1,560 in favor of the plaintiff as the beneficiary of a policy of accident and sickness indemnity, says that the insured was a practicing physician and surgeon. On the fifth day of the month of his death, he performed a surgical operation on one of his patients. On the afternoon of the 6th he examined and dressed the wound resulting from the operation. Within a very few hours thereafter, while moving an old and rusty bed spring, he slightly cut one of his fingers by coming in contact with the end of one of the wires. During the following day, the 7th, he complained of not being well, and of having considerable pain in his right arm. His condition continued to grow worse, until on the 9th he was required to take to his bed, where he remained until his death, about a week afterward. He died of septicemia. Prior to the cutting or scratching of his finger, he was in the best of health. The testimony of the experts and others was strongly to the effect that the inoculation of his finger with the germs which caused the blood poisoning was coincident with the cutting of the finger, and the jury returned a special verdict so finding. The defendant contended that there was not sufficient testimony concerning the cause of the death of the insured to justify the case being sent to the jury, but the court is unable to see on what ground that contention could stand. A number of witnesses testified that the immediate cause of death was blood poisoning, and the immediate cause of the blood poisoning was the cut on the finger, and that the cutting of the finger and its inoculation were simultaneous. Under the evidence, the direct cause of death (within the terms of the policy) was the injury to the finger. The testimony clearly showed that the death was caused "directly, solely, and independently of all other causes by external, violent, and accidental means," and was not caused "wholly or in part, directly or indirectly, by any disease, defect or infirmity." A special provision of the policy was that, in the event of death resulting from any of the following causes, the company's liability should be one month's indemnity: injuries intentionally inflicted on the insured by any other person; unnecessary exposure to danger, riot, strike or evading arrest; gas vapor or poison; contact with poisonous substances, blood poisoning, or septicemia, or due partly to injury and partly to disease or bodily infirmity. The court, however, is of the opinion that that provision had reference solely to death resulting from the causes therein mentioned, including blood poisoning or septicemia, and did not apply to an injury caused directly, solely, and independently of all other causes by external, violent and accidental means. Here the death was the direct result of the injury to the insured's finger, and not the direct result of blood poisoning. Furthermore said provision had to do only with indemnity concerning loss of time, and was not consistent with the indemnity to be paid in the event of death directly resulting from external, violent, and accidental means. In construing that portion of the policy which provided insurance against bodily injury caused by external, violent, and accidental means, "and which shall from the date of the accident result in continuous disability," the court holds that the policy evidently did not mean that there must be a disability from the very moment of injury, because in an injury of the character here involved that would be impossible. There was in this case a disability within the fair meaning and construction of the quoted words.

## Society Proceedings

### COMING MEETINGS

Conference on Medical Education, Hospitals and Public Health, American Medical Association, Chicago, March 6-10.  
Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.  
Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.  
South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.  
New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Diseases of Children, Chicago

February, 1922, 23, No. 2

- \*Is There More than One Kind of Rickets? P. G. Shipley, E. A. Park, E. V. McCollum and N. Simmonds, Baltimore.—p. 91.
- \*Value of Routine Use of Colloidal Gold Reaction in Acute Epidemic Poliomyelitis. J. C. Regan and H. Cheney, New York.—p. 107.
- \*Clinical Value of Intraperitoneal Injections of Salt Solution. J. C. Gittings and J. D. Donnelly, Philadelphia.—p. 124.
- Hematomas in Heart Valves of Calves. L. Florence, Princeton, N. J.
- \*Effect of Tonsillectomy on Nutrition in Twelve Hundred Children. A. D. Kaiser, Rochester, N. Y.—p. 139.
- \*Case of Gangrene of Feet Following Diphtheria. M. B. Gordon and B. Newman, Brooklyn.—p. 142.
- Résumé of Literature (1920) on Tuberculosis in Children. M. Michael, Chicago.—p. 146.

**Studies in Rickets.**—The experiments reported on by Shipley et al make it clear that when the rat is deprived of certain active light rays and an unidentified factor contained in cod liver oil, a pathologic condition corresponding in all fundamental respects to rickets in human beings can be produced through the diet in two ways: (1) by diminishing the phosphorus and supplying the calcium in optimal quantities or in excess, or (2) by reducing the calcium and maintaining the phosphorus at a concentration somewhere near the optimum. The authors believe it to be certain that in the human being, similarly deprived of light and the unidentified factor, it would also be possible to produce true rickets through an adjustment of the calcium and phosphorus of the diet in the two ways mentioned. As the result of their experiments they were led to believe that there are two main kinds of rickets. One is characterized by a normal or nearly normal blood calcium and a low blood phosphorus (low phosphorus rickets) the other by a normal or nearly normal blood phosphorus but a low blood calcium (low calcium rickets). The authors suggest the possibility that there may be a true renal rickets and that the rickets accompanying the alimentary anemias may represent a somewhat different kind of disturbance in metabolism from that which is present in the ordinary forms of the disease.

**Value of Colloidal Gold Test in Poliomyelitis.**—The colloidal gold test was performed by Regan and Cheney on seventy-four spinal fluids obtained from twenty-one cases of acute epidemic poliomyelitis. The fluids were examined at intervals varying from the fourth to the one hundred and twenty-third day of the disease. The predominant type of the malady was the myelitic with, however, a high proportion of cases presenting symptoms of moderate or marked polyneuritis. The curves obtained have been classified according to the week of the disease in which the spinal fluids were taken. The authors are strongly inclined to believe that there is a relationship between the duration of the positive colloidal gold curve and the acute inflammatory stage of the malady, so that when the reduction of gold chlorid becomes normal, the acute period of the disease is over. If this is so, the reaction should be of value in determining when the rest of the acute period may be terminated, and the more energetic treatment by electricity and massage, etc., of the subacute stage begun. With the gradual subsidence of the colloidal gold curve there is usually a corresponding improvement in the patient's general condition, paralysis and meningeal symptoms. No close relationship was found, except in a general way, between the cytology and chemistry of the spinal fluid and the gold chlorid reaction. As the very acute symptoms subsided, the spinal fluid, in its chemical and cytologic contents, returned to normal. So, in most cases, does the gold chlorid curve return to normal, but more slowly, usually still remaining elevated at a period (eighth week) when no other characteristic pathologic signs are to be found in the cerebrospinal fluid. The average curve in the fatal cases, although showing a tendency to produce greater reduction and to be prolonged slightly into the higher dilutions, did not differ sufficiently from that obtained in the nonfatal cases in the

first few weeks as to make the test of value in prognosis. In the few instances in which poliomyelitis may be confused with epidemic encephalitis, the colloidal gold reaction may be of some use in differential diagnosis. To realize the full value of this reaction, it must be taken into consideration with the history, physical findings and other laboratory data.

**Intraperitoneal Injection of Salt Solution.**—The forced ingestion of water by nasal tube, Gittings and Donnelly believe, deserves a more extensive trial in cases of diarrhea as a preventive, before anhydremia develops, and in conjunction with intraperitoneal injections, as a curative measure. Other routes for the introduction of water rarely will be needed. Intraperitoneal injections should not exceed 300 c.c.; 150 c.c. administered more frequently, if necessary, is a safer procedure for infants weighing less than 4,000 gm. Puncturing the peritoneal cavity seems to be a safe procedure provided the bladder is empty, distention is not extreme and a rigidly aseptic technic is employed. There is need for a reliable clinical measure of the degree of dehydration. The lack of resiliency in the skin and subcutaneous tissues seems to give a reasonably accurate indication, but it should be controlled carefully by tests of the blood volume, blood flow and protein concentration.

**Effect of Tonsillectomy on Nutrition.**—Among 1,200 children operated on for diseased tonsils and adenoids there was 34 per cent. malnutrition (7 per cent. or more underweight). Reexamination from nine to twelve months later showed a reduction of malnutrition to 15.9 per cent. Kaiser asserts that diseased tonsils and adenoids do not necessarily impair nutrition as evidenced by 66 per cent. of children showing normal weight according to height. Diseased tonsils and adenoids are undoubtedly a factor in malnutrition, as evidenced by the marked improvement in 219 children of the group.

**Gangrene of Feet Following Diphtheria.**—This case, like others in the literature, occurred in the hypertoxic type of diphtheria in which symptoms of cardiac insufficiency had already developed and after the local throat symptoms had disappeared. The course was the typical one of myocarditis—sluggish circulation, low blood pressure and insufficient collateral circulation. Gordon and Newman find it difficult to state positively whether the condition was due to a local thrombus as the result of a local acute arteritis or to a migrating clot originating in the heart. Surgical intervention was postponed in this case because the authors felt that the child's general condition at the onset was too critical to subject him to any operative procedure. Later, when his condition had improved and the line of demarcation had made its appearance, it was thought best to permit a natural amputation in the hopes of saving a larger portion of his foot. The results amply justified waiting.

#### American Journal of Hygiene, Baltimore

January, 1922, 2, No. 1

- Investigations on Control of Hookworm Disease. II. Apparatus for Isolating Infective Hookworm Larvae From Soil. W. W. Cort, J. E. Ackert, D. L. Augustine and F. K. Payne, Baltimore.—p. 1.
- Id. III. Finding Unsheathed Hookworm Larvae in Soil. W. W. Cort, D. L. Augustine, J. E. Ackert, F. K. Payne and G. C. Payne, Baltimore.—p. 17.
- \*Id. IV. Relation of Domestic Chicken to Spread of Hookworm Disease. J. E. Ackert, Baltimore.—p. 26.
- \*Id. V. Domestic Pig and Hookworm Dissemination. J. E. Ackert and F. K. Payne, Baltimore.—p. 39.
- \*Relation Between Fatigue and Susceptibility of Rats Toward a Toxin and An Infection. E. H. Oppenheimer and R. A. Spaeth, Baltimore.—p. 51.
- \*Bactericidal Action of Rabbit Bile on Certain Strains of Streptococci. R. L. Stone, Berkeley, Calif.—p. 67.
- Results of Hookworm Disease Prophylaxis in Brazil. W. G. Smillie, São Paulo, Brazil.—p. 77.

**Chickens Control Hookworm Disease.**—The results of a series of experimental feedings made by Ackert indicate that the great majority of hookworm eggs ingested by chickens fail to produce infective hookworm larvae. This failure is attributed, in part, to breaking of eggs in the gizzard, injury from urine in the feces, and to malnutrition of the larvae in the excrement. Dangerous infective spots may be established around drinking receptacles by chickens that have swallowed



hookworm eggs day after day. Hookworm eggs deposited out of doors under conditions unfavorable for development can be carried by chickens to favorable environments. Human stools voided in unfrequented places can be transported by chickens to the door yard which is traversed by barefooted persons. Newly hatched hookworm larvae can pass through the digestive tracts of chickens apparently uninjured. Therefore, chickens are more beneficial than harmful in the control of hookworm disease.

**Pigs Disseminate Hookworm Disease.**—The results of tests made by Ackert and Payne indicate that a high percentage of the hookworm eggs ingested by pigs are able to produce infective larvae, and that the free-range pig is an important factor in the dissemination of human hookworm eggs.

**Fatigue Increases Resistance to Toxin.**—Oppenheimer and Spaeth found that fatigue, artificially induced in white and hooded rats by forcing them to run in motor driven drums, apparently tends slightly to increase their resistance to subcutaneous injections of tetanus toxin. This occurs whether fatigue precedes or follows the injection of the toxin. Fatigue, both preceding and following intraperitoneal injections of Type I pneumococcus, definitely increases the resistance of the white and hooded rats to that infection. These results contradict the popular belief that a fatigued individual is more susceptible to disease (tetanus toxin and pneumococcus infection) than a nonfatigued individual.

**Rabbit Bile Bactericidal for Certain Streptococci.**—Stone's observations have shown that rabbit bile has a definite bactericidal effect on certain strains of streptococci and is ineffective toward others. The pyogenes group of streptococci is particularly susceptible, all the strains tested (twenty-eight) being killed by rabbit bile. Other varieties of hemolytic streptococci tested (nineteen) were unaffected, except one. There is no bactericidal or inhibitory effect on any of the nonhemolytic streptococci. Some strains of *S. viridans* are killed, others are not affected by rabbit bile. Horse, sheep, beef, dog, cat, turtle, guinea-pig and human bile exert no inhibitory action on any of these strains of streptococci. The other ordinary human pathogens, with the exception of the pneumococcus, are unaffected. The action on streptococci is, however, not lytic. This bactericidal substance in rabbit bile is not absorbed from the bile by the bacteria. It can be used repeatedly. Repeated autoclaving does not diminish this bactericidal power. This bactericidal substance is located in the alcohol soluble, ether insoluble fraction of rabbit bile.

### American Journal of Obstetrics and Gynecology, St. Louis

January, 1922, 3, No. 1

- \*End Results of Amputation of Cervix and Trachelorrhaphy. R. M. Rawls, New York City.—p. 1.  
Diabetes and Pregnancy. J. N. Bell, Detroit.—p. 20.  
Heart Disease in Pregnancy. W. G. Dice, Toledo, Ohio.—p. 24.  
Breast Physiologically and Pathologically Considered with Relation to Bleeding from Nipple. G. K. Dickinson, Jersey City.—p. 31.  
Slaughter of Innocents. P. Findlay, Omaha.—p. 35.  
Legal Aspects of Abortion. E. F. Oakley, St. Louis.—p. 37.  
Treatment of Abortion. H. W. Yates and B. Connelly, Detroit.—p. 42.  
Addition to Obstetric Armamentarium. C. E. Ziegler, Pittsburgh.—p. 46.  
Teaching Undergraduate Obstetrics. A. M. Mendenhall, Indianapolis.—p. 53.  
\*Method of Delivery in Normal Cases. M. A. Tate, Cincinnati.—p. p. 61.  
Choice of Methods for Making Labor Easy. A. H. Bill, Cleveland.—p. 65.  
Case of Hemimelus or So-Called Congenital Amputation. H. Bailey, New York City.—p. 72.

**End-Results of Cervix Operations.**—Among 6,053 gynecologic patients whose case history is analyzed by Rawls, 11 per cent. had cervical operations. Amputation of the cervix was performed 461 times and trachelorrhaphy 232 times. Two thirds of the amputations and seven eighths of the trachelorrhaphies were done on women under 40 years of age, and were about equally combined with vaginal plastic and abdominal operations. This series is composed of 305 private cases and 394 ward cases performed by forty-one individual operators. Two hundred and eleven, or approximately 30 per cent., have been followed from one to five years. The technique and indications for operation were those of Emmet more or less faithfully carried out. Improvement in

the general health occurred in more than 82 per cent. of the cases for each operation but was greater after amputation of the cervix. Amputation of the cervix was more efficient than trachelorrhaphy in the cure of leukorrhea and dysmenorrhea but was more often the cause of these symptoms in cases previously free of vaginal discharge and menstrual pain. Voluntary sterility was increased by cervical and vaginal plastic operations, but, all things being equal, there was 11 per cent. greater sterility after amputation of the cervix than after trachelorrhaphy. Amputation of the cervix is more often than trachelorrhaphy followed by interruption of labor before full term but is no more liable to end in premature labor than trachelorrhaphy. Abortion is more frequent after amputation in proportion to the number of high amputations. Dystocia is greater after trachelorrhaphy both as to the number of operative deliveries and of difficult spontaneous labors.

**Method of Delivery in Normal Cases.**—The method presented by Tate, as described in one case cited, is as follows: The patient entered the hospital with the os dilated to the size of a silver half dollar. She was prepared obstetrically and taken to the delivery room at 10 p. m. Ether was administered to the surgical degree; the bladder was catheterized, and the specimen sent to the laboratory. The gloved hand, anointed with sterilized petrolatum was introduced into the vagina, one finger at a time, following the ironing-out method. The thin and easily dilatable os and vagina were thoroughly stretched by 10:30 p. m. Anesthesia was withdrawn at 10:32 p. m. The patient was allowed to recover partially from the anesthetic by 10:40 p. m. One-half c.c. of pituitary extract was now given, and the membranes ruptured. Regular pains ensued shortly. The patient was in a drowsy state and did not seem to suffer much. The child was delivered at 11:10 p. m., just one hour and ten minutes after the patient's entrance into the delivery room. The child weighed 8 pounds. There were no lacerations. The salient features of the method are: (1) Patient must be in labor, cervix obliterated, and os dilated to at least the size of a silver half dollar; (2) surgical anesthesia; (3) bladder catheterization; (4) complete manual dilatation of the vagina and cervix; (5) patient allowed to regain partial consciousness; (6) pituitary extract, 0.5 c.c. to be repeated once if the pains are not efficient in half an hour; (7) membranes ruptured.

### Journal of Biological Chemistry, Baltimore

January, 1922, 50, No. 1

- Preparation of Flexible Collodion Membranes. J. M. Looney, Boston.—p. 1.  
Studies on Experimental Rickets. XII. Is There a Substance Other Than Fat-Soluble A Associated with Certain Fats which Plays an Important Role in Bone Development? E. V. McCollum, N. Simmonds, P. G. Shipley and E. A. Park, Baltimore.—p. 5.  
Biogenesis of Oil of Peppermint. R. E. Kreiners, Madison, Wis.—p. 31.  
Chemistry of Oxidation of Sulphur by Micro-Organisms to Sulphuric Acid and Transformation of Insoluble Phosphates into Soluble Forms. S. A. Waksman and J. S. Joffe, New Brunswick, N. J.—p. 35.  
Changes in Refractive Index of Blood Serum of Albino Rat with Temperature. F. S. Hammett and I. Teller, Philadelphia.—p. 47.  
Colorimetric Determination of Uric Acid. J. L. Morris and A. G. Macleod, Cleveland.—p. 55.  
\*Studies on Uric Acid of Human Blood. J. L. Morris and A. G. Macleod, Cleveland.—p. 65.  
\*Experimental Rickets in Rats. III. Prevention of Rickets in Rats by Exposure to Sunlight. A. F. Hess, L. J. Unger and A. M. Pappenheimer, New York.—p. 77.  
\*Some Human Digestion Experiments with Raw White of Egg. M. S. Rose and G. MacLeod, New York.—p. 83.  
\*Modification of Folin's Colorimetric Method for Determination of Uric Acid. H. Jackson, Jr., and W. W. Palmer, Baltimore.—p. 89.  
Amino-Acids in Nutrition. IV. Modified Biologic Method of Studying Amino-Acid Deficiencies in Proteins. Cystin as Growth-Limiting Factor in Proteins of Georgia Velvet Bean (*Stizolobium Deeringianum*). B. Sure, Fayetteville, Ark.—p. 103.  
Organic Constituent of Tube of *Mesochaeopterus Taylori*, Potts. C. Berkeley, Nanaimo, B. C.—p. 113.  
Curve of Sugar Excretion in Severe Diabetes. H. Felsher, Chicago.—p. 121.  
Studies on Proteinogenous Amines. XII. Production of Histamin and Other Imidazoles from Histidin by Action of Micro-organisms. M. T. Hanke and K. K. Koessler, Chicago.—p. 131.  
Id. XIII. On Electronic Interpretation of Certain Biochemical Phenomena. M. T. Hanke and K. K. Koessler, Chicago.—p. 193.  
Id. XIV. Microchemical Colorimetric Method for Estimating Tyrosine, Tyramine, and Other Phenols. M. T. Hanke and K. K. Koessler, Chicago.—p. 235.



Id. XV. Quantitative Method for Separation and Estimation of Phenols Including Phenol, *o*-, *m*-, and *p*-Cresol, *p*-Oxyphenylacetic, *p*-Oxyphenylpropionic, and *p*-Oxyphenyllactic Acids, Tyrosine and Tyramine. M. T. Hanke and K. K. Koessler, Chicago.—p. 271.  
Solubility of Carbon Monoxid in Serum and Plasma. H. R. O'Brien and W. L. Parker, Pittsburgh.—p. 289.

**Second Form of Uric Acid.**—By means of a new method of extraction Morris and Macleod were able to isolate a second form of uric acid which the Folin-Wu method failed to include. That it is some form of uric acid rather than any other substance which reacts colorimetrically follows of necessity from the facts presented that: (a) it carries successively through the precipitations with zinc salt and silver magnesium mixture, which are chemically different but equally characteristic; (b) it then precipitates quantitatively upon acidification of its solution in the form of crystals which cannot be differentiated from those of uric acid; (c) it is changed quantitatively at room temperature in contact with potassium oxalate to a form readily precipitated and extracted by the usual Folin-Wu procedure; and (d) the new method gives a value for this second form, as well as the first, in spite of the exclusion of all substances so far tried from the multiplying effect of the cyanid on the color. Further work to determine the chemical nature of the second form of uric acid is now being done.

**Sunlight in Rickets.**—Rachitic lesions which develop regularly in rats on a diet adequate in calcium but low in phosphorus, were prevented by Hess and his associates by short exposures to direct sunlight. This protection is equivalent to the addition of at least 75 mg. of phosphorus to the diet in the form of basic potassium phosphate.

**Digestibility of Raw White of Egg.**—Rose and MacLeod conducted experiments on ten healthy subjects who took daily from ten to twelve whites of eggs as a part of a simple mixed diet, first cooked, in a threeday period, then raw for the same length of time. In no case was there any sign of indigestion, such as discomfort or diarrhea, though one of two subjects found them slightly laxative. The cooked eggs were uniformly well digested. On the whole the raw whites were well utilized, the average difference between the cooked and raw being only 4 per cent. for the protein of the whole ration or 5.5 per cent. for the egg white protein alone, in favor of the cooked. The differences between the cooked and the raw whites varied with the mode of preparation, those beaten light being the best utilized, and those taken in the natural state least well absorbed.

**Modification of Folin's Method to Determine Uric Acid.**—In an effort to find the cause for the troublesome precipitate developing in the colored solution, Jackson and Palmer found that if Folin's uric acid reagent were dialyzed in heavy parchment membranes against large amounts of tap water, until all the free acid was gone, and the solution so dialyzed was evaporated to dryness, a reagent was obtained which, in the presence of uric acid and an excess of sodium cyanid gave a very intense color and a more or less dense flocculent precipitate. The latter did not alter in amount or character over a period of twenty-four hours or more. If, on the other hand, Folin's uric acid reagent were boiled cautiously to dryness without dialysis, a reagent was obtained, which, in the presence of uric acid and an excess of sodium cyanid gave the same intense color, but also a dense crystalline precipitate in the course of from three to five minutes. This last reagent, which is termed sodium phosphotungstate "B" when mixed with the dialyzed sodium phosphotungstate "D" will cause dissolution of the flocculent precipitate and at the same time, no crystalline precipitate will develop unless too much "B" is added. The proper mixture of these two salts results in a reagent which, under conditions of the determination, gives a color nearly five times as intense as that given by Folin's procedure and no precipitate results.

### Journal of Experimental Medicine, Baltimore

February, 1922, 35, No. 2

Experimental Generalized Analgesia After Exposure to Some War Gases. J. Auer, New York.—p. 97.

\*Experimental Studies on Etiology of Typhus Fever. II. Survival of Virus in Aerobic and Anaerobic Culture Mediums. P. K. Olitsky, New York.—p. 115.

\*Id. III. Filtration Experiments. P. K. Olitsky, New York.—p. 121.  
Do Species Lacking a Gallbladder Possess Its Functional Equivalent? P. D. McMaster, New York.—p. 127.  
Sources of Antibodies Developing After Repeated Transfusion. O. H. Robertson and P. Rous, New York.—p. 141.  
Studies on Pneumonic Exudate. V. Relation of Pneumonic Lung Protease Activity to Hydrogen Ion Concentration; Origin of Enzyme. R. N. Nye, Boston.—p. 153.  
Transmission of Agglutinins of *B. Abortus* from Cow to Calf in Colostrum. R. B. Little and M. L. Orcutt, Princeton, N. J.—p. 161.  
\*Erythropoietic Action of Germanium Dioxid. F. S. Hammett, J. E. Nowrey, Jr., and J. H. Muller, Philadelphia.—p. 173.  
Phenol Red and Brom-Cresol Purple as Indicators in "Bacteriologic Examination of Stools. A. M. Chesney, St. Louis.—p. 181.  
Roentgen-Ray Intoxication. I. Unit Dose Over Thorax Negative—Over Abdomen Lethal. Epithelium of Small Intestine Sensitive to Roentgen Rays. S. L. Warren and G. H. Whipple, San Francisco.—p. 187.  
Id. II. Study of Sequence of Clinical, Anatomic and Histologic Changes Following Unit Dose of Roentgen Rays. S. L. Warren and G. H. Whipple, San Francisco.—p. 203.  
Id. III. Speed of Autolysis of Various Body Tissues After Lethal Roentgen-Ray Exposures. Remarkable Disturbance in Epithelium of Small Intestine. S. L. Warren and G. H. Whipple, San Francisco.—p. 213.  
\*Renal Function in Roentgen-Ray Intoxication. Resistance of Renal Epithelium to Direct Radiation. I. McQuarrie and G. H. Whipple, San Francisco.—p. 225.  
\*Relation of Hypophysis to Antibody Production. E. C. Cutler, New York.—p. 243.  
\*Studies on Experimental Measles. I. Effects of Virus of Measles on Guinea-Pig. C. W. Duval and R. D'Aunoy, New Orleans.—p. 257.  
Hemolysis of Erythrocytes in Contact with Glass. W. O. Fenn, Boston.—p. 271.

**Etiology of Typhus.**—The experiments reported on by Olitsky show that the typhus virus, found in the blood of guinea-pigs during the height of typical experimental typhus fever, does not survive at 37 C. in anaerobic mediums for as long a period as in the same medium under aerobic conditions. In mediums from which oxygen is excluded, the viability period is from twenty-four to forty-eight hours; in the same medium having no barrier to atmospheric oxygen, the period is usually five days, in one instance, three days. The dead virus fails to induce not only the typical experimental disease but also an immunity to further injections of typhus virus.

**Etiology of Typhus.**—Olitsky shows that the typhus virus in the tissues of the guinea-pig during the height of reaction to the experimental disease does not lose its infecting power when the cells of the birth or of the spleen are disintegrated by repeated freezing and thawing, or by freezing and desiccating, or by crushing by mechanical means, or by grinding into a homogeneous pulp with sand. The virus after such treatment is as actively infective as in the same tissue not subjected to the disintegrating influences. The possibility exists, therefore, of an extracellular condition of the typhus virus. Fourteen attempts to filter through Berkefeld V and N candles the virus contained in the disintegrated tissue have all resulted in failure.

**Erythropoietic Action of Germanium Dioxid.**—Injections of a sterile 0.4 per cent. solution of germanium dioxid were followed by a marked and sustained rise in the number of erythrocytes in the blood which ranged from one to nearly five millions. The effect is quick in making its appearance. The rise in the red cell count was found to occur within a week, and after but two injections of the salt. Indications were obtained that germanium dioxid tends to increase the coagulability of the blood. Necropsy findings showed color changes in the liver and bone marrow.

**Effect of Roentgen Ray on Renal Function.**—Experiments made by McQuarrie and Whipple give no support to the current belief that a roentgen-ray nephritis may be produced by direct or indirect action of the hard roentgen rays. Moderate doses of roentgen rays given repeatedly over considerable periods of time have no demonstrable influence on renal function or renal structure. With roentgen-ray exposures of the abdomen and shielding of the kidneys fatal intoxication may be produced without the slightest disturbance of kidney function as measured by the ability of the kidney to eliminate phenolphthalein and urea. Large doses of the roentgen rays given directly over the kidney may cause a slight but distinct lowering of renal function which lasts for a period of a few days. The authors have been unable to recognize any corresponding histologic change.



**Relation of Hypophysis to Antibody Production.**—An operative technic was evolved by Cutler permitting successful partial hypophysectomy in guinea-pigs. Such animals, when immunized to *B. typhosus*, produced specific agglutinins in the same quantity and at the same rate as unoperated and operation controls immunized at the same time and by the same method. In guinea-pigs previously immunized to typhosus and hen red blood corpuscles partial hypophysectomy had no effect on the continued production and persistence of typhoid agglutinins, hemagglutinins and hemolysins. In guinea-pigs immunized to *B. typhosus* both the continued ingestion and the intraperitoneal injection of the whole pituitary glands extract had no effect on the subsequent agglutinin titers as compared to that of normal animals. The experiments would appear to show either that the hypophysis does not play an important direct or indirect part in the production of and persistence in the blood of typhoid agglutinins, hemagglutinins and hemolysins, or that the amount of hypophysis left behind in the operation in order to maintain life is adequate also to exercise the degree of functional influence of these processes which the entire hypophysis conceivably exercises.

**Studies on Experimental Measles.**—Guinea-pigs react specifically to intracardiac injections of defibrinated blood from cases of human measles. There is a definite and constant rise in the temperature and a coincident decrease in the total number of leukocytes after an incubation period of from nine to twelve days. The guinea-pig reaction is produced with human blood only during a certain phase of the disease, which period corresponds approximately to the eruptive stage. Thirty-six hours prior to the eruption and twenty-four hours after the temperature is normal, the human blood gives rise to no reaction in this animal. The reaction follows with greater frequency in animals inoculated with measles blood obtained at the height of the eruption. Guinea-pigs which react and recover are not susceptible to reinoculation with measles blood if tested over periods of two weeks to three months after recovery. Guinea-pigs receiving normal human blood injected intracardially do not react with leukocytic or temperature changes. The constancy of the reaction described leads Duval and D'Aunoy to conclude that propagation of the virus is obtained by passage of the blood from infected guinea-pig to normal guinea-pig; that such passage seemingly increases virulence, since a number of animals thus inoculated die during or subsequently to the peak of the reaction. Apparently death in these cases results from acute hemorrhagic nephritis. Ordinary intercurrent or secondary infection plays no part in these effects as shown by careful bacteriologic examination.

### Journal of Industrial Hygiene, Boston

February, 1922, 3, No. 10

Development of Lung Fibrosis. C. K. Drinker, Boston.—p. 295.

Investigative Opportunities in Physical Examination of Large Groups of Individuals. R. I. Lee.—p. 304.

\*Neuropsychiatric Examination of 1,141 Students. S. Cobb, Boston.—p. 309.

\*Static Equilibrium as Useful Test of Motor Control. W. R. Miles, Boston.—p. 316.

**History Best Guide to Nervous Instability.**—Cobb regards history as the best guide to nervous instability—family history, past history and present complaints. In his examination of students, vasomotor instability was found somewhat more frequently in the men with neurotic histories. Tachycardia, blood pressure variation and dermatographia were often found associated with each other and with exaggerated knee jerks. Men with albuminuria were likely to show all these symptoms. Endocrinopathy was rare, but the small number of cases discovered showed more symptoms referable to the vegetative nervous system and less neurotic history and acne. In men with bad mechanical use of the body, tachycardia, sinus arrhythmia, high blood pressure and variable systolic pressure were more common. The men with good bodily mechanics passed better psychologic examinations than did those with poor posture.

**Measuring Static Equilibrium.**—The ataxiometer as a means of carefully measuring station in man has been used at the Nutrition Laboratory of the Carnegie Institution for

investigating the influence on neuromuscular control of such conditions as those before and after the taking of food, physical weakness associated with diabetes, prolonged exposure to cold, fatigue resulting from muscular work, and the ingestion of dilute alcoholic beverages. The ataxiometer automatically accumulates all the anteroposterior and lateral components of the movements directly in millimeters of sway, and provides a convenient method for making the test. The anatomic and physiologic considerations which influence stability of station and the quantitative influence of several of these factors have been shown by original data. This constitutes a description of how the test should be made. Results for a long series of measurements are presented and demonstrate that, although subject to practice, station is not very markedly improved by training. The test is put forward as a convenient and sensitive measure for variations in the efficiency of the neuromuscular mechanism of man.

### Medical Record, New York

Feb. 4, 1922, 101, No. 5

Use and Abuse of Local Support Also Motor Reeducation in Human Readjustment or Orthokinetics. J. M. Taylor, Philadelphia.—p. 177.

Nursing Problem. W. D. Alsever, Syracuse, N. Y.—p. 182.

Tuberculosis a Disease of Malnutrition. E. H. Cleveland, Rochester, N. Y.—p. 185.

Training and Proper Recognition of Physiotherapy Aides. J. F. Krasnye, Lowell, Mass.—p. 187.

\*Important Sign in Diagnosis of Beginning Pulmonary Tuberculosis. W. F. Dutton, Tulsa, Okla.—p. 189.

Bacillus Aerogenes Capsulatus Infection Complicating Typhoid Fever. H. R. Muller and J. S. Lincoln, New York.—p. 190.

Exogenetic Primary Cutaneous Infections. S. S. Greenbaum, Philadelphia.—p. 193.

**Diagnostic Sign of Incipient Pulmonary Tuberculosis.**—In cases of incipient pulmonary tuberculosis Dutton has noted a sound which he asserts is diagnostic. The sound may often vary in pitch between that of the wood plane on soft pine and a soft rasping. It may be continuous or alternating through the entire period of inspiration, but is not usually heard on expiration. The sound is usually heard best in the second or third intercostal spaces anteriorly, on the side affected, between the sternal line and the midclavicular line. This abnormal inspiratory sound is imitated by placing the lips and tongue in position as if to articulate the letter "T," then make the sound "shlu" by taking a full slow inspiration in an undertone, or alternate. This inspiratory sound may be continuous or interrupted so as to consist of one, two or three parts. Rarely it may consist of four parts.

### Michigan State Medical Society Journal, Grand Rapids

February, 1922, 21, No. 2

General Practitioner and Medical Certificates of Insanity. H. V. Hendricks, Traverse City.—p. 67.

Medical History in Upper Peninsula. T. A. Felch, Ishpeming.—p. 72.

Problems Confronting Medical Profession. R. A. Walker, Menominee, p. 75.

Wittmaack's Views Concerning Normal and Pathologic Pneumatization of Temporal Bone. E. Amberg, Detroit.—p. 78.

When Hysterectomy is Performed When Shall We, and When Shall We Not Remove Ovaries? R. R. Smith, Grand Rapids.—p. 84.

Tuberculous Peritonitis: Report of Cases. G. J. Curry, Flint.—p. 86.

Errors in Abdominal Diagnosis. F. B. Walker, Detroit.—p. 88.

### Military Surgeon, Washington, D. C.

February, 1922, 100, No. 2

Robert Jackson, M.D., Late Inspector-General of Army Hospitals. L. Crummer, Omaha.—p. 107.

An Episode of the Second Battle of Bull Run. W. W. Keen, Philadelphia.—p. 123.

\*Pulmonary Syphilis: Report of Case and Review of Reported Cases. A. Egdaahl, Rockford, Ill.—p. 129.

History of Military Medicine. F. H. Garrison, Washington, D. C.—p. 142.

Critique of Army Ration, Past and Present. J. R. Merlin.—p. 163.

\*Multiple Intestinal Resections for Gunshot Wounds. R. Colp, New York.—p. 188.

**Pulmonary Syphilis.**—The case cited by Egdaahl illustrates the importance of keeping in mind the possibility of syphilis in all cases of chronic lung involvement with negative sputum. The striking results obtained after antisyphilitic treatment furnish additional proof that the improvement could scarcely be a mere coincidence, although the great prevalence of tuber-



culosis means that the two disease processes may have existed side by side. A negative tuberculin test, and the absence of tubercle bacilli after repeated sputum examinations, renders the presumption justifiable that the tuberculous focus, if present, was inactive.

**Multiple Intestinal Resections for Gunshot Wounds.**—Immediate operation rather than conservative treatment, Colp insists, is indicated in all perforating gunshot wounds of the abdomen, especially in civilian practice. While suture is the operation of choice, if the perforations are many, resection is preferred. And if these perforations are grouped but widely scattered, not only are multiple resections practical but they are definitely indicated. Finally, the mortality of multiple intestinal resections is probably not greater than those of single resections. Colp reports a case of double intestinal resection for multiple perforation of the intestine. One part of the upper ileum was the seat of four perforations involving about 5 inches of the jejunum; 3 or 4 feet farther was a single, large, through-and-through perforation; and about 1 foot from the cecum were two smaller perforations. The segment of jejunum with four perforations was excised and an end to end anastomosis done. This procedure was repeated in the case of through-and-through perforation. The two smaller perforations were closed with a chromic purse-string suture reinforced with plain gut. The patient made a complete recovery.

### Minnesota Medicine, Minneapolis

February, 1922, 5, No. 2

- \*Gallbladder as Focus of Infection. B. S. Adams, Hibbing, Minn.—p. 69.
- \*Etiology and Laboratory Diagnosis of Actinomycosis. A. H. Sanford and T. B. Magath, Rochester, Minn.—p. 71.
- Suspension and Traction in Treatment of Fractures of Extremities. A. W. Ide and B. I. Deraut, Brainerd, Minn.—p. 80.
- Primary Lesion in Cancer. J. A. Johnson, Minneapolis.—p. 86.
- Results in Treatment of Inflammatory Diseases of Gallbladder and Its Ducts. O. N. Meland, Warren, Minn.—p. 90.
- Intestinal Polyposis and Its Relation to Carcinoma. M. Warwick, St. Paul.—p. 94.
- \*Circulatory Disturbances of Feet. E. S. Geist, Minneapolis.—p. 98.
- Cerebrospinal Arteriosclerosis. H. W. Woltman, Rochester.—p. 102.
- \*Hysterical Dysphagia. P. P. Vinson, Rochester, Minn.—p. 107.
- Principles Governing Treatment of Fractures. E. K. Green, Minneapolis.—p. 108.
- Mechanical Device (Belt) to Facilitate Handling of Patients in Whitman Abduction Splints. O. F. Schussler, Minneapolis.—p. 114.

**Gallbladder as Focus of Infection.**—Adams cites three cases of focal infection from the gallbladder. Each patient complained of severe pain in the back of the right thigh. In two cases removal of the inflamed gallbladder was followed by immediate relief of the pain. In the third case, removal of the gallbladder was advised but refused. It was drained. The patient has no pain in her leg unless she becomes overtired or has been on her feet a good deal.

**Actinomycosis.**—Ninety-six cases of actinomycosis seen in the Mayo Clinic are analyzed by Sanford and Magath, also 119 cases collected from the literature.

**Circulatory Disturbances of Feet.**—Sixty-seven cases of "foot-complaint" are analyzed by Geist. There were twenty-three cases of varicose veins and forty-two cases of arterial disease. Geist believes that these cases can be placed in four groups: (a) congenitally small arteries; (b) arterial spasm; (c) arteriosclerosis; and (b) thrombo-angiitis obliterans.

**Hysterical Dysphagia.**—Vinson states that the prolonged unbalanced diet gives rise to enlargement of the spleen and secondary anemia. Normal deglutition can be restored by passing an esophageal sound. Recurrences are liable to occur, but can be relieved by further passage of sounds and by constantly reassuring the patient. When normal deglutition is restored, the blood picture returns to normal and the splenic enlargement subsides. Hypothyroidism may develop after the patient begins to swallow freely, due to the inability of the thyroid to furnish secretion enough to care for the increased food intake.

### Missouri State Medical Association Journal, St. Louis

February, 1922, 19, No. 2

- Our Old Enemy—Cancer. S. J. Mixer, Boston.—p. 47.
- Choice Between Radium, Roentgen Ray and Knife in Treatment of Myoma and Cancer of Uterus. H. S. Crossen, St. Louis.—p. 55.

- Treatment of Uterine Cancer by General Practitioner. G. Gellhorn, St. Louis.—p. 59.
- Malignant Disease of Bone. H. E. Pearse, Kansas City.—p. 61.
- Radiculitis Type of Epidemic Encephalitis: Report of Case. F. Neuhoff, St. Louis.—p. 62.
- Lethargic Encephalitis. S. H. Snider, Kansas City.—p. 64.
- \*Extrapulmonary Causes of Pulmonary Symptoms and Signs. L. Clendenning, Kansas City.—p. 68.
- \*Vomiting in Infants and Children. E. H. Schorer, Kansas City.—p. 72.
- Scoliosis. A. O'Reilly, St. Louis.—p. 74.
- \*Treatment of Mercuric Chlorid Poisoning. O. H. Brown, Phoenix, Ariz.—p. 77.

**Extrapulmonary Causes of Lung Symptoms.**—Some of the extrapulmonary causes of pulmonary signs or symptoms are reviewed by Clendenning. He says that cough alone may be caused by ear disease; cough with expectoration may be caused by sinus disease or tonsillar infection; cough and hemoptysis by mitral stenosis or cardiac dilatation; asthmatic attacks may be due to aneurysm, thymus enlargement, Hodgkin's disease or mediastinal abscess; dullness and signs of fluid in the chest may be caused by pericarditis, or by subphrenic abscess.

**Vomiting in Children.**—When vomiting is met with in a child, Schorer says at least thirty conditions in which vomiting is a symptom must be thought of; practically all vomiting falls into eight classes or groups: (1) Stomach condition: (a) overloading; (b) with eructation of gas or swallowed air; (c) with gastric indigestion. (2) Obstruction at the outlet of the stomach: (a) in pyloric spasm and pyloric stenosis; (b) in spastic conditions. (3) Reflex: (a) psychic, voluntary vomiting; (b) coughing may cause vomiting; (c) masturbation; (d) putting the finger into the mouth and irritating the pharynx, or irritation caused by worms may induce vomiting. (4) Infectious diseases. (5) Nervous system conditions: (a) meningeal irritation; (b) cyclic, recurrent or periodic vomiting. (6) Intestinal origin: (a) intestinal obstruction; (b) peritonitis and appendicitis; (c) malformations in the duodenum, colon and rectum. (7) Blood conditions: (a) melena; (b) toxemia. (8) Ulcer of the stomach in the new-born.

**Treatment of Mercuric Chlorid Poisoning.**—The treatment employed by Brown consists essentially of the administration of large amounts of fluid chiefly water for ten or twelve days. The patient must drink from 2 to 3 gallons in twenty-four hours. The size of the patient governs the amount of liquid prescribed. Lemonade and orangeade, well sweetened, may replace some of the water. No other treatment, except sodium bicarbonate, is used unless there are special indications.

### Nebraska State Medical Journal, Norfolk

February, 1922, 7, No. 2

- Some Physical Signs of Tuberculosis. M. J. Breuer and R. G. Breuer, Lincoln.—p. 37.
- Tuberculin Treatment of Tuberculosis. R. M. Fouch, C. F. Heider and K. Hoover, Omaha.—p. 42.
- Treatment Against Acute and Chronic Purulent Pleuritis. C. Emerson, Lincoln.—p. 50.
- Surgical Treatment of Empyema, with Special Reference to Mazinga Method. R. L. Ivins, Crawford.—p. 56.
- Relation of Physiology to Surgery. C. C. Johnson, Lincoln.—p. 59.
- Strangulated Fibroid Complicating Pregnancy. J. F. Langdon, Omaha.—p. 63.

### New York Medical Journal

Jan. 4, 1922, 115, No. 1

- Relation of Medical Education to Medical Progress. H. S. Pritchett, New York.—p. 1.
- Recognition of Impaired Renal Function. G. M. Piersol, Philadelphia.—p. 9.
- Medicine's Duty Toward Tuberculous Patient. F. M. Pottenger, Monrovia, Calif.—p. 14.
- Early Diagnosis of Brain Tumors Before Eye Signs Occur. T. A. Williams, Washington, D. C.—p. 18.
- Unconscious in Spirit Communication and Symbolism. K. Dunlap, Baltimore.—p. 20.
- Environment and Trained Assistants as Factors in Success of Cataract Extraction and Other Eye Operations. E. B. Miller, Philadelphia.—p. 24.
- Development and Problems of Modern Chemotherapy of Infectious Diseases. H. Schlossberger, Frankfurt on the Main, Germany.—p. 26.
- Enteroantigens in Treatment of Noncontagious Chronic Disease. B. S. Dunn, Nice, France.—p. 29.
- Bacterial Vaccine Therapy. C. F. Kirkendall, Chicago.—p. 32.
- Anaphylactic Reaction After Blood Transfusion. S. A. Wolfe, Brooklyn.—p. 35.



- First Aid. S. D. Hubbard, New York.—p. 36.  
Treatment of Tuberculosis by Nasal Insufflation of Tuberculin. J. P. Israel, Houston, Texas.—p. 40.  
Increasing Value of Wassermann Report. A. H. Bunce, Atlanta, Ga.—p. 41.

Feb. 1, 1922, **115**, No. 3

- Nutritional Treatment of Tuberculosis. C. Pirquet, Vienna.—p. 121.  
Feeding Method of Pirquet School. H. Apfel, Brooklyn.—p. 123.  
Calories for Children. F. G. Benedict, Boston.—p. 126.  
\*Poliomyelitis with Cortical Involvement. L. P. Clark, New York.—p. 131.  
Connection Between Short Thick Neck and Tendency to Apoplexy. E. F. Cyriax, London.—p. 133.  
Autotherapy. T. M. Stewart, Cincinnati.—p. 135.  
Acute Phlegmonous Epiglottitis: Report of Cases. J. Friedman and S. D. Greenfield, Brooklyn.—p. 137.  
Cystoma and Fibrocystoma of Osseous System. E. N. Turkus, Brooklyn.—p. 140.  
\*Influence of Weather Conditions on Morbidity and Mortality in Early Infancy. F. I. Hoffman, Newark, N. J.—p. 145.  
Maternity Homes. J. M. Campbell, London.—p. 147.  
Local Anesthesia in Dental, Oral, Nose and Throat Surgery. H. E. Tompkins, New York.—p. 151.  
Early Diagnosis of Stomach Cancer. J. Katz, New York.—p. 153.  
Etiology and Treatment of High Blood Pressure, Arterial Hypertension, and Arteriosclerosis. G. E. Barnes, Herkimer, N. Y.—p. 155.  
\*Tumors of Heart. H. I. Goldstein, Camden, N. J.—p. 158.

**Poliomyelitis with Cortical Involvement.**—Two of the patients whose cases are cited by Clark were very similar in nervous make-up. They were both bright, sensitive, over-active types of boys, continually interested in sports and games, but only wanted to engage in them according to their own desires. In short, they possessed a mild type of epileptic make-up and probably the inception and continuance of the epilepsy was not a little conditioned upon this personality make-up. A third patient was a classical epileptic in temperament and mental attitudes. In all three, therefore, one might say that lacking the predisposition they might not have had their epilepsy or it would not have continued, as it has in three, if the predisposition to the disorder had not been present. Just what the meningeal or cortical lesion coincident with the poliomyelitis may have been, cannot even be surmised, inasmuch as the type of convulsive attacks is not dissimilar to that seen in the essential disorder. In an experience of many years and an analysis of thousands of epileptics Clark says the cases cited are all the instance of poliomyelitis followed by enduring epilepsy that he has encountered.

**Weather and Diarrheal Diseases of Infants.**—There appears to be a consistent rise in the sickness rate from diarrheal diseases of infants under 1 year, with an increase in both maximum and minimum temperatures. The suggestion is made by Hoffman as a conclusion forced, that it would seem entirely feasible to develop this line of inquiry in the direction of applied meteorology to the point of forecasting weather conditions favorable to an epidemic outbreak of infantile diarrhea. By this means every mother could be informed promptly through the newspapers of impending weather changes likely to prove disastrous to child life, amplified by proper suggestions from the board of health, or otherwise, as regards the danger of artificial feeding; and last, but not least, changes in feeding methods during abnormal temperature conditions.

**Primary Tumor of Heart.**—Goldstein states that about 150 cases of primary tumor of the heart are on record in the literature. Forty of these were sarcomas. A case of primary sarcoma, seven cases of metastatic sarcoma and two cases of secondary carcinoma of the heart and pericardium are reported.

### Pennsylvania Medical Journal, Harrisburg

February, 1922, **25**, No. 5

- American Surgery. E. R. Kirby, Philadelphia.—p. 299.  
Nasal Accessory Sinus Disease. J. J. Sullivan, Jr., Scranton.—p. 300.  
Optic Neuritis Following Nasal Accessory Sinus Disease. L. G. Redding, Scranton.—p. 304.  
Electric Drill in Intranasal Maxillary Sinus Operation. G. B. Wood, Philadelphia.—p. 305.  
Vaccine Therapy in Accessory Sinus Infections. J. L. Davis, Philadelphia.—p. 306.  
\*Malnutrition as Pretuberculous State in Children. J. D. Donnelly, Philadelphia.—p. 317.  
Nutrition Classes for Children. S. D. Wyckoff, Wilkes-Barre.—p. 320.  
Acute Articular Rheumatism. H. H. Penrod, Johnstown, Pa.—p. 329.  
Common Types of Goiter. I. Bram, Philadelphia.—p. 336.

**Malnutrition Sign of Pretuberculous State.**—Donnelly points out that certain children have physical findings in the chest which might be interpreted as of tuberculosis without the clinical and symptomatic manifestations of this disease. When such findings are accompanied by malnutrition, lowered resistance and fatigue, the patient may be said to be in a pretuberculous state. Fatigue, faulty posture and malnutrition are the strongest factors in lowering resistance, preparing for and developing active pulmonary tuberculosis. Under proper care many of the chest findings improve or disappear as health is recovered.

### Rhode Island Medical Journal, Providence

February, 1922, **5**, No. 2

- Asthma. J. Perkins, Providence.—p. 193.  
Pruritus. R. Blosser, Providence.—p. 197.

### Southern Medical Journal, Birmingham, Ala.

February, 1922, **15**, No. 2

- Newer Methods in Treatment of Diabetes. E. P. Joslin, Boston.—p. 93.  
Duodenal Tube in Study of Liver and Pancreatic Pathology. C. W. Dowden and C. D. Enfield, Louisville, Ky.—p. 103.  
Newly-Born Service. L. R. DeBuys, New Orleans.—p. 115.  
Relationship of Local State and Federal Agencies in Venereal Disease Control. C. C. Pierce, Washington, D. C.—p. 121.  
Acute Intestinal Obstruction. G. A. Hendon, Louisville, Ky.—p. 130.  
\*Sacro-Iliac Sprain. E. D. Martin, New Orleans.—p. 135.  
\*Early Diagnosis and Treatment of Joint Tuberculosis. J. T. O'Ferrall, New Orleans.—p. 139.  
Types of Injuries Met by Railroad Surgeon. J. H. Blackburn, Bowling Green, Ky.—p. 143.  
Diphtheria and Hemolytic Streptococcus Carriers as Shown by Tonsil Sections and Growth After Enucleation. G. E. Adkins, Jackson, Miss.—p. 147.  
Experience with Metal Plates in Advancement of Ocular Muscles. A. O. Pfingst, Louisville.—p. 150.

**Treatment of Sacro-Iliac Strain.**—In the cases of simple strains or sprains Martin says the treatment resolves itself into the proper strapping of the back in the acute cases and in the chronic or recurring cases a well fitting sacro-iliac belt is needed. The buttocks should be compressed and adhesive strips 3 inches in width applied from one trochanter to the other opposite the third sacral segment. These straps should not go above the ilium. The strapping is frequently uncomfortable on account of the pull on the skin on either end of the strip. This is easily overcome by fixing these ends with another adhesive strap brought around in front and covered with gauze to prevent adhesion to the abdominal wall. This counteracts the pulling effort on the skin and, if not too tight, adds much to the comfort of the patient.

**Treatment of Joint Tuberculosis.**—O'Ferrall emphasizes that the treatment of joint tuberculosis requires not local treatment of the affected part alone, but rigid and long continued constitutional treatment. Protection and extension of tuberculous joints should last over a period not less than two years, especially as regards weight bearing. The promiscuous opening of tuberculous abscesses and haphazard curetting of sinuses is extremely bad surgery. The end result striven for should not be ankylosis, but a functioning joint. It is unfair to hope for such a result if weight bearing is allowed on an actively diseased bony structure.

### Tennessee State Medical Association Journal, Nashville

January, 1922, **14**, No. 9

- Operative Treatment of Glaucoma. H. Wood, Nashville.—p. 323.  
Pre-Operative and Postoperative Management of Abdominal Operations. E. J. Johnson, Memphis.—p. 326.  
\*Case of Impacted Urethral Calculus Causing Extravasation of Urine. J. E. Hall, Nashville.—p. 329.  
Cesarian Section. G. R. McSwain, Paris.—p. 330.  
Ureteral Calculi. G. R. Livermore, Memphis.—p. 332.  
Value of Occupational Therapy in State Hospitals. E. W. Cocke, Bolivar.—p. 333.  
\*Acute Intestinal Obstruction Due to Strangulation of Loop of Small Intestine by Meckel's Diverticulum. R. W. Grizzard, Nashville.—p. 335.

**Urethral Calculus in Boy.**—Hall cites a case of urethral calculus causing complete retention, rupture of the urethra and extravasation of urine in a boy, aged 15.

**Acute Intestinal Obstruction with Meckel's Diverticulum.**—In Grizzard's case the intestine was strangulated under a



bridge formed by Meckel's diverticulum, extending from the umbilicus to a point on convex border of the ileum about 18 inches from the ileocecal valve. The diverticulum was approximately 8 inches long, coming off at right angle from the ileum, nearly of the same caliber as the normal small intestine in the half proximal to the ileum, but smaller and more cordlike in the distal half. About 8 feet of intestine, together with the diverticulum, was resected and an end to end anastomosis made. Patient died on the fourth day, supposedly from toxemia, due to intestinal stasis.

### FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

#### British Journal of Children's Diseases, London

October-December, 1921, **18**, Nos. 214-216

- \*Cephalic Bruits in Children. G. F. Still.—p. 173.
- \*Leukosarcoma, Lymphosarcoma, Lymphadenoma and Infectious Mononucleosis. F. P. Weber.—p. 179.
- Nervous Child. C. W. Barr.—p. 182.
- Case of Renal Dwarfism (Congenital) with Bony Changes. D. Paterson.—p. 186.
- Case of Morbilli Bullosi. E. Morton.—p. 188.

**Cephalic Bruits in Children.**—Still records the case of a boy, aged 8, who had a cephalic or intracranial bruit. It was well heard at both ears, perhaps a little louder at the left than at the right, and was a low-pitched systolic bruit, very like the functional bruit which is not infrequently heard over the middle of the praecordium in children. It was definitely a bruit and not merely the thud of pulsation. Still states that this bruit is not of serious import. He reviews the literature on the subject and analyzes 200 cases examined.

**Leukosarcomatosis of Mediastinum.**—A case of mediastinal leukosarcomatosis occurring in a boy, aged 7 years, reported in 1919 is again referred to by Weber. A special point of interest in the case was the presence of myeloid tissue in the hilus of each kidney.

#### British Journal of Tuberculosis, London

January, 1922, **16**, No. 1

- Sun in Treatment and Prophylaxis of Tuberculosis. A. Rollier.—p. 1.
- Prevention and Treatment of Tuberculosis in Administrative County of Lancaster. G. L. Cox.—p. 13.
- Services of Surgical Tuberculosis Officer. C. L. Pattison.—p. 17.
- Detoxicated Tubercle Bacillus Vaccine. D. Thomson.—p. 20.
- Switzerland as Permanent Residence for Tuberculous. B. Stracey.—p. 29.

#### British Medical Journal, London

Jan. 21, 1922, **1**, No. 3186

- \*Position of Thyroid Gland in Endocrine System. W. L. Brown.—p. 85.
- \*Rheumatoid Arthritis Due to Infection of Nasal Accessory Sinus. P. Watson-Williams.—p. 88.
- Case of Diaphragmatic Hernia. G. J. Langley.—p. 90.
- \*Hereditary Polydactylism. R. F. Young.—p. 91.
- Carelli Method of Perirenal Inflation. F. Hernaman-Johnson.—p. 91.
- Deep Roentgen-Ray Therapy in Malignant Disease. J. C. Webb.—p. 92.
- Case of Trypanosomiasis from Portuguese East Africa Apparently Cured. G. C. Low and H. B. G. Newham.—p. 96.
- Significance and Treatment of Some Abnormalities of Urine in Children. A. Dingwall-Fordyce.—p. 97.
- Blood Pressure in Functional Bruits in Children and Young Adults. A. F. Martin.—p. 99.
- \*Clinical Test for Presence of Cellular Elements in Urine. T. H. C. Benians.—p. 100.
- Fracture of End Phalanx of Finger, with Rupture of Common Extensor Tendon. J. N. Laird.—p. 101.
- Torn Splenic Artery: Splenectomy. J. A. Reed.—p. 101.
- Operation for Relief of Ascites, Following Cirrhosis of Liver. J. L. Bocarro.—p. 101.
- Classification of Squint. A. F. Fergus.—p. 102.

**Position of Thyroid in Endocrine System.**—Brown states that the position of the thyroid in the endocrine system is that of a powerful activator of metabolism. In this respect it cooperates with the suprarenals and the pituitary, and antagonizes the pancreas and the parathyroids. On the nervous side it cooperates with the sympathetic nervous system, both being stimulated to increased activity by it and lowering the threshold to it. In this way it plays an important part both in external and internal defense. Externally, it leads to greater manifestation of energy in the direction of fight or flight; internally, it quickens the reactions to bacterial

invasion. An important way in which it accomplishes this is by mobilizing the blood sugar. This increased supply of sugar may either be used for muscular energy in external defense or for heat in the febrile reaction of internal defense. As a provision against waste of this sugar, the kidney threshold is raised to prevent its escape into the urine, so that despite hyperglycemia there may be no glycosuria. Yet this blood sugar may exceed even this raised threshold, so that some escapes. This is particularly likely to occur during emotional excitement, when the gland is apt to enlarge. It interacts also with the gonads, and the undoubted fact that it plays a more active part in female metabolism may be due to its origin from the uterus of a palaeostracan ancestor. This interaction may account for the disturbances which are so apt to occur in the gland after an artificial or natural climacteric. That in the former instance this is likely to take the form of intermittent hyperthyroidism may be due to the gland being still in full activity; in the latter instance hypothyroidism is more common, presumably because the gland is already undergoing retrogression. The combination of a distressing emotion of matrimonial origin with a toxemia of alimentary origin is the most fertile cause of hyperthyroidism, and biologic considerations are presented to explain why this is the case.

**Rheumatoid Arthritis Caused by Infected Nasal Accessory Sinuses.**—The recognition of the infective nature of a considerable percentage of clinical syndromes loosely designated rheumatism, rheumatoid arthritis, chronic articular fibrositis, neuritis, and so forth, has led to investigations directed to the many possible sources of such infection. Williams asserts that while the teeth, gastrointestinal and genito-urinary tracts have received due consideration, there lies in the nasal accessory sinuses a possible source of chronic systemic infection which merits more attention than has hitherto been accorded to this region. Notes are given some cases which have benefited definitely by treating the infection of the nasal sinus.

**Hereditary Polydactylism.**—A case of bilateral double great toe is reported by Young and the hereditary nature is shown. The genealogic table is very incomplete, and can only be traced to the grandfather of this patient. Prior to him it is reported that accessory toes have "descended down, but was a matter which was never discussed." The only deformity has been that of additional toes. The grandfather, father, one uncle, one brother and one sister had this deformity.

**Clinical Test for Cellular Elements in Urine.**—The test recommended by Benians is made to ascertain the presence of peroxid splitting enzymes in the urine. These enzymes have the power of setting free oxygen from hydrogen peroxid, and the reaction in a fluid medium gives rise to the ebullition of gas bubbles. If hydrogen peroxid is added to normal sterile urine no effervescence occurs even after a considerable time has elapsed. It follows that if the addition of the peroxid leads to effervescence, some abnormal element is present in the urine. These enzymes are present in pus cells or leukocytes in large amount, and these, therefore, give a very free reaction. Epithelial squames give little reaction, unless heavily infected with bacteria, but the deeper epithelial cells react more freely. Tube casts may react vigorously. Red blood cells give the reaction on account of their hemoglobin. Of the albuminous fluids fresh blood serum gives an active reaction, probably on account of some blood cells remaining in suspension in it, since other albuminous fluids such as hydrocele and ascitic are inert. Practically all of the bacteria, with the exception of the streptococcal group (which includes the pneumococcus), gave active ebullition with hydrogen peroxid when the cultures are treated directly with it. At the same time, when bacteria are grown on sugar-containing medium (which they fermented with the production of acid), they are liable to give a negative reaction. This point has to be considered in dealing with very acid urines, since the peroxid-splitting enzymes only act well in neutral or alkaline media. If the urine is strongly acid or alkaline to litmus it should first be neutralized by the addition of a few drops of dilute alkali or acid. The peroxid should be fairly fresh, not less than 20 volumes in strength—40 volumes is better—and not too acid in reaction. To about a third of a test tube of urine about a quarter of the amount of the



20 volumes peroxid solution is added. The tube is placed in a rack, not in direct sunlight, or spontaneous evolution will take place. In a strongly positive reaction bubbles start to rise immediately and form a permanent layer of foam at the top of the fluid. If the reaction is only faintly positive, bubbles will gradually rise and form a thin layer on the top; this may take from fifteen to twenty minutes, or longer, if the urine is acid. A few bubbles lying on the meniscus are made more evident by gently rocking the tube to throw them down into the fluid. In a normal urine one or two bubbles may rise immediately after the addition of the peroxid, especially if the urine is warm, but there is no steady evolution of gas or formation of a layer of foam.

### International Journal of Public Health, Geneva, Switzerland

November-December, 1921, Supplement to Vol. 2, No. 6  
Tuberculosis Contagion, Especially in Infancy. L. Bernard.—p. 661.

### Journal of Tropical Medicine and Hygiene, London

Jan. 2, 1922, 25, No. 1

- Phenololipoid N. in Experimental Infection by *Micrococcus Melitensis*. A. Carini.—p. 1.  
\*Treatment of Leprosy by Intravenous Injection of Chaulmoogra Oil. P. Harper.—p. 2.  
\*Peculiar Type of Epidemic Dermatitis. O. Browne.—p. 4.

**Chaulmoogra Oil Intravenously in Leprosy.**—At Makogai Asylum (Fiji) more than 200 patients are undergoing treatment by intravenous injection of chaulmoogra oil. Since the treatment was started over 26,000 injections of chaulmoogra oil have been given intravenously. No serious ill effects have occurred, but there have been two subcutaneous abscesses (due to faulty injection), which rapidly yielded to ordinary treatment. Patients vary considerably in the dose tolerated, and therefore the dose must be carefully adjusted to each patient. The temperature chart alone is no guide to dosage. "Treatment reaction" may consist of tachycardia, fever, and a blotchy, red, raised eruption, sometimes accompanied by swelling of nodules and infiltrations, which are then completely or partially absorbed. Patients are seldom very ill with "treatment reaction." Most patients improve without a treatment reaction severe enough to be noticed. Thirty-eight patients have now been under treatment for periods of up to eleven months. Twenty-eight have improved, one died of influenza, three have definitely got worse, and in six there is no change.

**Epidemic Dermatitis.**—The dermatitis described by Browne is peculiar in that it comes abruptly. Within a few moments severe itching occurs usually on the abdomen or buttocks, and a rash like "hives" urticaria makes its appearance. Many of the "hives" become papular. Granulomas of the size of a small bean or marble form in the deeper layers of the skin. The pruritus is intense, especially at night. The pruritus is also peculiar at times, and feels like something "swarming" in the skin. There is also at times considerable formication or biting, causing the patient to hunt about for ants or fleas, but the formication travels too rapidly to be insect in origin. At times there is a feeling like cobwebs on the face. Tearing away the scab from a papule eases the irritation till a new scab forms. There is no tendency for the individual papules to spread, but each, after itching, scaling and persisting for perhaps months, dies away gradually, being succeeded by fresh eruption. The skin, especially if dark, is left in a piebald unsightly condition, with either darker or lighter spots. Fortunately, however, these marks gradually wear away, except in lesions that have by scratching become deeper than usual. No portion of the skin is exempt. Even the palms, soles and glans penis may be affected. The eruption has a way of skipping about, dying down on one part and suddenly appearing on another. Minute plaques may occur on the backs of the hands and elsewhere. Whitlows may form. Also at times roseolar rashes appear, especially on the chest. The hair also gets cut off at the base by all this dermatitis, and may be shed so plentifully as to leave the part smooth and bare, but it grows again. The symptoms may last only three or four months, but usually they last very much longer, subsiding, even altogether disappearing at times, only

to break out again. Treatment is very unsatisfactory, and usually the most that can be done is to relieve symptoms.

### Lancet, London

Jan. 21, 1922, 1, No. 5134

- History of Surgery of Brain. C. Ballance.—p. 111.  
\*Influenza: Treatment by Direct Stimulation of Leukopoiesis. J. G. Willmore and F. M. Gardner-Medwin.—p. 116.  
\*Sigma Reaction for Syphilis. A. F. Rook.—p. 118.  
\*Bilious Attacks and Epilepsy. C. W. Vining.—p. 122.  
\*Researches on Cinchona Alkaloids. H. W. Acton.—p. 124.  
Case of Lateral Sinus Thrombosis. L. B. C. Trotter.—p. 128.

**Treatment of Influenza by Stimulating Leukopoiesis.**—The treatment employed by Willmore and Medwin was directed toward stimulating the production of leukocytes directly by means of injections hypodermically or intramuscularly of sodium nucleinate and to neutralizing the poison already circulating in the tissues by large doses of alkalis (sodium bicarbonate, 4 gm., four-hourly), and by giving as much glucose in the food as patients would take. In the worst cases glucose was given per rectum, subcutaneously, or intravenously in a 3 per cent. solution, combined with sodium bicarbonate, 2 per cent. Free purgation with calomel and salines, cardiac stimulants hypodermically (such as camphor in oil and caffein in a solution of sodium benzoate as required), and a mixture containing potassium iodid and creosote in cases in which there was much mucopurulent expectoration, were concomitants in the treatment. The diet consisted of milk and glucose, and dilute albumin-lemon-glucose-barley water, of which the patients were encouraged to drink as freely as ever they could. Honey was given when it could be got. Twelve patients with influenza and pulmonary complications, all so seriously ill that a fatal issue was reasonably anticipated in every instance, made an uneventful recovery.

**Sigma Reaction for Syphilis.**—The results of the series of cases in which Rook studied the sigma reaction of Dreyer and Ward would seem to show that the results as regards blood serum tests in untreated cases are as good, or even slightly better than the results obtained by the Wassermann reaction, when judged from a clinical standpoint. The results obtained in the cerebrospinal fluid have not been so good as have the results of the Wassermann reaction.

**Bilious Attacks and Epilepsy.**—Evidence is presented by Vining to emphasize the possibility of the "bilious attack" and other morbid phenomena occurring in the child and adolescent being in some cases an expression of a potentially epileptic nervous system. The recognition, therefore, of the possible relationship of these phenomena to the epileptic state and their active and prolonged treatment, together with suitable control of the child's life, may go a long way in the prevention of the development of the convulsive habit.

**Cinchona Alkaloids.**—As the result of his researches Acton concludes that (1) the dextrorotatory alkaloids, "cinchonin series," are more powerful than their levorotatory isomerides, the "cinchonidin series"; (2) the hydro-alkaloids are more stable and more active in many respects than the natural alkaloids; (3) the higher members of both series of these alkaloids are more toxic to mammals, protozoa, and bacteria than the lower members.

Jan. 28, 1922, 1, No. 5135

- Problem of Solitary Child. R. Hutchison.—p. 163.  
History of Surgery of Brain. C. Ballance.—p. 165.  
\*Case of Acute Anaerobic (*B. Welchii*) Infection of Uterine Fibroids. W. B. Gabriel and A. N. Kingsbury.—p. 172.  
Chronic Deep Infection of Jaws. S. Colyer.—p. 175.  
\*Two Cases of Fever. R. V. Solly.—p. 177.

**Acute Anaerobic Infection of Uterine Fibroids.**—Gabriel and Kingsbury postulate that necrobiosis of uterine fibroids is due to an anaerobic infection derived from the cavity of the uterus; the infection remains localized to the fibroid, and results in (a) local changes, (b) general effects. (a) Hemolysins produced in the fibroid will account for the hemolysis. The initial infection will cause a vascular engorgement which by distension of the capsule will account for the pain of which these patients complain. Later, infective periphlebitis may involve the capsular vessels, and the condition may proceed



finally to an established phlebitis and thrombosis. (b) General effects, such as malaise, fever and secondary anemia, are produced partly by the absorption of these necrotic products, and partly by the hemolysis which these bacterial toxins can also effect in the general circulation. The case reported by Gabriel and Kingsbury has much in common, clinically and pathologically, with more typical cases of acute red degeneration. It differs in that the infection proceeded to a well established septicemia. The authors believe that the theory of anaerobic infection as the primary cause of this condition is more satisfactory than the current theories of primary thrombosis or aseptic necrosis, and the immunity from red degeneration which ovarian fibroids show is well explained by this theory in virtue of their noncontact with the uterine cavity. A final point is the fact that although all varieties of uterine fibroids may become necrobiotic, interstitial and submucous tumors are most liable to become affected.

**Pneumococcus Pyrexia: Paratyphoid Fever.**—Solly reports a case of long continued pyrexia due to pneumococcal infection and a case of paratyphoid. The first case was very prolonged, lasting from the end of January to June 11. Besides the temperature there were very few symptoms—sweating, headache, and a curious macular rash, with some nasopharyngeal catarrh and weakness and increased pulse rate. Blood cultures on two occasions were negative. There was a definite leukocytosis with increased percentage of polymorphonucleus and a pneumococcus was isolated from a swab taken from the nasopharynx. Recovery is attributed to vaccine, as the characters of the temperature curve show definite alteration after this vaccine was begun. The second case was of two months' duration. Sciatica was one of the symptoms, but this passed off. As regards the agglutination test a very definite "zone of inhibition" in the lower dilutions appeared. The diagnosis was finally clinched by the isolation of *B. paratyphosus* B from the serum obtained from a small swelling in the chest.

### Archives Franco-Belges de Chirurgie, Brussels

December, 1921, 25, No. 3

- \*Torsion of the Great Omentum. R. Simon and E. Stulz.—p. 193.
- \*Surgical Treatment of Trigeminal Neuralgia. L. Christophe.—p. 206.
- \*Edema and Vasotrophic Shocks. G. Bouché and A. Hustin.—p. 219.
- Spinal Anesthesia with Syncain-Caffein. Chauvin and Moya.—p. 223.
- \*Periarterial Sympathectomy for Causalgia. O. Platon.—p. 226.
- Intestinal Obstruction and Ascaris Lumbricoides. Verdelet.—p. 241.
- \*Congenital Luxation of Hip Joint. A. Lambotte.—p. 244.
- Osteotomy in Infantile Paralysis. M. van Neck.—p. 247.
- \*"Dovetail" Bone-Graft. J. Moreau.—p. 256.
- \*Treatment of Congenital Luxation of Hip Joint. Delchef.—p. 268.
- Epispadias and Apparatus Against Enuresis. Maffei.—p. 276.
- Treatment of Pseudohermaphroditism. Marique.—p. 280.
- Autoplasty for Pre-Scrotal Hypospadias in Adult. F. Dordu.—p. 282.

**Torsion of the Great Omentum.**—In the case described a portion of the omentum had slid down into the scrotum, forming a pear-shaped hernia which had twisted on its pedicle. The hernia and its torsion may be long in developing and may cause no symptoms until suddenly a severe clinical picture calls for immediate operation.

**Operative Treatment of Trigeminal Neuralgia.**—Christophe's eleven illustrations outline the technic for section of the posterior root of the gasserian ganglion as done, he says, by American surgeons to cure trigeminal neuralgia.

**Shock Treatment of Chronic Edema.**—Bouché and Hustin argued that as local edema is the most frequent and most durable symptom of a local anaphylactic shock, and as it subsides on repetition of the shock, chronic edema might yield in the same way to induced shocks. In three cases of chronic edema, of traumatic origin in adults, improvement followed treatment on this basis. One man was injected with 6 c.c. of diphtheria antitoxin and, two weeks later, with 0.5 c.c. of the same, repeating this at five to seven day intervals for nearly three months. In the two other cases, crotalin was used for the shock treatment. The edema increased after the first injection, but then subsided completely under three or four more injections in about a month.

**Treatment of Causalgia.**—Platon reports excellent results in eighteen cases of causalgia treated by resection of the

sympathetic network around the main artery of the region. The pains subsided completely after this periarterial sympathectomy. In sixteen of the cases the pain stopped at once after the operation; in the others it was more gradual. The causalgia had followed a war wound in all the cases, involving motor nerves in all but two.

**Congenital Luxation of Hip Joint.**—Lambotte declares that luxation of the hip joint can be corrected at any age. He has accomplished this in a number of patients between 15 and 47 years old. A lever-tractor pulls the head of the femur down into place, and the acetabulum is hollowed out deeper and the head of the femur carved to correspond. The operation is easier in adults than in children, and recurrence is less frequent. He gives an illustration of his special lever for prying the head into place, and of his curet which is exactly the size and shape of the femur head.

**The Mortise and Tenon Bone Graft.**—Moreau saws the bone stump in half lengthwise and then perpendicularly through one half, slanting this perpendicular line at an angle of 45 degrees. The implant is cut to correspond, with beveled ends, fitting into the gap between the stumps to form a trapezoidal dovetail mortise and tenon. This insures exceptional solidity and the maximum of contact between the bone surfaces, while the shaft can be restored to its normal length. This technic is particularly advantageous for pseudarthrosis or a gap in the bones of the forearm.

**Congenital Luxation of the Hip Joint in Adults.**—Delchef's illustrations show the excellent outcome of simple reduction in five out of six girls and women with congenital luxation of the hip joint. He applied a plaster cast that immobilized the knee almost in the axilla. In one patient the arm was left free; in the others the upper arm was included in the cast. The axillary position holds the head low in the acetabulum. The one failure in his series was in a case of bilateral luxation. He tried to correct the luxation on both sides at the same time, but succeeded only on one side, so that the limbs are now of unequal lengths and the patient refuses to allow operative correction on the other side.

### Archives des Maladies du Cœur, etc., Paris

November, 1921, 14, No. 11

- Abnormal Terminal Tachycardia. L. Gallavardin.—p. 481.

### Bulletin Médical

Dec. 24, 1921, 35, No. 52

- Therapeutics in 1921. G. Lyon.—p. 1019.

Jan. 7, 1922, 36, No. 1

- Diathermy in Urology. R. Le Fur.—p. 5.
- Mountain Climbing with Artificial Pneumothorax. C. Mantoux.—p. 9.

Jan. 11, 1922, 36, No. 2

- \*Rectoscopy. F. Moutier.—p. 19.
- \*Technic for Spinal Anesthesia. R. Dumas.—p. 22.

Jan. 14, 1922, 36, No. 3

- The Bacteriophagum Intestinale: Facts; Interpretation; Application. Françon and Marquézy.—p. 33.

**Rectoscopy.**—Moutier remarks that a speculum for the anus was used in remote antiquity, but Desormaux was the first to devise an actual endoscope, in 1853. These original instruments were on exhibition at the recent history of medicine congress. But, he adds, Kelly first rendered it practicable, in 1895. Moutier describes the simple technic for endoscopy and interpretation of the findings. He emphasizes that malignant disease in the rectum is practically always secondary to cancer at the sigmoid flexure, and the primary growth cannot be felt with the finger in the rectum. Rectoscopy would reveal it in its early and curable stage if this were a routine procedure. But to date even digital examination of the rectum is rarely practiced until grave symptoms show that the readily curable stage is past.

**Intraspinal Anesthesia.**—Dumas expatiates on the advantages of intraspinal injection of the anesthetic in the lumbar region for operations in the pelvis. It is by all means the best method, he says, in cases of obesity, insufficiency of liver or kidney, and with lung disease. There are a number of absolute contraindications to it, however, and ignorance of



these is responsible for the mishaps that have been reported. Now that they are known and can be avoided, he says, the technic is simple and as safe as any anesthesia. Shock in any form, from hemorrhage, infection or weakness, contraindicates intraspinal anesthesia. In these conditions and in emergency operations, nitrous oxid plus local anesthesia is preferable. All the grave cases of syncope and arrest of respiration in civilian practice were in patients with strangulated hernia, ileus, peritonitis or extensive hemorrhage. In these conditions the patient cannot stand the intense drop in pressure that follows the intraspinal injection. Grave or fatal symptoms follow in five or ten minutes. But aside from such conditions as these, he continues, it is a wonderful method which does away with necessity for an anesthetist, and leaves the lungs, kidney and liver intact.

### Gynécologie et Obstétrique, Paris

November, 1921, 4, No. 5

- \*Thyroid in Relation to Pregnancy. Andréodias et al.—p. 387.
- \*Hysterectomy in Puerperal Infection. Cadenat et al.—p. 394.
- \*Treatment of Puerperal Fever. Andréodias.—p. 412.
- \*Puerperal Infection and Insufficiency of the Liver. Bourcart.—p. 419.
- Moving Pictures for Teaching Obstetrics. V. Wallich.—p. 422.
- \*Radium Treatment of Uterine Fibromas. Siredey et al.—p. 427.
- Radium Treatment of Uterine Cancer. Bégouin et al.—p. 440.
- \*Radium Therapeutic Drainage. F. Daels (Ghent).—p. 459.
- \*Radium Treatment of Hemorrhagic Metritis. Siredey et al.—p. 482.
- Radium Treatment of Vulvar Vegetations. P. Degrais.—p. 493.
- Modified Wertheim Operation for Genital Prolapse. S. delle Chiaje (Naples).—p. 495.
- Lutein Cells in Relation to Uterine Hemorrhage.—de Rouville and P. Sappey.—p. 499.
- Cystoscopy in Diagnosis of Gynecologic Disease. G. de Rouville and E. Desmonts.—p. 503.

**The Gynecologic and Obstetric Congress.**—This issue of *Gynécologie* publishes the discussions on the main addresses, and other communications presented at the recent congress. The addresses themselves were reviewed in these columns, Nov. 26, 1921, p. 1770.

**Insufficiency of the Liver in Puerperal Infections.**—Bourcart expatiates on the primordial importance of the liver in combating infections, and states that his years of study of this subject have shown that the liver functioning flags usually in consequence of an inadequate blood supply. The portal vein begins and terminates in capillaries; its contents are forced along only by the abdominal pressure, and this pressure is modified by ptosis and atrophy and flabbiness of the abdominal wall. How to improve the circulation in the liver is the great question. The abdominal circulation in dogs is unhampered, and they never have appendicitis nor puerperal fever nor gastric ulcer. Removing the causes hampering the circulation through the liver has an enormous influence, he says, on the defense of the organism against infection in the blood. Light manual vibratory massage of the region below the liver for twenty or thirty minutes, or training the patient to spread the ribs and draw in the abdomen, has often, after a single sitting, been followed by the temperature dropping to normal by the next day, and all the organic functions resuming their play in cases of septicemia with fever of 102 and 104 F. and scanty urine. Even if the benefit is not so prompt as this, the turn for the better is soon evident. Manual vibratory massage is extremely gentle when properly done, and is less risky than intravenous injections, etc. It is simple to apply on condition that it is restricted to surgical hands. It is being applied regularly in the Geneva Maternity.

**Radium Therapy for Uterine Fibromas.**—A large number of communications on this subject were presented. The majority of speakers and those with the widest experience seemed to feel that a larger proportion of patients will be cured by an operation than with radiotherapy.

**Radium Treatment of Uterine Cancer.**—A large number of communications are reproduced, with numerous illustrations, especially of the method used by Daels of Ghent who introduces several drain tubes from various points, each containing one or more radium applicators. He usually places one in the uterus, vagina, rectum or bladder and two others on each side passing through the cellular tissue of the small pelvis, from above the pubis to one side of the anus. Some of his cases, surgically inoperable, have been cured for over

a year to date. Five of the patients have died, one from ileus, and one from hemorrhage. He reported eighteen cases in which this *drainage radiumthérapeutique* had been successfully applied. De Rouville and Siredey reported cases showing that radium therapy can be applied without interrupting a pregnancy. Oppert warned that radium necrosis in the rectum must not be mistaken for cancer. Hartmann agreed with those who regard deep roentgen therapy plus radium therapy as having the most promising outlook.

**Radium Treatment of Hemorrhagic Metritis.**—Several warned that radium should not be used for this purpose in young women, but otherwise the reports were favorable for it.

### Paris Médical, Paris

Jan. 14, 1922, 12, No. 2

- Symptomatic Value of Exophthalmos. F. Terrien.—p. 33.
- The Fight Against Cancer. L. Dieulafoy.—p. 41.
- Import of Reviviscence in situ of Chancre. E. Orphanidès.—p. 44.

Jan. 28, 1922, 12, No. 4

- Treatment of Painful Dilatation of Right Colon. Grégoire.—p. 69.
- Compulsory Antityphoid Vaccination. C. Dopfer.—p. 76.

### Presse Médicale, Paris

Jan. 4, 1922, 30, No. 1

- Military Councils of Revision for the Disabled. L. Bernard.—p. 1.
- \*Diagnosis of Ileus. A. C. Guillaume.—p. 2.

**Diagnosis of Acute Obstruction of the Intestine.**—Guillaume urges the necessity for roentgen-ray examination in every case in which the diagnosis is not certain. In two of some cases illustrated, this revealed other causes for the symptoms and rendered unnecessary the proposed exploratory laparotomy. No attempt in these cases was made to give a contrast suspension, the shadows proving instructive enough without this.

Jan. 7, 1922, 30, No. 2

- \*Inherited Dystrophia of Bones. A. Léri.—p. 13.
- \*Periodical Oculomotor Paralysis. T. Mironesco.—p. 17.
- \*Fracture of the Clavicle. F. Burian.—p. 17.

**Familial Pleonosteosis.**—This is the term coined by Léri to describe the condition of exaggerated ossification, a diffuse dystrophia of the bones, congenital and inherited, in a father and two children in one family. It is most pronounced in the man but is unmistakable even in the 3 weeks babe. Certain characteristics suggest a Mongolian type of bone growth as is evident in the roentgenograms.

**Recurring Oculomotor Paralysis.**—The paralysis returned during attacks of relapsing fever, and subsided each time as the fever subsided.

**Traction for Fracture of Clavicle.**—Burian gives an illustration of the Figure 8 bandage around the shoulders, connected by a rubber drain tube on the median line of the back with a girdle around the waist, held in place with a band in the crotch.

### Revue de Médecine, Paris

September-October, 1921, 38, No. 9-10

- \*Epinephrin Hyperglycemia. C. Achard, A. Ribot and L. Binet.—p. 447.
- \*Pathogenesis of Asthma. M. Ségard.—p. 457.
- \*Tuberculous Articular Rheumatism. Baron and H. Durand.—p. 471.

**Epinephrin Hyperglycemia.**—The action of epinephrin on the sugar content of the blood was studied on dogs, as also the relations between epinephrin and pancreas extract in respect to the storing and combustion of sugar in this line. They seem to have an antagonistic action. After removal of the pancreas, injection of epinephrin did not increase the sugar content of the blood. Otherwise, epinephrin seemed to check the sugar holding and sugar oxidizing properties of the organism.

**Pathogenesis of Asthma.**—Ségard remarks that Brown's "Asthma" (1917) lists 472 works dealing merely with the pathogenesis of asthma. There is evidently not a single cause. Several factors, internal and external, combine in varying proportions in the clinical picture. Vagotonia is an indispensable element, but inadequate alone to induce asthma. Colloidoclasia is an effect, not a cause. These two elements recall the neurosis and the dyscrasia of the old school. Thus our predecessors, with clinical observation alone, recognized



the main elements of the problem. The final solution must be sought in biology and probably in physical chemistry.

**Subacute Articular Rheumatism of Tuberculous Origin.**—After two years at the front the young man showed signs of chronic infection, tachycardia predominating. After eighteen months of this, tuberculous pleuritis without effusion developed, and was soon followed by a tuberculous process in the lung. Then came a period of septicemia, with two attacks of what seemed to be subacute polyarticular rheumatism, the paroxysms of fever recurring so regularly that they suggested malaria. Tubercle bacilli were found in the blood during the attacks of "rheumatism" and also in the tuberculous swelling that developed in the joint at the time. Baron and Durand give the full details of this and of another case, and emphasize the importance of tuberculosis as capable of inducing attacks of acute articular rheumatism. Such cases were not rare in 1918, but none are encountered now, as life seems to be returning to more normal conditions. Toward the close of the war, tuberculosis seemed to change its character, invading both lungs and running a rapid course, sowing its lesions everywhere, in liver, spleen, intestine, meninges, etc. Measles and influenza may have cooperated in this.

### Schweizerische medizinische Wochenschrift, Basel

Dec. 8, 1921, 51, No. 49

- \*Central Luxation of Hip Joint. E. Bosch.—p. 1129.  
Phorometer Findings in Fatigue. J. Strebel.—p. 1138.  
Improved Epiglottis Lifter. L. de Reynier.—p. 1141.

**Central Luxation of Hip Joint.**—Bosch analyzes eleven cases of central luxation, including four personally observed, and compares them with seventy-five from the literature. Examination through the rectum is decisive for the differential diagnosis. Treatment aims to restore the head of the femur to its place and keep it there, with early exercise of the joint, but without weight bearing until late. The failure to recognize the central luxation is responsible for much damage later. Continuous upward traction insures reduction better than abrupt measures. When the trochanter is seen to have returned to its proper place, it may be possible to reconstruct the acetabulum from its fragments by manipulating them through the rectum. He succeeded in this in one of his four cases. In one case the extension traction took fully twenty hours, with weights of 15 kg. lengthwise and 4 kg. sidewise, before reduction was complete. No attempt at walking should be allowed until after ten weeks. The ultimate outcome was relatively good in his cases.

Dec. 22, 1921, 51, No. 51

- \*Operations for Neuralgia of the Face. A. Jentzer.—p. 1177.  
Geographical Distribution of Epilepsy. J. Wyrsch.—p. 1182.  
\*Banti's Disease in Child. E. Opprecht.—p. 1189.  
Relief from Orange Peel Distillate in Gallstone Case. Seiler.—p. 1191.

**Intracranial Operations for Trigeminal Neuralgia.**—In the first of Jentzer's two cases, the nerve was compressed by deposits of hemosiderin, relics of an old local hemorrhage. The cure of this patient confirms that even neuralgia of central origin may be successfully treated by operative measures. This patient was a frail woman of 57 who had had a leg and an arm amputated since 1915 on account of tuberculous arthritis. The trigeminal neuralgia had first appeared in 1908, and by 1920 had become so severe that the woman did not dare to eat, and in order to prepare her for the retrogasserian resection she was fed by gastrostomy. Her prompt recovery after the operation shows that this technic does not entail much shock.

**Banti's Disease.**—Opprecht gives the details of a typical case of Banti's disease in a boy of 11, with clinical cure after splenectomy. The first symptoms had been noted at the age of 6.

### Archivio Italiano di Chirurgia, Bologna

November, 1921, 4, No. 4

- \*Wounds of Inferior Vena Cava. G. Costa.—p. 339.  
Hernia from Military Service and from Industrial Accidents. E. de Paoli.—p. 389.  
Hernia of Gallbladder in Woman of Sixty-Two. O. Finzi.—p. 449.

**Ligation of Inferior Vena Cava.**—In 1907 Costa was compelled to ligate this vein during removal of a kidney with

calculi and suppuration, and the young woman had apparently no permanent injury therefrom. He describes and compares this experience with cases published by others, a total of 16 cases in all. In 22 other cases the injured vena cava was sutured. Ligated above the mouth of the left renal vein, the sudden arrest of the circulation through the vein is always fatal, but ligation below the renal vein seems to be free from permanent injurious consequences, although there may be transient edema in the leg below, and transient albuminuria. Anuria and thrombophlebitis are the more important post-operative complications sometimes observed, but the thrombophlebitis seems to be merely the common surgical phenomenon of the kind, and not traceable to the ligation in itself. Anuria proved fatal in 2 cases, but the circumstances of the cases relieved the ligation from responsibility for this.

### Pediatria, Naples

Dec. 15, 1921, 29, No. 24

- \*Etiology and Pathogenesis of Scarlet Fever. G. di Cristina.—p. 1105.  
Prevalence of Kala-Azar in Messina District. G. Milio.—p. 1109.

**Experimental and Bacteriologic Research in Scarlet Fever.**—In Di Cristina's research during the last two years, young rabbits and young guinea-pigs inoculated by the vein or in the peritoneum with cultures from blood and bone marrow from human scarlet fever cases developed a disease that proved fatal in a few days, with cachexia and hyperemia of the viscera, but without the special features of scarlet fever. From the blood and spinal cord of clinical scarlet fever cases, he cultivated an anaerobe, extremely minute. It can be cultivated indefinitely, but requires from six to twelve days to show the first trace of growth. In this preliminary communication he does not describe the culture mediums used except that all tested had catalyzing properties, and oxygen was excluded. This anaerobe was agglutinated by the blood of rabbits injected with these cultures or with blood from scarlet fever patients. There was no deviation of complement in the clinical cases, using these cultures for the antigen, but rabbits treated with the cultures responded with positive deviation of complement, using an extract of scarlet fever scales for the antigen. His research in this line is now at a standstill as no more cases of scarlet fever have been encountered, but he is studying whether animals given preliminary treatment with sterilized cultures will prove immune to infection. He is also planning systematic prophylaxis on this basis for localities where scarlet fever is prevalent.

### Policlinico, Rome

Dec. 19, 1921, 28, No. 51

- Appendicitis of Amebic Origin. E. Sanfilippo.—p. 1715.  
\*Recurring Cryptogenous Fever. B. Masci.—p. 1719.  
Grain Itch in Romagna in 1921. D. Pantaleoni.—p. 1724.  
\*Stringy Urine. A. Capogrossi.—p. 1724.

**Cryptogenous Intermittent Fever.**—Masci could only exclude one disease after another in the case described, no cause being discoverable for the recurring periods of five or six days of fever and malaise followed by about ten days of normal temperature. The malaise progressed to fatal cachexia in nine months. There had been fourteen attacks in all, returning with rhythmic regularity. Necropsy was not allowed.

**Threads in Urine.**—Capogrossi describes the glycerobacterium which is responsible for *urine filante*. It has no pathologic importance, he says.

Jan. 2, 1922, 29, No. 1

- \*Vitamins as Factor in Immunization. M. D'A. Biondo.—p. 3.  
Flail Shoulder from Infantile Paralysis. L. Bosco.—p. 5.  
Congenital Luxation of Head of Radius. A. Kraus.—p. 8.  
\*Protein Therapy in Venereal and Skin Diseases. M. Artom.—p. 10.  
\*Health Certificate for Candidates for Matrimony. C. Gasparini.—p. 12.  
Present Status of Bismuth Paste for Fistulas. L. Dominici.—p. 14.

**Vitamins as Factors in Immunization.**—Biondo here relates that his series of experiments on pigeons deprived of different vitamins, showed among other things that they lost their immunity to anthrax when suffering from this deficiency diet. By restoring vitamin B to the diet given the pigeons, this loss of the immunity to anthrax was prevented. The vitamin B thus proved itself, he says, a true *immuno-tropho-stimulina*.



**Parenteral Protein Therapy in Venereal and Skin Diseases.**—Artom states that the injection of milk was extremely effective in most of the fifty-eight cases of venereal ulcers with inguinal adenitis, the inguinal lesions promptly retrogressing, even buboes with fluctuation not requiring incision. No benefit was apparent in eczema but in two cases of toxic pruritus improvement was realized that has persisted to date. Gonococcus lesions showed some improvement but not as much as under vaccine treatment.

**Health Certificate Required of Candidates for Matrimony.**—Gasparini believes that the numerous objections to these certificates are outbalanced by the educative effect which they would have on the public. He extols the regulations in Norway and Sweden which provide for an exchange of health certificates between the contracting parties before marriage, but the marriage authorities do not inspect the certificates. The responsibility is thus left entirely to the contracting parties. He thinks the time is coming soon when it will be as much a matter of course to make inquiries about the health as it is now to make inquiries about the financial and social standing.

### Rivista Critica di Clinica Medica, Florence

Nov. 25, 1921, 22, No. 33

\*Vaccine Therapy of Tuberculosis. G. Martinotti.—p. 385.

\*Formaldehyd Serologic Test for Syphilis. A. Terzani.—p. 388.

**The Antibodies in Tuberculosis After Vaccine Treatment.**—Martinotti agrees with Calmette that the antibodies are not the essential elements in the defense against infection but are merely the index of the reaction of the cells to the infection. When the cells are reacting properly to the invading agent, the latter is kept within bounds that are harmless. A vaccine therefore need not be adapted to kill the tubercle bacilli; all that is needed is to activate the cell defenses. The cells then will successfully repel the invasion. He advocates repeated injections of minute amounts of the vaccine to induce progressive immunization. Maragliano, on the other hand, attempts to transform conditions permanently with a single large injection, as in prophylaxis of smallpox.

**Formaldehyd Serologic Test.**—Gaté noticed that addition of liquor formaldehydi to blood serum caused it to gel in the presence of syphilis, and otherwise not. Terzani obtained conflicting findings in 226 tests with this method.

### Gaceta Médica de Caracas, Venezuela

Aug. 31, 1921, 28, No. 16

\*Malaria in Cojedes District. G. Barreto Méndez.—p. 245. Cont'd.  
Protection of Society Against the Venereal Peril. L. Razetti.—p. 253.

**Malaria in Venezuela.**—Barreto Méndez describes conditions in regard to malaria in the state of Cojedes where it is prevalent and severe. It is responsible for 3.5 per cent. of the general mortality, the death rate from malaria being 9 per thousand of the population.

### Memorias do Instituto Oswaldo Cruz, Rio de Janeiro

1921, 13, No. 1

\*Helminths of Brazil. XIII. L. Travassos.—p. 5.  
\*The Urogonimus Genus. A. Lutz.—p. 136.

**The Trichostrongylidae Leiper Family.**—Travassos' monograph is accompanied by fifty-seven plates with a total of 249 representations of different members of this family. (A French translation accompanies the article.)

**Urogonimus.**—Lutz gives illustrations of what he says is a new form of Leukochloridium which he found in a mollusk. (In both Portuguese and German.)

### Revista Médica del Uruguay, Montevideo

December, 1921, 24, No. 12

\*The Process of Ossification in Children. V. Escardó Anaya.—p. 565.  
\*Puerperal Gas Gangrene Septicemia. J. C. Estol and E. Hormaeche.—p. 573.  
\*Clinical Aspects of Anthrax. J. Princivale.—p. 579.

**Ossification in Children.**—Escardó Anaya here presents his fifth communication on this subject, the results of roentgen-ray study of the hip in normal children of different ages.

**Gangrenous Puerperal Septicemia.**—The young woman presented intense jaundice and high fever and died the day after entering the hospital. Signs of a criminal abortion and *Bacillus perfringens* in the blood explained the gangrenous septicemia. The case teaches the importance of bacteriologic examination of the blood, with an anaerobic medium, to allow antigangrene serotherapy in time.

**Anthrax.**—Princivale classifies the anthrax lesions in eight groups as he has studied them in 119 cases. Of the ninety-five cases of malignant pustule none proved fatal, but all died of the six with anthrax of what he calls the *ampolla brava* type. He urges study of the atypical cases in man and animals, as they are liable to fail to get the specific serotherapy, and thus may spread infection.

### Semana Médica, Buenos Aires

Oct. 20, 1921, 28, No. 42

Bacteriotherapy of Influenza and Its Sequelae. J. J. Vitón.—p. 511.  
Nervous and Mental Features of Syphilis. N. V. Greco.—p. 518.  
Prophylaxis of Trauma of the Eye. R. Argañaraz.—p. 520.  
\*Uncontrollable Vomiting of Pregnancy. J. A. Gabastou.—p. 525.  
Lethargic Encephalitis. L. Almeida Huerta.—p. 528.  
\*Autovaccines in Therapeutics. F. Jauregui.—p. 530.  
Classification of Influenzal Affections. R. Rivas Jordán.—p. 531.

**Uncontrollable Vomiting of Pregnancy.**—The vomiting in Gabastou's case had begun at about the sixth week of the eighth pregnancy, and had persisted for a month rebellious to all measures. There had never been any special tendency to vomiting in the previous pregnancies. As a last resort, Gabastou proceeded to evacuate the uterus, not letting any one know that the procedure was a sham. This psychotherapy answered the purpose, the vomiting and fetid ptialism subsiding, and the pregnancy has continued its normal course. He cites a few instances of arrest of uncontrollable vomiting by a fright, a fire in the house, etc. After excluding organic causes in the digestive and genital apparatus in these cases, we can accept a nervous psychic factor which acts like a mordant to enhance the effect of the primary toxic cause resulting from the pregnancy. By psychotherapy we may be able to eliminate this psychic factor, and when the influence from this is out of the way, the organism soon masters the toxic factor.

**Autovaccines.**—Jauregui argues that the blood represents the actual situation of the organism in relation to infection, especially in relation to tubercle bacillus and associated infections. For example, in one sample of blood examined, 100 toxin units were found. The tubercle bacillus was responsible for 50; the streptococcus for 25; the staphylococcus for 10, and the tetragenus for 15. Injection of this blood supplied the stimulus for production of antibodies in exactly the proportions needed. With this autohemotherapy, he asserts, we apply a means for immunization which surpasses all others in its individual precision in relation to the infected organism.

Oct. 27, 1921, 28, No. 43

\*Laryngeal Complications of Influenza. E. V. Segura.—p. 547.

**Laryngeal Complications of Influenza.**—Segura gives the details of thirteen cases of laryngitis with edematous or phlegmonous infiltration or necrotic process in the throat, all with or without a tendency to spasmodic contraction. The influenza had been of a mild type in these cases, and the patients did not feel obliged to stay in the house. Those with edematous infiltration who obeyed his orders and did not expose themselves to the cold, and refrained from speaking and laughing, had no further spasms. One patient recovered after an emergency tracheotomy, and another died during the operation. The necrotic lesions in the woman's throat were coated with a false membrane. Another patient was a physician of 65, and symptoms of acidosis developed after the tracheotomy and proved fatal. Only one of the thirteen patients was a child.

### Siglo Médico, Madrid

Oct. 8, 1921, 68, No. 3539

Symptomatic Morphinomanias. C. Juarros.—p. 957.  
Drinking Water of Escorial District. B. Hernández Briz.—p. 958.  
Case of Mistaken Assumption of Cancer. T. Cobo Martínez.—p. 959.  
War Surgery. F. Rico Belestá.—p. 961.



Oct. 15, 1921, **68**, No. 3540

- Hysteria in Child. E. Fernández Sanz.—p. 981.  
Trigeminal Neuralgia. D. A. Morales.—p. 983.  
The Bacteriophage. Algalia.—p. 984.  
Intubation Versus Tracheotomy. Martínez Vargas.—p. 986.

Oct. 22, 1921, **68**, No. 3541

- Causes of Failures in Intraspinal Treatment of Neurosyphilis. G. L. Lafora.—p. 1606.  
Paraguay Tea in Therapeutics. F. J. Cortezo.—p. 1010. Cont'd.  
Proteinemic Diathesis. M. Bermejillo.—p. 1013.

Nov. 12, 1921, **68**, No. 3544

- Technic for Intraspinal Treatment of Neurosyphilis. J. M. de Villaverde.—p. 1085.  
Diabetes Mellitus. F. Huertas Barrero.—p. 1089.  
Tuberculin in Diagnosis and Treatment. A. Wolff-Eisner.—p. 1092. Cont'd.  
Malaria in the Army. F. Blásquez Bores.—p. 1094.

**Deutsche medizinische Wochenschrift, Leipzig**Dec. 1, 1921, **47**, No. 48

- \*Experimental Cancer and Irritation Theory. J. Fibiger.—p. 1449. Conc'n No. 49, p. 1481.  
Cancer of Thumb in Cobblers. H. Stahr.—p. 1452.  
Effect of Lumbar Anesthesia on the Smooth Musculature. A. Mayer.—p. 1454.  
Clinical Signs of a Pyramid Affection Involving the Upper Extremities. P. Matzdorff.—p. 1458.  
Significance of the Rugae of the Stomach for the Diagnosis of Gastric Ulcer. F. Eisler and R. Lenk.—p. 1459.  
Attempts to Induce Changes in the Germinal Cell. L. Grote.—p. 1461.  
Comparative Investigations with "Official Extracts" for the Wassermann Test. C. Stern.—p. 1463.  
Effect of Hydrogen-Ion Concentration on Vital Staining. Pohle.—p. 1464.  
Migration of Projectile into Sound Knee Joint. F. Hagner.—p. 1465.  
Treatment of Incontinence of Urine. H. Flörcken.—p. 1466.  
Chronic Joint Affections in General Practice. G. Ledderhose.—p. 1466.

**Experimental Cancer.**—To be reviewed elsewhere.Dec. 8, 1921, **47**, No. 49

- Resisting Powers of Pathogenic Germs. H. Ziemann.—p. 1483.  
Inhibiting Action of Formaldehyd in Serologic Tests. Dold.—p. 1485.  
A New Flocculation Reaction in Syphilis. H. Hecht.—p. 1487.  
\*Residual Nitrogen Content of the Blood. M. Rosenberg.—p. 1488.  
\*Intracardiac Injection of Epinephrin. G. Kneier.—p. 1490.  
Intracardiac Injections: Anatomy and Technic. Vogt.—p. 1491.  
\*Intraspinal Injection of Air (Encephalography). A. Bingel.—p. 1492.  
Value of Gum-Salines in Loss of Blood. F. Külz.—p. 1493.  
Diagnostic Nerve Blocking. K. Scholl.—p. 1494.  
Partial Excision of Nail in Paronychia. A. Hintze.—p. 1494.  
Biology of the Skin. O. Gans.—p. 1495.  
\*Dangers of Petrolatum Vehicle for Phenol. Boenninghaus.—p. 1497.  
Unreliable Clinical Thermometers. H. Kritzler.—p. 1497.  
Tumors in General Practice. G. Ledderhose.—p. 1498.

**The Residual Nitrogen Content of the Blood in Relation to the Residual Nitrogen Content of the Body.**—Rosenberg found that the residual nitrogen content of the blood is not an absolutely accurate measure of the total retention of nitrogen in the body, as there is not a complete parallelism between the retention in the blood and in the tissues. He, therefore, never confines himself to an estimation of the residual nitrogen content of the blood alone, but determines also the retention of urea, creatinin and indican, in any effort to judge the character of renal insufficiency.

**Intracardiac Injection of Epinephrin in Acute Cardiac Paralysis.**—Kneier holds that in the presence of acute paralysis of the heart, when other resuscitative measures fail, there is an absolute indication for the intracardiac injection of epinephrin. This injection should be made not later than three minutes after the patient stops breathing, as by-effects are scarcely to be feared and there are no technical difficulties.

**Technic of the Intralumbar Injection of Air in Connection with Encephalography.**—Bingel discusses his revised technic for encephalography or the roentgenographic representation of the brain. The method is based on the injection of air into the lumbar portion of the dural sac, while, at the same time, corresponding quantities of spinal fluid are removed. Two fine needles are introduced at the same time, one for the air, the other for the escaping fluid. At the Brunswick meeting of the Gesellschaft deutscher Nervenärzte, held in September, 1921, he reported 100 cases in which encephalographic data had been secured in this manner. No serious damage to patients resulted from the experiments though such by-effects as headache, dizziness and nausea were sometimes produced. The diagnostic results were very satisfactory and in a few cases even favorable after-effects were noted.

[Dandy's early work in roentgenography of the brain after injection of air into the spinal canal was described in THE JOURNAL, Nov. 8, 1919, p. 1468.]

**Liquid Phenol in Liquid Petrolatum a Dangerous Substitute for Phenol in Glycerin.**—Boenninghaus reports that a young physician prescribed as ear drops for a boy of 10, suffering from earache, liquid phenol in liquid petrolatum. Phenol does not dissolve in liquid petrolatum, but is precipitated undissolved. In this instance a glass dropper was used to administer the drops, in which case the pure phenol collects for a moment in the tip and is injected at first alone. The results for the child's ear were terrible. Half of the tympanic membrane was destroyed, and the external meatus and the auricula were badly corroded.

**Medizinische Klinik, Berlin**Nov. 27, 1921, **17**, No. 48

- \*Radiotherapy of Tuberculosis. O. de la Camp.—p. 1435.  
\*Testicle Transplantation in Man. Enderlen.—p. 1439.  
\*Changes in Diseases. A. Strümpell.—p. 1442.  
\*Treatment of Varicose Veins. Linser.—p. 1445.  
\*Whooping Cough in Adults. A. Schwenkenbecher.—p. 1447.  
Microscope for the Capillaries. O. Müller.—p. 1448.  
Collective Inquiry on Treatment of Septic Abortion.—p. 1450. Cont'd.  
\*Simplified Test for Abderhalden Reaction. E. Abderhalden.—p. 1453.  
Obstetric Cases at Emergency Hospital. E. Runge.—p. 1454. Cont'n.  
\*Radiotherapy of Sarcoma. Holfelder.—p. 1456.  
Recent Literature on Operative Orthopedics. Peltesohn.—p. 1458.

**Radiotherapy of Tuberculosis.**—This is the opening lecture of a graduate course on this subject. Da la Camp exclaims "We are all children of the sun. The entire organic life of our planet is conceivable only in connection with the central sun source of light and energy, and it is amazing that the worship of the sun in primitive religions and the helioses of the Greeks, the solarium of the Romans and the sonnenheil mountains of the Germanic tribes have been so little heeded and actually forgotten for so many centuries. From custom, from indolence, from fashion, from the example of others, human beings have shut off the skin more and more from the health-bringing sunlight." He discusses the light, heat and chemical rays from the physical, chemical and biologic standpoints remarking in conclusion "Sunlight, radium and the roentgen rays act by arousing and strengthening the natural defensive forces and directing their energy toward the foe. It is not a specific mode of treatment, and it profits by all effectual adjuvants of any kind, tuberculin treatment in particular, as the aim of ray treatment is after all to induce a toxin-proof condition by an autotuberculinization." We are merely returning to the empiric heliotherapy of the ancients. "Sol est remediorum maximum" wrote Pliny the elder."

**Transplantation of Testicles.**—Enderlen reports four experiences of this kind, and his clinical results and theoretical reasoning have convinced him that testicle transplantation offers no chance of success.

**Change in Frequency and Character of Diseases.**—After living elsewhere for twenty-five years, Strümpell resumed in 1910 his charge of the medical clinic at Leipzig, and he here compares his impressions of diseases now with his earlier experiences. Chlorosis, chronic gastric catarrh, and emphysema have almost disappeared from the record of the clinic, thanks to greater precision in diagnosis, but tabes is just as frequently encountered as ever. He knows of whole series of cases of tabes that were given intensive treatment from the very first infection with syphilis. The classic picture of tabes is less common than the cases with atypical features, and possibly the intensive treatment may be responsible for this. The diagnosis of tabes was always comparatively easy and certain. He declares that the arsphenamin question is by no means definitely settled. His experience has demonstrated, he says, that arsphenamin frequently acts as an agent provocateur for syphilitic injury of the nervous system. Impartial comparison of neurosyphilis before and since the introduction of arsphenamin demonstrates beyond question that the so-called neurorecurrence forms of early syphilitic disease of the nervous system and meninges are quite frequent now while they were, at most, entirely exceptional before. His impression is that this is a frequently encountered unfavor-



able modification of the course of syphilis for which only the direct influence of this commonly used drug can be responsible.

**Injection Treatment of Varicose Veins.**—Linser describes the technic, the by-effects and the results in his ten years of experiences with the local intravenous injection of 0.5 or 1 c.c. of a 0.5 or 1 per cent. solution of mercuric chlorid to induce local thrombosis. In twenty four hours fully half of the drug injected has disappeared from the blood. He has never had any serious by-effects and he has never heard of any since Hammer's fatal case. The needle is introduced into the vein and then the limb is raised, to empty the vein, before the drug is injected.

**Whooping Cough in Adults.**—Schwenkenbecher describes an epidemic of pertussis that ran through a connecting set of five offices, only those escaping who had had whooping cough before. Only a few developed the characteristic whoop, but all affected had a severe cough and catarrhal affection persisting in some for several months and transmitted to their families at home. He protests against the assumption that pertussis is a children's disease, although the greater self control of adults may mask the clinical picture.

**Simplified Technic for Abderhalden Reaction.**—Abderhalden recalls that the dialysis method of demonstrating the defensive ferments, the polarization method, refractometry (Pregl) and the interferometry method of P. Hirsch all give concordant findings, but the technic is complicated. From his experience to date, a simpler and more direct method which he has devised seems equally dependable. The serum under examination is poured into a test tube containing the organ tissue for the test, sterilized by boiling. The tube is then plugged and incubated at 37 C. With placenta tissue, for example, the fluid in the tube shows no change if the serum came from a nonpregnant woman, but if from a pregnant woman, the fluid becomes turbid and finally entirely opaque. The placental tissue also shows traces of disintegration at the points of contact. These changes under the microscope suggest ferment action when the pregnancy is not far advanced. In the ninth and tenth months, the reaction is not much different from that with serum from the nonpregnant. Tests with serum from cases of cancer, dementia praecox, paresis, etc., gave analogous reactions, as he shows with illustrations of a set of tubes. The serum must be free from any trace of hematin and fat. He draws the blood, fasting, on this account.

**Röntgen-Ray Treatment of Sarcoma.**—This review of recent literature on this subject shows plainly, Holfelder reiterates, that roentgen-ray treatment of sarcoma is now the chosen method, which seems to give better results than operative treatment. Everything depends on the correct dosage.

#### Münchener medizinische Wochenschrift, Munich

Nov. 18, 1921, 68, No. 46

- \*Irritation and Irritability. A. Bier.—p. 1473. Conc'n No. 47, p. 1521. The Problem of Proteotherapy. A. Schittenhelm.—p. 1476.
- \*Clinical Observations on Endocarditis Lenta. P. Morawitz.—p. 1478. Rachitis as a Deficiency Disease. W. Stoeltzner.—p. 1481.
- \*Treatment of Rachitis. F. Lehnerdt and M. Weinberg.—p. 1482. Relaxation of Anus with Abscess in Douglas' Pouch.—Läwen.—p. 1484.
- \*Arteriotomy to Relieve Lung Edema. Eckstein and Noeggerath.—p. 1485. Hereditary Pathology of the Skin. H. Werner Siemens.—p. 1487.
- Carrel-Dakin Treatment of Infected Wounds. K. Schlaepfer.—p. 1490. Injections of Cod Liver Oil in Dermatology. W. Patzschke.—p. 1492. Treatment of Puerperal Fever. E. Bumm.—p. 1494.

**Irritation and Irritability.**—Bier discusses the historical development of the theory of irritability as ascribed to muscles, nerves and all live tissues. According to Virchow, whose works Bier thinks might be read with great profit by a wider circle of physicians than at present, irritability is the criterion of every living cell and of every cell derivative. This property manifests itself by the fact that living elements can be aroused to certain activities by stimuli from without; that is, from other elements of the same or other organisms, or from foreign bodies. Every form of life activity presupposes an excitation, an irritation. Irritability is, in other words, the main characteristic of living tissues. The conception of irritation presupposes a reaction. Irritability is not life itself; it is only the criterion of life. It presupposes a definite

physical and chemical constitution of the cell, on which the irritation acts. As to conductivity, this may take place not only through the nerves but also through the blood stream and the neighboring cells.

**Endocarditis Lenta.**—Morawitz is surprised to find that the syndrome of chronic, septic endocarditis is still so little known. Of the nineteen cases that have come to his attention during the last two or three years, only two or three had been previously correctly diagnosed. Most of the patients brought to the clinic a diagnosis of "incipient tuberculosis" or "anemia." Even in the cases in which a cardiac defect had been diagnosed, no attempt had been made to use this partial diagnosis to explain the whole clinical picture. In one instance a colleague objected that the heart defect had existed since youth and that the auscultation phenomena and the size of the heart had not changed, so that it was not likely that the febrile condition which had but recently appeared was in any way connected with the heart defect. In another case, on account of a tumor of the spleen and high temperature in the evening, malaria was suspected, and a diastolic murmur at the aorta was not regarded as having any connection with the disease in hand. Reports indicate that chronic, septic streptococcus endocarditis has become more frequent in Germany in recent years. Morawitz suggests that, if a heart defect (more particularly, an aortic murmur) is diagnosed, the question be considered whether the other symptoms are not associated with it. If, furthermore, anemia, tumor of the spleen and remittent fever are in evidence, the diagnosis of slow endocarditis becomes more plausible. The absence of streptococci in the blood does not exclude such a diagnosis. In addition to the rather frequent, though often inconspicuous hemorrhagic focal nephritis, endocarditis lenta may have associated with it diffuse, chronic glomerulonephritis, with symptoms of renal insufficiency. Also aneurysms forming spontaneously in unusual places point to endocarditis lenta.

**Treatment of Rachitis with Epinephrin.**—Lehnerdt and Weinberg have used epinephrin in the treatment of thirty cases of rachitis, in twenty-one of which the patients were either cured or much improved. They regard the subcutaneous use of epinephrin, together with calcium carbonate, as a valuable clinical method in all severe cases of rachitis; especially where the ordinary antirachitic treatment does not accomplish results. They succeeded, in most cases, in changing over the whole mental and physical status and getting the children to walk in a short time, often a marked improvement in the mental condition and in the appearance being noted at the end of a week. It was found that about the only refractory cases were those in which the rachitis was not solely responsible for the backward development.

**Arteriotomy in Place of Venesection in Pneumonia and Lung Edema.**—In the presence of acute heart weakness in consequence of disturbances in the pulmonary circulation, such as occasionally occurs in inflammatory processes of the lungs or in lung edema, Eckstein and Noeggerath, on the basis of results in four cases, recommend severing the radial artery and the removal of from 100 to 150 c.c. of blood in the case of children from 1 to 4 years old. It should, however, be done only as a last resort when ample venesection fails to produce results. They ligated the artery afterward.

#### Wiener klinische Wochenschrift, Vienna

Oct. 27, 1921, 34, No. 43

- \*Cardiac Asthma and Stenocardia. F. Chvostek.—p. 519.
- \*Specific Treatment of Tumors. R. Bauer and W. Nyiri.—p. 520. Hormone Therapy. O. Fürth.—p. 521.
- Trials of the Bacteriophagum in Disinfection. T. Watanabe.—p. 522.

**Cardiac Asthma and Angina Pectoris.**—Chvostek protests that the behavior of the peripheral vessels and the influence of the nervous system as factors in cardiac asthma, stenocardia and angina pectoris have been comparatively neglected hitherto. He explains the nervous mechanism of the paroxysm, attributing the characteristic pain to a combination of neuralgia and reflex phenomena. Overexcitability of the subcortical spinal centers and vegetative nervous system may induce pain phenomena exactly like those with organic disease of heart and vessels.



**Specific Treatment of Tumors.**—Bauer and Nyiri recall that specific treatment of tumors consists in incorporating in the tumor carrier, in some manner, tumor material selected on the basis of various etiologic factors. The most common method has been autolysate therapy, which they have also tried but without satisfactory results. The researches of Joannovics (1920), who by the injection of carcinoma solution obtained by trypsin digestion secured favorable results, caused them to renew their investigations. They acted on the assumption that the given effects of such solutions were due to the presence of considerable quantities of only slightly changed albumin substances of high molecular weight. The chief problem, therefore, seemed to be to convert the carcinoma substance into a soluble albumin substance of high molecular weight, differing as little as possible from the mother substance. They treated the previously prepared carcinoma tissue with steam and after many trials succeeded in dissolving 80 per cent. of the substance, and prepared a solution containing a high percentage of this atmidalbumin. From this solution they were able to derive about 60 per cent. of the mother substance in the form of atmidalbumin and atmidalbumose. These substances were first used in animal experimentation and then were tried in incurable carcinoma. In such incurable cases, no harmful effects were noted, nor was there any favorable reaction, as was to be expected. Later, they injected autogenous preparations into patients who had been operated on, to which they reacted with chills and slight rises of temperature, whereas, after injection with heterogenous solutions, no reaction was ever observed. The autogenous preparations were given in 0.05 gm. doses, dissolved in 5 cm. of water or physiologic sodium chlorid solution, and reboiled. The injections were made intravenously, at intervals of several days. They are not ready as yet to report on final results, but believe they are safe in recommending the method as being simple and harmless, and in harmony with the results of recent research in this field.

### Zeitschrift für Geburtshilfe und Gynäk., Berlin

Nov. 12, 1921, 84, No. 2

- \*Serologic Tests in Pregnancy. A. Stühmer and K. Dreyer.—p. 289.
- Do Anatomic Changes in Fetal Membranes Influence Time of Rupture? H. Naujoks.—p. 304.
- \*Retransfusion of Extravasated Blood. R. Zimmermann.—p. 335.
- \*Febrile Abortion. W. Offermann.—p. 356.
- Transmission of Bacteria Between Parturients and the New-Born. E. Clauss.—p. 384.
- \*Ruptured Tubal Pregnancy. E. Löhnberg.—p. 404.
- Weight of the Pregnant. H. Lorenzen.—p. 426.
- Nature of Saprophytes in Female Genital Canal. Sternberg.—p. 447.
- Vaccine in Diagnosis and Treatment of Gonorrhea in the Female. E. R. von Weinzierl.—p. 468.

**Unreliability of Serologic Diagnosis of Syphilis During Pregnancy.**—Stühmer and Dreyer applied parallel Wassermann and other serologic tests twice a week in their maternity cases, and they thus have a series of 1,000 tests of parturients' serum, with 2,500 control tests of known syphilitic or nonsyphilitic serum. These experiences show that the serum of healthy women may respond positively to the Wassermann test during pregnancy and childbirth. Unreliable findings were obtained in fully 10 per cent. The retroplacental blood is especially liable to respond misleadingly, and also the blood in the umbilical vein. The fewest erroneous responses were obtained with the Sachs-Georgi flocculation test.

**Retransfusion of Extravasated Blood.**—Zimmermann concludes from his experimental and clinical research that the peritoneum is able to resorb extravasated blood freely, and thus the erythrocytes and other elements in fluid blood in the absence of infection may pass unharmed back into the blood. He advises, therefore, with a ruptured tubal pregnancy to clear out the clots and leave to the natural forces the resorption of the fluid blood. This occurs so rapidly that the erythrocytes reach the blood in a still functionally capable condition. Only when the pulse is too weak and growing weaker, is it best to retransfuse the blood to hasten matters, as a last resource. In a recent case the woman was pulseless, the abdominal cavity full of fluid blood, with compact clots in the small pelvis. He sutured the tube,

removed the clots, and sutured the abdominal incision, the whole intervention complete in 18 minutes, leaving the 1 or 1½ liters of fluid blood undisturbed. Percussion the following morning showed no trace of the fluid, and the woman's aspect and condition were normal. The extravasated erythrocytes in his cases never seemed devitalized, even when the rupture had occurred up to eight days before. His experimental and clinical experience suggest that it might be better in transfusion of blood from another person to inject it directly into the abdominal cavity, instead of into a vein.

**Febrile Abortion.**—Offermann reviews the experiences in Winter's service. They all testify in favor of refraining from active intervention until the fever and streptococci have disappeared, especially with criminal abortion.

**Ruptured Tubal Pregnancy.**—Löhnberg advocates the complete removal of the extravasated blood. Reexamination of patients treated in this way has confirmed the advantages of this, he says, thus warding off infection of the extravasated blood. In fourteen cases he reinfused the extravasated blood, injecting thus between 500 and 1,150 c.c. of blood. It was infused, still warm, after defibrination by stirring with a glass rod, using a glass cylinder, tube and porcelain funnel and filtering through eight layers of mull. The results, he says, were the best imaginable, with no disagreeable by-effects. He declares that this retransfusion of the women's own blood tides them past the danger point, when they have been brought in *in extremis*, as so often happens. In about a sixth of the women with tubal pregnancy, who became pregnant again, the ovum became embedded in the other tube sooner or later, with a second tubal pregnancy drama. The work issues from Füh's service at Cologne, and lists a bibliography of sixty-eight titles.

### Zentralblatt für Chirurgie, Leipzig

Nov. 5, 1921, 48, No. 44

- Notes on Osteotomies. G. Perthes.—p. 1614.
- The Mediastinal Emphysema. W. Jehn.—p. 1619.
- Contrast Suspensions for Pyelography. E. Pflaumer.—p. 1623.
- Increased Frequency of Congenital Clubfoot and Decreased Incidence of Congenital Luxation of the Hip Joint. Blencke.—p. 1625.
- Treatment After Suprapubic Prostatectomy. Geiser.—p. 1627.

Nov. 12, 1921, 48, No. 45

- \*Excision of Portion of Stomach for Ulcer. Ostermeyer.—p. 1648.
- \*Resection or Gastro-Enterostomy for Ulcer. Rosenbach.—p. 1654.
- \*Care of the Stump in Goiter Operations. E. Liek.—p. 1656.

**Partial Resection for Gastric Ulcer.**—Ostermeyer emphasizes that in the crescent-shaped, plastic longitudinal excision of the portion of the stomach wall involved, combined with pyloroplasty, he thinks he has found a procedure that does away with the main objections to other methods. The technic is shown in two illustrations.

**Resection or Gastro-Enterostomy for Gastric Ulcer Distant from Pylorus.**—Rosenbach states that, since gastro-enterostomy does not always give absolutely certain results, it is well to weigh carefully the indications for resection and gastro-enterostomy in each individual case.

**Care of the Stump in Goiter Operations.**—Liek approves in general Capelle's encapsulation of the goiter remnant (for abstract, compare THE JOURNAL, Oct. 8, 1921, p. 1216), but raises two objections. First, the external capsule, at least posteriorly, is not always fully developed, as Capelle also admits. Secondly, the anterior portion of the external capsule is at the same time the posterior fascia of the long laryngeal muscles. If, as is customary, the muscles that are divided in the midline are sutured together again, the so-called external capsule will be brought over the goiter remnant. Any special suturing to the goiter stump would, therefore, appear superfluous. He agrees that a suture through the parenchyma of the stump constitutes the best means of avoiding late infection, but such a suture following resection is not always possible, owing to the friability of the stump. In the last twelve operations he has tried taking the stitches in a longitudinal direction—from pole to pole—instead of transversely. This is surprisingly easy. In the region of the poles the capsule is resistant and adapted to suturing, though elsewhere it may be thin and friable. Liek discusses other advantages of this, and explains his technic of drainage.



## Zentralblatt für Gynäkologie, Leipzig

Oct. 29, 1921, 45, No. 43

- \*The Kielland Forceps. A. Mayer.—p. 1557.  
The Etiology and Treatment of Colpitis Due to Trichomonas. S. Stephan.—p. 1565.  
So-Called Essential Thrombopenia. O. Gragert.—p. 1569.  
A Correction. M. Hirsch.—p. 1577.  
Extraction of the Aftercoming Head of Dead Fetus. E. Sachs.—p. 1578.

**The Kielland Forceps.**—Mayer's statements in regard to this forceps are based on his experience in thirteen cases in the University Women's Hospital, Tübingen. The Kielland instrument was introduced five years ago. Some have condemned the forceps as being difficult to apply. Mayer says, however, that when the technic is thoroughly understood the application is just as easy as with the ordinary forceps. He finds the principal indications for the forceps within the limits of the normal pelvis. High head presentations constitute the main field of its use. High face and brow presentations in particular can be managed with the Kielland forceps with better chances of success than with the usual type of forceps. For a funnel shaped pelvis the Kielland forceps seems to offer distinct advantages. It does not, however, in Mayer's opinion, extend the indications for the use of forceps in the direction of a narrow pelvis. For Mayer it does not take the place of other forceps but merely supplements them. (The Kielland forceps was described in THE JOURNAL, July 9, 1921, p. 142.)

## Zentralblatt für innere Medizin

Oct. 29, 1921, 42, No. 43

- \*Exophthalmic Goiter. E. Seitz.—p. 842.

**Exophthalmic Goiter and the Sympathetic Nervous System.**—Seitz states that among the factors outside of the thyroid gland, a pathologic condition of the sympathetic nervous system has often been held to be the real underlying cause of exophthalmic goiter. Since, according to physiologists, the behavior of the blood sugar is a reliable index for the condition of the sympathetic nervous system, he undertook to test the blood sugar metabolism in fifty cases of strumectomy. A few days before the operation he examined the patient for the blood sugar value, fasting, and also an hour after test ingestion of 100 gm. of glucose. In a portion of the cases the same test was made with 0.75 mg. of epinephrin. In a large majority of the cases, the same tests were made two weeks after the operation, and in a few instances after still longer intervals. From his findings, Seitz concludes that very frequently—but by no means constantly—in affections of the thyroid gland the sympathetic nervous system is abnormally irritable. This is most pronounced in cases of exophthalmic goiter. He thinks that his researches constitute a strong argument against the sympathetic neurosis theory; more especially since, in some cases of severe exophthalmic goiter, no disturbance of the sympathetic system was found. Along with other clinical symptoms, the behavior of the blood sugar would seem a valuable aid in judging of the severity of a given case. He gives the figures for the different groups tested, and adds that they provide further conclusive testimony as to the value of operative treatment of exophthalmic goiter.

## Tohoku Journal of Experimental Medicine, Sendai

Nov. 30, 1921, 2, No. 4, German Edition

- \*The Lymph. S. Osato.—p. 325.  
\*Research on Whales. M. Takata.—p. 344. Idem. M. Sudzuki.—p. 355.  
\*Agglutinating Properties of Bacilli. K. Aoki and S. Kondo.—p. 357.  
\*Types of Agglutination. VIII. K. Aoki and T. Konno.—p. 376.  
\*Viscosity of the Blood. T. Odaira.—p. 396.  
\*Sugar Content of Blood After Cold Puncture. S. Morita.—p. 403.

**The Lymph.**—In this first communication, Osato discusses the comparative antibody content of blood and of lymph, and of means to influence it by lymphagogues. The research was done on fifteen dogs actively immunized against typhoid and sheep erythrocytes. Lymphagogues of the peptone type were most active in this respect.

**Research on Cetacea.**—Takata has been analyzing the milk of the whale. He had 2 liters at his disposal, and compares the results of his analysis with four similar reports on record. Sudzuki describes similar analysis of the pericardial fluid from a whale.

**Modification of Agglutination of Typhoid Bacilli.**—Aoki and Kondo conclude from their extensive research that typhoid bacilli grown in homologous immune serums become so modified that the changes are equivalent to a new race.

**Coagglutination.**—In this eighth report on their research on agglutination, Aoki and Kondo discuss the coagglutination of paratyphoid B and mouse typhoid bacilli.

**Oxygen Content of Blood in Relation to Viscosity.**—Odaira has demonstrated that oxidation of the blood reduces its viscosity. (His article and the following one are in English.)

**Blood Sugar Content of Cold Punctured Rabbit.**—Morita excluded the central mechanism of the regulation of the body temperature by a modified interbrain puncture or cold puncture, as he prefers to call it, and studied the effect on the sugar content of blood and urine.

## Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Oct. 29, 1921, 2, No. 18

- \*History of Dermatologic Society. G. J. Teljer.—p. 2141.  
\*Skin and Venereal Diseases in the Netherlands. J. F. Maas.—p. 2146.  
\*Cosmetics in Ancient Rome. M. A. van Andel.—p. 2164.  
Radiotherapy in Dermatology. W. H. Jolles.—p. 2177.  
Diagnosis in Dermatology. J. W. van der Valk.—p. 2184.  
Albinism. S. Mendes da Costa.—p. 2187.  
\*Parallel Tests of Spinal Fluid in Syphilis. C. Goedhart.—p. 2190.  
\*Zinc Dressing for Leg Ulcers. L. M. de B. Wenniger.—p. 2193.  
Adenoma Sebaceum of Pringle Type. W. L. L. Carol.—p. 2202.  
Trichophyton Marginatum. D. Muijs.—p. 2205.  
\*Scabies in Lepers. J. J. Bloemen.—p. 2207.  
Roentgen Ray Treatment of Trichophytosis. E. Penso.—p. 2210.  
Case of Fox and Fordyce Disease. L. O. Boelstra.—p. 2213.  
Case of Lymphangioma. K. Edel.—p. 2215.  
Case of Idiopathic Xanthoma Disseminatum. Vas Nuncs.—p. 2219.  
\*Case of Gummatous Spondylitis. A. van der Hoop.—p. 2221.

**The Adventures of the Netherlands Dermatologic Society.**—This gala issue of the *Tijdschrift* is dedicated to the Netherlands dermatologists on the twenty-fifth anniversary of their organization. Teljer reviews its history. Maas compares the status of skin and venereal diseases when it was founded with present conditions. Van Andel cites from ancient writers to show the use of cosmetics in their day in Rome.

**The Four Reactions in Syphilis.**—Goedhart found the lumbar puncture fluid normal in 51 of 70 syphilitic patients free from all symptoms of neurosyphilis at the time. In 19, one or more of the "four reactions" were positive, as also in 18 others with symptoms of neurosyphilis. The Wassermann test in the blood of all the 88 was negative. He tabulates the responses to the various tests in the symptomless cases, and also in those with symptoms of neurosyphilis, and compares them with the ultimate outcome. In 2 cases, notwithstanding early and vigorous treatment, the syphilis progressed to tabes or paresis. This suggests the possibility, he says, that the treatment was so vigorous that it injured the central nervous system. His experience impels him to warn against the danger of damage from the so-called abortive treatment. He advocates intermittent mixed treatment, begun as early as possible, keeping the blood and spinal fluid under supervision. With any signs of meningitis, whether there are other manifestations or not, treatment must be continued until the blood and spinal fluid show no further positive reactions.

**Treatment of Leg Ulcer.**—Wenniger expatiates on the social importance of the zinc-glue bandage for leg ulcer which allows the patient to be up and about, and the old rebellious ulcer heals promptly under its influence. After cleaning with benzine he covers the ulcer with a disk of rubber tissue or oiled silk and then smears the leg from toes to knee with the glue, liquefied by heating. The formula is 450 c.c. distilled water; 200 c.c. white gelatin; 200 c.c. glycerin and 150 cc. zinc oxid. When the entire leg is smeared thick with this, a 10 cm. wide gauze bandage is wound from toes to knee. Cotton is then placed over the ulcer and an outer bandage applied. It is left untouched for from one to four weeks, and is then cut off and a new one applied after the benzin cleaning, powdering, and, if there is much eczema, salving with Lassar's zinc and starch paste. Ulcers of years' standing heal under this in a few weeks or months, and years may elapse before there is recurrence, if ever.

**Norwegian Scabies.**—Only thirty-two cases of this are known, including the one here described. It is a special form



of scabies occurring in lepers. The leprosy prevents any itching from the scabies.

**Gummatous Spondylitis.**—The man of 53 had had remittent pains and constant stiffness in the lower spine for twenty-five years, and roentgenoscopy confirmed the probable gummatous nature of the process. No effect from specific treatment was evident but some improvement followed a course of heliotherapy.

### Acta Paediatrica, Stockholm

Dec. 15, 1921, 1, No. 3

\*The Spasmophilic Diathesis. W. Wernstedt.—p. 257.

\*Treatment of the Exudative Diathesis. S. Monrad.—p. 271.

\*Cerebral Rachitis and the Mind. C. Looft.—p. 282.

\*Stomach Functioning in Young Children. P. Hertz.—p. 298.

\*Fatal Aplastic Anemia in Boy of Four. H. Spak.—p. 310.

\*Index of State of Nutrition. U. Hjärne.—p. 324.

Proceedings of Northern Pediatrics Congress.—p. 337. In English.

**Cause and Cure of Spasmophilia.**—Wernstedt declares that his research has demonstrated that the difference in the action of cow's milk and human milk on children with a tendency to spasmophilia is the result of the different relative proportions of salts and sugar in the two kinds of milk. The low sugar content in cow's milk allows the salts in the milk to exert too potent an action. On the other hand, the high sugar content of breast milk prevents its having a spasmogenic action. By adding 55 gm. of sugar to  $\frac{1}{3}$  liter of milk with 12 or 13 per cent. cream, and adding water to 1 liter, we obtain a mixture that contains the ingredients of breast milk and in about the same proportions and calory value. With this mixture he has forged, he thinks, the last link in the chain connecting spasmophilia with the ratio between the salts and sugar in the milk. The effect of this mixture on spasmophilia, he says, actually surpassed that of a change to breast milk. Among his other experiments were some with breast milk concentrated to one third or one fifth, thus bringing the salt content to equal that of cow's milk.

**Cause and Cure of the Exudative Diathesis.**—THE JOURNAL has already chronicled Monrad's assertion that animal fat acts like a poison in children with the exudative-lymphatic diathesis. He here gives a number of examples to show the benefit that follows exclusion from the diet of all forms of animal fat, including cream, butter, egg yolk, bacon, and fat meats of any kind. For infants less than a year old, he proscribes both breast milk and whole cow's milk, allowing only skimmed milk and skimmed milk soup, oatmeal and other gruels, soft mashed potato, apple sauce, etc. For older children he forbids whole milk, cream, butter, bacon, and other fat meats, allowing only skimmed milk, soups, vegetables, gruels, porridge, fruit, honey, marmalade, lean meat, and cocoa and other vegetable fats. No cod liver oil should be taken. The benefit from dropping animal fat from the diet is as pronounced in the lean children of this type as in the doughy, pasty type. Overfeeding in itself is not especially harmful in the exudative diathesis; the danger is from the animal fat in the diet. This and the preceding article are in German.

**Development of the Mind in Rachitis.**—Looft applied four tests to seventy-two normal children and to 134 rachitic children to estimate their mental capacity. He found that the rachitic infants and older children were almost always comparatively backward in the evolution of their intelligence. This backward development was most evident in children 1 or 2 years old. Effectual treatment of the rachitis has a remarkable effect in hastening mental development. A deficit in calcium and in phosphorus is probably responsible for this relative backward development. Even after clinical recovery from the rachitis, the children are not always quite as bright as others of their age.

**Stomach Functioning in Children.**—Hertz found the secretion of acid in twenty-four of thirty apparently healthy children approximately the same as in adults except that it averaged a little less. In 20 per cent. pronounced achylia was found, although there were no symptoms from it. Some infectious or toxic influences are probably responsible for the achylia. It may long remain latent or may induce symptoms and dyspepsia and frequently recurring diarrhea. Two of the six achylia children were reexamined later and normal secretory conditions seemed to have been restored.

**Aplastic Anemia.**—Spak adds another case to the eighteen he has found on record of true aplastic anemia with no tendency to regeneration of the blood. Untreated, it is always fatal. Parkinson's patient recovered after intravenous injections of blood although quite a severe shock followed the second infusion of 500 c.c. of citrated blood in the 12 year old child.

**Index of Nourishment.**—Hjärne applied the Pirquet pelidisi index to 1,713 boys and 1,016 girls in two Swedish schools, and tabulates the findings. They fail to confirm the reliability of this index, at least for the ages between 7 and 18.

### Hospitalstidende, Copenhagen

Oct. 26, 1921, 64, No. 43

\*Surface Tension of Disinfectants. T. Hansen.—p. 673. Conc'n.

**Alcohol Increases Effect of Disinfectants.**—Hansen's extensive research has apparently demonstrated that addition of a small amount of alcohol to a disinfectant reduces the surface tension and materially enhances the bactericidal power. As a typical example of what can be accomplished in this line, we quote only his tests with anthrax spores: 0.1 normal hydrochloric acid required over twenty-nine hours to kill anthrax spores, the surface tension 0.983; 70 per cent. ethyl alcohol required over thirty-one hours to kill the spores, the surface tension, 0.342. On adding the alcohol to the hydrochloric acid, the anthrax spores were killed in half an hour, the surface tension being the same, 0.342. The disinfectants, the action of which was thus multiplied many times by addition of 10 to 20 per cent. of ethyl alcohol or 5 to 10 per cent. of propyl alcohol, were hydrochloric acid, phenol, mercuric chlorid and chromic acid. He theorizes that the alcohol renders the membrane more permeable, and that this effect depends on the surface tension.

Nov. 2, 1921, 64, No. 44

\*Electrodiagnosis. I. B. Eliassen.—p. 689. Conc'n No. 45, p. 705.

**Electrodiagnosis.**—Eliassen describes some sources of error and how to avoid them in electric tests of muscles, and discusses the interpretation of the findings with the latest technics.

Nov. 16, 1921, 64, No. 46

\*Intracranial Aneurysms. T. Pedersen.—p. 721.

**Intracranial Aneurysms.**—Pedersen reports three cases of an intracranial aneurysm, with the necropsy findings: a girl of 13, a man of 61 and a woman of 39. In the woman, syphilis and trauma can be excluded. He is inclined to incriminate influenza as a causal factor, responsible for the changes in the walls of the vessels.

Nov. 23, 1921, 64, No. 47

\*Fatal Poisoning from Injection of Calomel. K. H. Backer.—p. 737.

**Fatal Poisoning from Calomel.**—The calomel had been injected intramuscularly, 1 c.c. of a 10 per cent. suspension at eleven and twelve day intervals, while neo-arsphenamin was being given at shorter intervals. The day after the third injection of calomel, an eruption developed with gingivitis, fever and other signs of mercurial poisoning, fatal in a week. The patient was a man of 48 who had never been treated for syphilis until symptoms of tabes developed. The second patient was a woman of 48 with recurring angina pectoris, stenosis of the aorta, and aneurysm. She died six days after the third injection of 5 cg. of calomel at seven day intervals. This brings to 16 the total number of such fatal cases on record, but in 10 of these the doses had been very large, up to 10 cg. repeated in a week. Backer adds that resorption from the deposit of calomel may be rapid and capricious, or there may be a pronounced idiosyncrasy to mercury and when symptoms developed, we are impotent to check them. The deposit was resected in 8 of the cases, but without much evidence of benefit, while the mutilating operation is a strain on the debilitated patients. No fatalities have ever been reported from the use of the benzoate of mercury. Mercuric chlorid by the mouth, a tablespoonful three times a day of a solution of mercuric chlorid, 20 cg. to 300 gm., usually entails swelling and tenderness of the gums, which testify to its potency. Associated with neo-arsphenamin, this seems to represent the technic best adapted for the class of cases encountered in the usual hospital medical service.



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## THE GROWING MENACE OF BENZENE (BENZOL) POISONING IN AMERICAN INDUSTRY

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BOSTON

Up to 1914, comparatively little coal-tar benzene (benzol,  $C_6H_6$ ) was used in the United States. Because of its solvent properties, it has long been employed on the continent and to a less extent in England in the manufacture of rubber goods and of quick-drying paints and for dry cleaning. But we had not yet begun to produce it ourselves; we imported it from Germany, it was more than twice as expensive as the petroleum solvents, and we therefore used the latter for the great majority of industrial processes.

The outbreak of the war did two things: It shut off the supply from Germany not only of benzene but also of amidobenzene, or anilin, which had become a valued ingredient of compound rubber, and it created a sudden demand for benzene and toluene for the manufacture of explosives, and of anilin for the manufacture of dyes as well as of rubber. Consequently, coke by-products plants were erected to secure benzene and toluene, and the latter was also obtained in the course of the production of illuminating gas. Then came the armistice, the sudden cessation of the manufacture of explosives, and the need for new markets for the great quantities of coal-tar distillates which were thrown back on the hands of the producers. These markets have been found in the rubber trade, especially for tires, footwear, and hose; in sealing mixtures for tin cans; in the shoe trade, for cement; in certain processes in the making of straw hats; as a solvent for fabrikoid, and as a substitute for gasoline in motor car fuel.<sup>1</sup> Benzene, which is a much more powerful solvent than petroleum benzin and naphtha for fats, gums and resins, is now below the latter in price, and the manufacturer has therefore a double temptation to use it. It is probable that we shall presently find the petroleum distillates supplanted by the coal-tar in the making of varnish, quick drying paints and shellacs, and in dry cleaning, if not in the making of spread rubber goods and dipped rubber goods, as is done in Europe.

Before the war, a few cases of chronic benzene poisoning had been reported by Selling<sup>2</sup> of Johns Hopkins from a can factory where rubber dissolved in benzene was used as a sealing fluid. No cases of severe acute industrial poisoning were then on record, but

during the year 1915-1916 I reported fourteen instances of sudden acute poisoning with seven deaths,<sup>3</sup> and since that time the danger of such an accident has become familiar to engineers and chemists and safety experts. The danger of chronic poisoning is less well known, and it seems timely to call the attention of the medical profession to this increasing menace in American industry, to describe the conditions under which it may be looked for, and the warning symptoms. It is important to take into account a possible confusion in names. Benzin is a petroleum distillate, far less toxic than benzene. Another source of confusion is the use in industry of the term "solvent naphtha" to cover, not petroleum naphtha, but a mixture of crude benzene, toluene and xylene.

### ACUTE INDUSTRIAL POISONING

The German literature yields, as one would expect, the largest number of instances of benzene poisoning, both acute and chronic. The German factory inspectors' reports for 1912 contained three cases, two of them fatal. One man was painting with benzene tar paint the interior of a barrel; another, in a dry cleaning establishment, had climbed into the washing machine, which had a little residue of benzene at the bottom. The third, who was in charge of a distilling plant, had neglected to turn on the cold water for condensation, and the fumes that escaped killed him. A case similar to this was reported by the British factory inspectors<sup>4</sup> in 1918. An increase of pressure caused a quicker distillation of vapor than the condenser could deal with. The man, being overcome, revived with oxygen; but, when he returned to work the second night after, he was again overcome and died.

The earliest instances of acute industrial poisoning in American industry seem to have occurred in connection with war industries in 1915-1916. The men were pipe fitters or workmen engaged in distilling benzene or cleaning tanks or, in two instances, sulphonating benzene as a step in the production of phenol (carbolic acid). In more recent years a decided effort has been made to avoid such accidents; but, if a man is susceptible to benzene it takes only a small quantity to poison or even to kill him.

### EXTRAORDINARY SUSCEPTIBILITY TO BENZENE

In a case described by Lewin,<sup>5</sup> the benzene kettle had been empty for twenty-two hours, was washed out twice with steam and three times with cold water, and then it was allowed to stand all night filled with cold water. As the workman went in, a strong current of air was blown in through a pipe. In spite of all

1. The difference between the exhaust gases from gasoline and those from coal-tar distillate motor car fuel is described by Henderson, Yandell: *J. Indust. Hyg.* 3: 145, 1921.

2. Selling, L.: *Bull. Johns Hopkins Hosp.* 21: 33, 1910.

3. Hamilton, Alice: *Industrial Poisons Encountered in the Manufacture of Explosives*, J. A. M. A., 68: 1445 (May 19) 1917.

4. Annual Report, Chief Inspector of Factories and Workshops for year 1918, p. 78.

5. Lewin, L.: *München. med Wchnschr.*, 54: 2377, 1907.



these precautions, he was overcome and fell to the bottom of the tank. Several of his fellow workmen tried to get him out, but all grew dizzy and confused, and had to give it up. Finally, an engineer in a diver's helmet succeeded in rescuing him, and he was revived; but one of the workmen who had helped in the rescue died within ten minutes of inhaling the fumes.

Even greater precautions had been taken in an English tank car which had been emptied of benzene, washed with water, then steamed out, then left for twenty hours full of water, washed out twice, boiled for twelve hours, and finally left for ten days with the 16-inch (40 cm.) manhole open. Nevertheless, the man who was sent in collapsed; and, although he was pulled out in time, one of his rescuers died.

In one of the great steel mills of Pennsylvania, two men were sent to change coils in a benzene tank which had been thoroughly blown out with steam. One of them was not affected at all; the other was overcome by the fumes, and died.

In a benzene refining plant in New Jersey, a man went to the top of a still to see what was wrong. There proved to be a bad leak, and he fainted almost instantly from the fumes; and by the time two others could come to his rescue, which was said to be not more than two or three minutes, he was moribund. Both men who went to help him fainted, but were revived.

The late T. F. Harrington of the State Labor Board of Massachusetts reported two serious poisonings, with one death, in steam fitters repairing pipes in a benzene still, 8 by 5 feet (2.4 by 1.5 meters) with a small manhole 15 by 11 inches (38 by 28 cm.) in diameter. There is no note as to the cleansing of this still, but a stream of compressed air under 60 pounds pressure was fed in by a 2-inch (5 cm.) pipe. At the end of forty-five minutes one of the men, aged 35, grew wildly excited, irrational, and finally lost consciousness. The younger man helped to push him through the manhole, which took twenty minutes, at the end of which time the younger man was found unconscious and dying.

#### PREVENTION OF ACUTE BENZENE POISONING

Such histories as the foregoing show how difficult it is adequately to protect men engaged in work in and about an apparatus that has been used for the production or storage of benzene. Even a Draeger helmet may not be enough, for a workman in a Pennsylvania plant who entered a tank wearing such a helmet was overcome by the fumes and died. The only possible explanation was that the nose-piece of the helmet could not have quite prevented nose breathing, but it shows that such a device is not positive protection. The best method seems to be that described to me by the men in charge of the safety work of the United States Steel Company's plant in Gary, Ind. After washing out the empty tank and steaming it out, they lower into it a cage of white mice; if the mice are overcome by gas, the process of flooding and steaming is repeated until the little animals can be lowered into the tank without showing any effect. If this procedure can be used in mine work for the detection of carbon monoxid, there seems no reason why it should not become general for the detection of benzene.

#### PATHOLOGY OF ACUTE BENZENE POISONING

According to Beinhauer,<sup>6</sup> in acute benzene poisoning the blood in the heart and vessels is fluid, in the veins

of the abdomen, engorged. There are hemorrhages into the gastric mucosa, bloody foam in the air passages, no benzene odor, and no benzene demonstrable chemically. Sury Bienz<sup>7</sup> found conspicuous bright red spots over the body, the blood fluid and dark, petechial hemorrhages into the gastro-intestinal mucosa and pleurae, general venous congestion and bloody mucus in the air passages. Lehmann<sup>8</sup> of Würzburg, experimenting with cats, found a decided variation of susceptibility in individuals, but all of them showed signs of irritation of the mucous membrane, muscular twitchings, and a fall of body temperature. In large doses, there were convulsions, narcosis, very deep respirations first quick then slow, quickened pulse, and death from respiratory paralysis. A narcotic effect begins in cats after two hours' exposure to 20 mg. ( $\frac{1}{3}$  grain) per liter (61 cubic inches) of air, and narcosis is complete in six hours. With 60 mg. (1 grain) the periods are fifteen minutes and one hour, respectively. In man, 15 mg. ( $\frac{1}{4}$  grain) per liter of air produces listlessness and confusion after half an hour, and exposure to from 20 to 30 mg. ( $\frac{1}{3}$  to  $\frac{1}{2}$  grain, or from 2 to 3 parts per 100,000 parts of air) for a few hours may cause loss of consciousness.

#### CHRONIC BENZENE POISONING

The most famous cases of chronic benzene poisoning in the literature are Santesson's.<sup>9</sup> These were nine young women from 15 to 20 years of age with purpura hemorrhagica and hemorrhages from the mouth, the stomach, the nose or the uterus. They were employed in a velocipede tire factory in Upsala using benzene rubber cement. Four of them died after exposures of from three weeks to four months. The most striking finding in these cases was the fall in the number of red corpuscles and the almost complete leukopenia. Thirteen years later, Selling<sup>2</sup> described similar intoxications in girls, aged from 14 to 16, employed in a Maryland can factory in which the sealing mixture consisted of rubber and resin dissolved in commercial benzene. Three patients were brought to the Johns Hopkins Hospital with hemorrhages in the skin and from the gums and the nose. Here also there was evidence of profound blood destruction, the count in one instance falling to 640,000 red corpuscles, 480 white corpuscles, and 8 per cent. hemoglobin. In 1916, McClure<sup>10</sup> reported a case, from the same factory, of bleeding from the nose and mouth, black and blue spots over the body, secondary anemia, and breathlessness. This patient was saved by repeated transfusions of blood, and so was a boy of 17 who entered the hospital in a similar condition a year or so later. That same year, a woman of 57, also employed in this factory, died in the hospital after hemorrhages from the intestine, kidneys and nose, and into the skin.

Harrington<sup>11</sup> of Massachusetts reported five cases with three deaths, from an automobile tire factory. These men were using benzene in building automobile tires, applying it by a cloth to the rubber. Here, also, there were purpuric spots on the skin, hemorrhages from various mucous surfaces, extreme weakness and dyspnea. The red corpuscles in one instance fell to 944,000. In another, the white cells numbered 850, of which only 14 per cent. were polymorphonuclears.

7. Sury Bienz: *Vrtljhrsch. f. gerichtl. Med.* **49**: 138, 1888.

8. Lehmann, K. B.: *Kurzes Lehrbuch der Arbeits- und Gewerbehygiene*, Leipzig, 1919, p. 249.

9. Santesson, C. G.: *Arch. f. Hyg.* **31**: 336, 1897.

10. McClure, R. D.: *Pernicious Anemia Treated by Splenectomy and Systematic, Often Repeated Transfusion of Blood*, *J. A. M. A.* **67**: 793 (Sept. 9) 1916.

11. Harrington, T. F.: *Boston M. & S. J.* **177**: 203 (Aug. 16) 1917.

6. Beinhauer, F.: *München. med. Wchnschr.*, **43**: 915, 1896.



Two hitherto unpublished cases of fatal purpura hemorrhagica caused by benzene fumes were brought before the New York State Workman's Compensation Commission in 1920. The men had been employed on a machine for coating fabrikoid which is thus described: The fabric is fed in from the front to an endless traveling apron, which carries it over heated pipes. The coating mixture runs down from a can suspended above a 4 inch (10 cm.) hole in front, and the whole is encased in a wooden box. The temperature inside the machine is sufficient to volatilize all the solvent. The coating mixture consisted at that time of nitrocellulose, pigment, castor oil, grain alcohol, benzene and ethyl acetate. Fumes escaped from the hole in front, but still more the back, where the hot coated fabric left the machine. From evidence given at the hearing, it seems that nosebleed among the men in this department was of fairly frequent occurrence, and that the labor turnover was great. They worked eight hour shifts, sometimes sixteen hours, but the latter "not very often."

Both of the men who died were young and had always been strong and vigorous up to the time of their last illness. The first one worked for about nine months before he began to have bleeding from the gums, and he noticed small, red blotches on the skin between the ankles and the knees. Three weeks later, March 21, he had a severe nosebleed. He was taken to the hospital, March 24, and died, April 7, after repeated nosebleeds, bleeding from the mouth, temperature over 101, and the appearance of purpuric spots all over the legs up to the thighs. The second man worked for less than six months, sickened February 17, and died March 9. He had been feeling ill, complaining of the poor ventilation in the shop and of loss of appetite, and was very pale. Then, on the night shift of February 17, he had what one fellow workman called a chill and another a convulsion, his nose began to bleed, and blood oozed from the gums. Evidence given by his physician shows that up to his death he had continual bleeding from the nose and mouth, bruise-like blotches appeared on the legs and body, and the temperature ranged from 102 to over 104. In neither case was any blood examination made, and the medical details are very scanty.

The company had made tests of the air around the coating machines, for it was anxious to prevent the escape of the solvent, which it was trying to recover and use again. Something less than 5 per cent. was reported to be the highest concentration of benzene found in the air, and it is evident that the officials considered this amount too little to cause any anxiety.

Newton<sup>12</sup> of Akron, Ohio, has published the only article in American literature on the early stages of slow benzene poisoning. Three chemists were exposed to benzene vapors for about two weeks. Only one complained of ill health; headache, lassitude, anorexia and loss of weight, and then a sudden attack of pain in the abdomen, nausea and vomiting. Newton found the pulse and temperature normal, but there was a marked leukopenia, 1,200, with 39 per cent. large mononuclears. The erythrocyte count was 5,760,000, but the hemoglobin only 80 per cent. He then examined the blood of the other two and found white counts of 1,250 and 1,700, and a low red count, from 3.6 to 4 million. Appropriate treatment resulted in a decided increase in the white cell count, showing the value of periodic

examinations of the blood in workers exposed to benzene.

#### PATHOLOGY OF CHRONIC BENZENE POISONING

Selling's<sup>13</sup> researches and those of Duke<sup>14</sup> show that the pathology of slow benzene poisoning consists in: (1) a direct destruction of leukocytes with reduced formation of new elements; (2) a destructive action on blood platelets and on the megacaryocytes of the marrow from which platelets are formed, and (3) destruction of adult red corpuscles and the prevention of the formation of new ones. These changes occur in the order given, the effect on the reds being especially characteristic of very slow poisoning, the last to appear and the last to disappear with recovery. Of the white cells, the polymorphonuclears suffer most. The blood picture, therefore, is largely negative; adult cells disappear and no young cells are formed. The destruction of platelets accounts for the abnormal fluidity of the blood.

Hektoen,<sup>15</sup> noting that Selling's experiments showed a selective action of benzene on the tissues and cells that are concerned in the production of antibodies and in defense against infection, studied the influence of benzene on the course of infection in animals, and found in rabbits an actual reduction of antibody formation, together with grave lesions in the marrow, a reduction in the number of leukocytes and a reduction in their phagocytic power. Rusk,<sup>16</sup> two years earlier, had shown that benzene-intoxicated animals produced hemolysins and precipitins less efficiently than normal animals.

The work of Weiskotten<sup>17</sup> and his colleagues, although not carried on with this in view, has a decided bearing on industrial benzene poisoning. They have found that the results of exposure of rabbits to benzene vapor are of the same general nature as those produced by subcutaneous injection of an olive oil-benzene mixture. Maximal sublethal dosage causes leukopenia, hemorrhages and slight anemia. After discontinuance of exposure, the total leukocyte curve rises to a permanent general level, lower than that existing before exposure. Their experiments also confirm those of Rusk and of Hektoen; for, during daily subcutaneous injections of an olive oil-benzene mixture, in four rabbits there developed evidences of active acute infection, and in at least two of these it seemed that infections present before the injections began had been "lighted up" by the benzene. In these animals, polymorphonuclear leukopenia did not occur; in fact, there was the usual leukocytosis of acute infection, and the animals died at its height. They conclude that the leukocyte count cannot be safely depended on in connection with the administration of benzene. It seems fair, therefore, to say that it cannot be absolutely depended on in the diagnosis of industrial benzene poisoning, although Newton's experience shows that it is of great value in detecting early cases. A year or so ago, a man employed in a Boston rubber works using benzene cement was taken with nosebleed, breathlessness and weakness, and bruise-like spots appeared over his body. The physician in charge, however, refused to regard the case as one of benzene poisoning because there was a high white cell count. One cannot help wondering whether careful examination might not have

13. Selling, L.: Beitr. z. path. Anat. u.z. allg. Path. **51**: 576, 1911.

14. Duke, W. W.: Causes of Variation in the Platelet Count, Arch. Int. Med. **11**: 100 (Jan.) 1913.

15. Hektoen, Ludvig: J. Infect. Dis. **19**: 69 (July) 1916.

16. Rusk, G. Y.: Univ. California Pub. Pathology **2**: 139, 1914.

17. Weiskotten, H. G.: Gilles, C. B. F.; Boggs, E. O., and Templeton, E. R.; J. M. Res. **41**: 425 (May) 1920.

12. Newton, C. R.; Industrial Blood Poisons, J. A. M. A. **74**: 1149 (April 24) 1920.



revealed some focus of infection which would have accounted for this.

#### PREVENTION OF CHRONIC BENZENE POISONING

The question is, Can it be prevented? Is it possible in view of the marked susceptibility of certain individuals to benzene to protect workers completely against the effect of even small quantities of this poison? T. M. Legge tells of a man dying of typical benzene poisoning after employment for some months in a British rubber factory, yet analyses of the air at different points in the room showed only one part of benzene to 10,000 of air. Recently, I was consulted by a large industrial establishment as to the "possible danger" of exposing men and women to air containing one part of benzene in 200 parts of air, and at times one part in 100. It should be noted that Lehmann found that loss of consciousness might occur when there were from two to three parts in 100,000 of air.

Benzene is used in industry as a solvent, which means that the process is not complete till evaporation has occurred, till the solvent has passed off into the air. But the workman has to breathe this air. Ideally, a strong suction exhaust should be installed at the point of origin of the toxic fumes; but how is this to be done in the varnishing of automobiles, removing shellac from the pews of a church, spreading fabrikoid on textiles, cementing the seams of boots, or building automobile tires? The practical difficulties are insurmountable. The surface covered with benzene is so big that no artificial exhaust can be so placed as to catch all the fumes. Moreover, benzene passes through the skin as well as the respiratory tract.

To the manufacturer, the introduction of this cheap and powerful solvent may seem an advantage; to the physician, interested in the producer more than in the product, it can only seem a disastrous innovation in industry.

240 Longwood Avenue.

### IS THE CONTROL OF DIPHTHERIA LEADING TO ERADICATION?

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The present procedures for the control of diphtheria do not seem to be leading toward the complete eradication of the disease. Since the case rate is approximately the same as that of thirty years ago, and the mortality rate has shown no appreciable reduction during the last few years, the factors utilized for control must be inadequate for eradication.

Eradication is here used as meaning such perfect control of the factors of a disease that epidemic spread becomes impossible. In this sense the term is applicable to the status of yellow fever in the United States, where, during the last century, it frequently reached as far north as Baltimore and Philadelphia in epidemic form; whereas at present its control is so perfect that this disease is no longer a menace to even our southern ports. Similarly, the control measures for typhoid are successful because both the case incidence and the mortality have been increasingly diminishing during the last twenty years. At the present rate of reduction typhoid as a cause of sickness and mortality should soon become practically extinct. Here the main factor would seem to be the successful prevention of transmission and a cumulative elimination of sources of infection.

At the present moment there are no indications that the control of diphtheria will parallel that either of yellow fever or of typhoid. If this be true, the present control measures for diphtheria are not successful.

True, the mortality from diphtheria and croup per hundred thousand population in the United States has been reduced 75 per cent. in the last thirty years (1890, 64 deaths per hundred thousand population; 1920, 15.3 deaths per hundred thousand<sup>1</sup>). Notwithstanding this reduction in mortality, the number of cases per hundred thousand would seem to be approximately the same as thirty years ago. This is asserted on the basis of the following consideration: During the early nineties, various authorities, from personal experience, placed the case mortality rate at from 25 to 40 per cent. On the basis, then, of an average 32 per cent. case mortality and a death rate of 64 per hundred thousand population (40,677 deaths, 62,947,714 population<sup>2</sup>) for 1890, there was an annual case rate for the total population of 200 per hundred thousand. It will be noted here that the case rate is determined from two fairly definite rates: case mortality and population mortality rate. So, then, we may say that in 1890 there was for the total population of the United States a diphtheria mortality rate of 64 per hundred thousand, a case mortality rate of about 32 per cent., and a case rate of 200 per hundred thousand.

In contrast to the rates for 1890, it is found that in the registration area (87 per cent. of the total population) there was for 1920 a mortality rate of 15.3 per hundred thousand, and, since the case mortality is about 8 per cent.,<sup>3</sup> the annual case rate for this average year is 200 per hundred thousand. As additional evidence that the rates for 1920 are approximately correct, the following is presented from a more elaborate report of 1919.<sup>4</sup> From sixty-eight cities with a combined population of 27,148,810 there were reported 65,823 diphtheria cases: a case rate of 243 per hundred thousand population. There were 5,404 deaths, making a case mortality of 8 per cent. and a population mortality rate of 20 per hundred thousand. This population is purely urban, and, to apply these rates to the entire United States, correction must be made for the rural population, where the disease is only 0.6 per cent. as prevalent as in the cities.<sup>5</sup> When this is done it is found that the case rate is somewhat over 200 per hundred thousand population, the case mortality 8 per cent., and the mortality rate slightly over 15 per hundred thousand.

Comparing the year 1890 with 1920, there is 75 per cent. reduction in case mortality (from 32 to 8 per cent.), which results in a 75 per cent. reduction in the mortality rate per hundred thousand population (from 64 to 15.3). But the disappointing feature is that the case rates per hundred thousand population would seem to be about the same (200) for the two average years in question.

#### RESULTS OF ANTITOXIN TREATMENT

During the last twenty-five years this reduction in mortality has been due almost wholly to the use of antidiphtheritic serum, although the more accurate—laboratory—diagnosis has been of great help. During the last twenty-five years, serum treatment has resulted in the saving of a million lives in the United States

1. Mortality Statistics, U. S. Bureau of the Census.

2. Vital Statistics, Part 1, Twelfth Census, U. S., 1890.

3. Estimated from Pub. Health Rep., 1920.

4. Pub. Health Rep., Dec. 17, 1920, p. 3029.

5. Mortality Statistics, U. S. Bureau of the Census, 1910, p. 41.



alone. Notwithstanding this enormous saving, during the same period there has been a loss of about 300,000 lives.

Is the annual sacrifice of more than 15,000 lives to continue indefinitely? Could these be saved by a broader application of accurate diagnosis and serum treatment, or by the Schick test and injection of toxin-antitoxin mixture? It is doubtful whether, by such methods, all, or even a large percentage, could be saved. The limitations of these procedures lie in that they are directed, in the main, against mortality, and not against distribution of infection; the result is that the diphtheria case rates per hundred thousand population would seem to be about the same (200) for 1890 and for 1920. On this basis there are more than 200,000 cases annually in the entire United States with somewhat more than 15,000 deaths. This is not control leading to eradication. True, the reduction of 75 per cent. in case mortality is a splendid achievement: the saving of 45,000 lives annually. Despite this fact, there has been no apparent reduction in cases, and the mortality represented by 15,000 deaths annually means there remains much to be accomplished.

Are such deaths to be prevented by reduction in case rate, or by a further reduction in case mortality? The case rate will probably remain unaffected by even a wider application of biologic procedures which affect only case mortality; on the other hand, reduction in case rate would automatically reduce mortality.

#### THE FOUR APPLIED FACTORS

Perhaps a consideration of the factors underlying present day procedures for the control of diphtheria will illustrate the difference between a reduction in case incidence, which leads to eradication and a reduction only in case mortality, which leaves the case incidence unaffected. As applied today, these factors are: (1) clinical and laboratory diagnosis of the disease and the isolation of the patient; (2) laboratory identification of the healthy carrier and his isolation; (3) the Schick test and immunization, and (4) the use of antitoxin as a curative measure.

Only the first two of these factors are useful in the prevention of infection distribution; the other two are of value in the reduction of mortality.

The correct diagnosis followed by quarantine of the patient and of the carrier has, for about a quarter of a century, been the accepted procedure for the prevention of distribution. In epidemics these factors are utilized with an apparently favorable result. This has been regarded as successful control of the disease. Yet the few deaths in each endemic and epidemic focus throughout the United States mount to an annual toll of more than 15,000 lives.

The utilization of these two factors is resorted to only after the disease has betrayed itself in endemic or epidemic form; they are applied to only recognized cases and identified carriers during disease prevalence; moreover, during interepidemic periods, the mild missed cases and healthy carriers are disregarded. Is not the gradual accumulation, during interepidemic times, of unrecognized carriers associated with oncoming susceptibles responsible for our periodic epidemics? Can such interepidemic carriers be prevented by the activities of health departments, or is it a question of educating the people relative to the major avenues of disease distribution?

In New York City, where the health department is preeminent, there has been during recent years about 1,200 deaths annually from diphtheria. Notwithstanding

this highly efficient organization, the case rate today is, on the basis of a 75 per cent. reduction in mortality due to the use of antitoxin, about the same as that of thirty years ago. The happy result incident to the use of the serum has saved during the last thirty years close to 100,000 lives in New York City. Despite this success there has been a loss of 30,000 lives.

On the basis of greater efficiency in the laboratory diagnosis and the quarantine of carriers, can New York or any other city reduce still further the case rate as well as the mortality rate from this disease? If not, are we to go on indefinitely with 200,000 cases and 15,000 deaths annually in the United States?

The correct diagnosis of a disease is fundamental for the prevention of that disease, but apparently the added accuracy afforded by laboratory diagnosis, together with quarantine, has not appreciably reduced the diphtheria case rate. But here it is to be pointed out that one could hardly venture a guess as to what height the case rate might ascend were not the factor of laboratory diagnosis universally resorted to.

In addition to the serum treatment for the prevention of mortality after symptoms have appeared, there has recently come into use the Schick test for immunity to this disease. Both these factors are for the reduction of mortality.

With special reference to the Schick test for immunity, there is perhaps no argument as to its value for sickness and mortality reduction. Is it useful, on the other hand, in the control of distribution? The injection of the antitoxin for the cure of the disease does not relieve the patient from the carrier state.<sup>6</sup> Presumably the immunization by the injection of toxin-antitoxin mixture has no effect on the carrier state. If this passive immunization neither eliminates nor prevents the carrier state, and at the same time removes the danger signal (the manifestation of symptoms on the part of those who have become infected as a result of transmission) there is developed a false sense of security: security against immediate mortality, but not against an increasing healthy carrier rate!

Should the popularity of the Schick test and of immunization sweep the country with the result that a considerable percentage of children of school age should be immunized, presumably the case rate and the mortality rate would be reduced in proportion to the percentage of children immunized. If this biologic procedure was limited to the 20,000,000 children of school age and the results were wholly satisfactory, the mortality would be reduced by one half. Yet, since one-half the total diphtheria occurs among children under school age, there would remain 7,000 deaths unaffected. If the procedure through the Schick test alone is to become as perfect in the prevention of diphtheria mortality as has the procedure for the prevention of yellow fever and as is that for typhoid, it will be necessary that the 31,000,000 children now living be immunized; in addition, that the 2,000,000 born each successive year be immunized. Presumably the accomplishment of this is not possible; even if it were, the question might be asked, Is it advisable to undertake this scheme with the view of applying it throughout the future generations? The trouble is that immunization of each generation is not permanently effective. It is neither elimination nor a reduction of carriers; rather, it would produce an increase because, as has

6. Rosenau, M. J.: *Preventive Medicine and Hygiene*, Ed. 2, New York, D. Appleton & Co., 1916, p. 167.



been said, immunization lowers the danger signal and obscures the necessity of searching for carriers.

If we assume the more likely possibility that only such communities as have well organized health departments will resort to the Schick test and immunization, with the result that the case rate and the mortality rate are there reduced to a minimum, will not those communities with their high percentage of reservoir hosts of diphtheria bacilli become foci of distribution for surrounding communities which have not taken, and perhaps could not take, advantage of these biologic preventive methods? As long as there is considerable prevalence of diphtheria, the Schick test for immunity is invaluable; but if diphtheria control is to lead to eradication, not only the case and mortality rates, but, in addition, the infection rate, must be reduced.

#### THE FIFTH FACTOR

The four factors discussed would seem to be inadequate. Even through more perfect operation it is not indicated that distribution of infection would be lessened. As emergency measures, however, they save approximately 45,000 lives annually. Despite this, there remains a loss of 15,000 lives annually, and this loss occurs though we have highly organized health departments.

If the four factors cannot be made adequate, there must, then, be added a fifth factor. This is the factor of transmission prevention. In the end it is the continuous blocking of transmission from the mild unrecognized case and from the unidentified carrier which will reduce the case rate and the mortality rate. The accurate diagnosis and quarantine hold distribution in check; yet these methods only limit the ravages of an epidemic, and do not tend to the prevention of epidemics by a reduction in endemic incidence. A reduction in the endemic carrier index—the inter-epidemic case and carrier rate—is the end to be attained.

How is this reduction in the endemic carrier index to be brought about? Are we to rely on biologic methods or on sanitary procedures? At present, biologic methods would not seem to offer much hope. On the basis of these the mortality rate would seem to have reached its irreducible minimum, and the most promising avenue of control would appear to be sanitary procedures which aim at a reduction in the transmission rate. The epidemiologists of laboratory and field experience must determine the major avenues of distribution and devise practical methods for blocking these avenues. Only when these methods are inculcated into the habits and customs of the people will there appear a reduction in the endemic index, and successful control of diphtheria leading to eradication. There will then be a reduction in the number of sources, in transmissions, in new carriers, in new cases, and in deaths. By this endless chain of cumulative reduction, the disease can be brought under permanent control, as has been done in typhoid.

#### CONCLUSION

The eradication of diphtheria will not come through the serum treatment of patients, by the immunization of the well, or through the accurate clinical and laboratory diagnosis of the case and the carrier followed by quarantine; rather it will be attained through the mass sanitary protection of the populace, subconsciously practiced by the people at all times.

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## THE THERAPEUTIC INDEX OF SILVER ARSPHENAMIN

COMPARISON WITH THAT OF ARSPHENAMIN  
AND NEO-ARSPHENAMIN \*

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After perusal of the literature on the subject of silver arspenamin, one is impressed with the fact that the investigators in their studies of the spirocheticidal action of silver arspenamin dwell extensively on the rapid involution of the cutaneous and mucous membrane lesions. Their conclusion that the spirochete is destroyed sooner and more thoroughly is based on the clinical course of the disease and the time elapsing before the spirochete disappears from the initial lesion, rather than on the serologic evidence during the course and at the termination of the intravenous medication. The well-known fact remains, for the present at least, that our guide to the progress of the patient treated for syphilis is the Wassermann reaction. We should not have considered our observation in regard to the therapeutic index of silver arspenamin of sufficient significance to be added to the already voluminous literature on the subject were it not for the fact that the results obtained in our clinic following the treatment of syphilitic patients with the new synthetic drug of the arspenamin group are not in agreement with the observations reported. After comparing the serologic results of the patients who have been treated with silver arspenamin with those obtained from patients who have been treated with arspenamin and neo-arsphenamin, it is our belief that the effect of the new arsenical preparation on the spirochetes is almost nil.

The possibilities of silver arspenamin in the treatment of syphilis were first suggested by Ehrlich and later elaborated by Kolle. According to the latter, the silver arsenic compound contains 22.4 per cent. of arsenic and 14.1 per cent. of silver. The substance is brownish and easily soluble, forming a dark brown solution, in cold water. Kolle and Ritz<sup>1</sup> attributed the superiority of the new drug over arspenamin and neo-arsphenamin to the fact that when the arsenical molecule is combined with the silver molecule, the two metals act in combination. The silver inhibits the multiplication of the spirochetes, and the arsenical molecule anchored to the spirochetal plasma destroys the spirochete.

A considerable number of investigators unanimously agree with Kolle that silver arspenamin is the drug of choice in the treatment of syphilis.

Galewsky,<sup>2</sup> in his experience with silver arspenamin, states that the patients in the primary stage with positive dark field for spirochetes but with a negative Wassermann reaction remain serologically negative a year after treatment as well as throughout the treatment. In our limited experience with this condition in patients, we have found that the Wassermann reaction remains negative regardless of the type of arspenamin used. In the same paper Galewsky states that he has given more than 700 injections. He has combined the

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1. Kolle, W., and Ritz, H.: Deutsch. med. Wchnschr., 1919, No. 18.

2. Galewsky, E. Deutsch. med. Wchnschr. 44: 1326, 1918.



intravenous treatment with mercury, and concludes that the results compare favorably with the results obtained when the patients are treated with the older preparation. The fact that Galewsky administered mercury at the same time that the patient was being given the intravenous medication should exclude his work when the therapeutic indexes of the new and the old drugs are compared. In 1920, after two years of experience with silver arsphenamin, Galewsky<sup>3</sup> is convinced that the Wassermann reaction becomes negative

lesions. He further states that fresh cases always become negative after twelve injections, and old cases almost always. We presume that under the fresh cases Hahn includes patients who have initial and secondary lesions and who are seropositive. Hugo Müller,<sup>6</sup> Houck,<sup>7</sup> Leutz,<sup>8</sup> Favry,<sup>9</sup> and Kreibich<sup>10</sup> are in accord with the opinion of the observers mentioned above that silver arsphenamin is the drug to be preferred to arsphenamin or neo-arsphenamin in the treatment of syphilis.

TABLE 1.—RESULTS WITH SILVER ARSPHENAMIN, 0.2 GM., TOTAL DOSAGE 1.6 GM.

Case	Sex*	Age	Type of Lesion	Duration	Location	Intensity of Wassermann Previous to Treatment	Intensity of Wassermann During Treatment	Wassermann After Completion of First Series
1. H. W. ....	♂	21	Condylomas.....	Indef.	Anus	+4	+4+4+4+4+4+4+4	+4
2. K. K. ....	♂	30	Papulosquamous.....	3 weeks	General	+2	+2+4+3+1+4+4+4	+4
3. D. R. ....	♂	18	Iritis.....	19 days	Right eye	+4	+4+4+1+4+4+4+4	+4
4. G. G. ....	♂	48	Papular.....	1 month	General	+4	+4+3+4+3+3+3+3	+3
5. H. T. ....	♂	27	Latent.....	.....	.....	+4	+4+4+4+4+4+4+4	+4
6. R. B. ....	♂	20	Annular.....	2 weeks	Face	+4	+4+4+4+2+2+2+2	+1
7. M. M. ....	♂	45	Tuberculous.....	4 months	Forearm	+4	+4+4+4+4+4+4+4	+4
8. C. B. ....	♂	18	Keratitis.....	3 weeks	Left eye	+3	+3+2+2 N +2+2+2	+3
9. E. B. ....	♂	27	Tuberculous.....	Indef.	Forearm	N	N +4+4+3+2+1+2	+2
10. J. H. ....	♂	29	Papular.....	2 weeks	General	+4	+4+3+1+1+1+2+2	+2
11. P. B. ....	♂	39	Tuberculous.....	6 months	Forehead	+4	+4+4+4+4+4+4+4	+4
12. G. W. ....	♂	31	Leukoplakia.....	2 years	Tongue	+4	+4+4+4+4+4+4+4	+4
13. H. W. ....	♂	26	Annular.....	2 weeks	Face	+4	+4+4+4+4+4+4+4	+4
14. W. S. ....	♂	24	Annular.....	5 weeks	General	+4	+4+4+4+4+4+4+4	+4
15. C. B. ....	♂	50	Tuberculous.....	5 years	Leg	+4	+4+4+4+4+4+4+4	+4
16. A. B. ....	♂	33	Tuberculous.....	2 years	Left leg	+4	+4+4+4+4+4+4+4	+4
17. I. K. ....	♂	31	Tuberculous.....	1½ years	Forehead	+4	+4+4+4+4+4+4+4	+4
18. B. J. ....	♂	19	Maculopapular.....	3 weeks	General	+4	+4+4+4+1+1 N N	Negative
19. A. H. ....	♂	29	Papulosquamous.....	1 month	Left hand	+4	+4+4+4+4+3+3+3	+3
20. E. K. ....	♂	48	Tuberculous.....	9 months	Scapula	+3	+3+3+4+4+3+3+3	+3
21. I. S. ....	♂	34	Papular.....	3 days	General	+3	+3+3+4+4+4+4+3	+3
22. M. T. ....	♂	28	Relapsing.....	5 weeks	Face	+3	+3+4+4+4+4+4+4	+4
23. W. H. ....	♂	27	Gumma.....	6 months	Right leg	+4	+4+4+4+4+4+4+4	+4
24. A. C. ....	♂	19	Macular.....	2 weeks	General	+4	+4+4+4+4+4+4+4	+4
25. A. B. ....	♂	35	Papulopustular.....	4 weeks	General	+4	+4+4+4+4+4+4+4	+4

\* In this column, ♂ indicates male, and ♀ female.

TABLE 2.—RESULTS WITH ARSPHENAMIN, 0.4 GM., TOTAL DOSAGE 3.2 GM.

Case	Sex*	Age	Type of Lesion	Duration	Location	Intensity of Wassermann Previous to Treatment	Intensity of Wassermann During Treatment	Wassermann After Completion of First Series
26. J. C. ....	♂	37	Papulosquamous.....	13 years	Left palm	+3	+3+4+3+1+1+1 N	Negative
27. E. F. ....	♂	48	Mucous patches.....	1 month	Throat	+4	+4+4+4+4+4+4+4	+4
28. A. G. ....	♂	32	Papular.....	1 month	General	+4	+4+4+3+1+1+1+1	+1
29. E. H. ....	♂	49	Rupia.....	Indef.	Neck	+4	+4+4+4+4+4+4+4	+4
30. H. H. ....	♂	20	Papular.....	1 month	General	+4	+4+4+2+2+1 N N	Negative
31. O. N. ....	♂	54	Tuberculous.....	4 months	Sacrum	+4	+4+4+4+4+4+4+4	+4
32. D. S. ....	♂	27	Latent.....	.....	.....	+4	+4+4+4+4+3+2 N	Negative
33. M. M. ....	♂	24	Latent.....	Indef.	.....	+4	+4+4+4+2+2 N N	Negative
34. B. T. ....	♂	19	Macular.....	2 months	General	+4	+4+4+4+1+1 N N	Negative
35. F. R. ....	♂	17	Macular.....	12 days	General	+4	+4+4+4+3+1 N N	Negative
36. J. R. ....	♂	26	Relapsing.....	3 weeks	General	+4	+4+4+4+4 N N N	Negative
37. A. P. ....	♂	27	Chancre.....	2 weeks?	Penis	+3	+3+4+2 N N N N	Negative
38. J. R. ....	♂	51	Latent.....	.....	.....	+2	+2+4+1 N +2+4+2	+2
39. A. R. ....	♂	53	Gumma.....	1 years	Chest	+4	+4+4+4+4+4+4+4	+4
40. J. A. ....	♂	26	Tuberculous.....	6 months	Left arm	+4	+4+4+3+3+3 N N	Negative
41. E. C. ....	♂	42	Tuberculous.....	4 years	Arm	+4	+4+4+4+4+4+4+4	+4
42. B. F. ....	♂	23	Papular.....	10 days	General	+4	+4+4+4+4+4+4+4	+4
43. J. F. ....	♂	30	Maculopapular.....	2 months	General	+4	+4+4+4+4+4+4+4	+4
44. E. D. ....	♂	19	Chancre.....	3 weeks	Vulva	+4	+4+4+3+2+1+1 N	Negative
45. G. B. ....	♂	26	Annular.....	3 weeks	Face	+4	+4+4+4+2+1 N N	Negative
46. J. D. ....	♂	47	Latent.....	.....	.....	+2	+2+2+2+2+1+2+2	+2
47. T. C. ....	♂	30	Latent.....	.....	.....	+4	+4+4+3+3 N N N	Negative
48. A. C. ....	♂	41	Gastrie.....	Indef.	Stomach	+4	+4+4+4+4+4+4+4	+4
49. W. C. ....	♂	43	Papulosquamous.....	6 months	Palm	N	N +4+3+2 N N N	Negative
50. L. T. ....	♂	40	Gumma.....	2 years	Leg	+4	+4+4+4+4+4+4+4	+4

\* In this column, ♂ indicates male, and ♀ female.

sooner than with the old arsphenamin. In his later work he discontinued combining mercury with his treatments. He held that it was not necessary. It is the contention of Gennerich<sup>4</sup> that, when syphilis is treated with the new arsenical preparation, the results are better than when treated with the old arsenical compounds, even though mercury has been combined with arsphenamin or neo-arsphenamin. Hahn<sup>5</sup> is also of the same opinion as Galewsky and Gennerich that silver arsphenamin causes a rapid disappearance of the cutaneous and mucous membrane

Parounagian,<sup>11</sup> summarizing his study of silver arsphenamin, says: Clinical manifestations in all stages of syphilis have responded to treatment with silver arsphenamin with gratifying rapidity and thoroughness. Our impression is that the response begins more promptly and that the lesions resolve with greater rapidity than is the case with a similar number of treatments with other arsenical preparations. 6. Müller, Hugo: Deutsch. med. Wchnschr. 44: 1415, 1918. 7. Houck, L.: Med. Klin., 1919, No. 24. 8. Levy-Leutz, L.: Deutsch. med. Wchnschr. 45: 1440, 1919. 9. Favry, J.: Deutsch. med. Wchnschr. 44: 1217, 1918; 45: 1358, 1919. 10. Kreibich, C.: Med. Klin., 1919, No. 7. 11. Parounagian, M. B.: A Study of Silver Arsphenamin in the Treatment of Syphilis, J. A. M. A. 77: 1706 (Nov. 6) 1921.



Walson<sup>12</sup> states that no evidence, from animal experimentation or clinical application, has been presented to contradict the impression that silver arspnenamin is the strongest spirocheticide. We believe that the work of Walson, like the work of Galewsky, should not be considered in the light of comparison, since they gave mercury at the time they were giving silver arspnenamin.

Schoenfield and Bernbaum,<sup>13</sup> Goldberger,<sup>14</sup> Kerl<sup>15</sup> and Bruhns and Lowenberg<sup>16</sup> are of the opinion that silver arspnenamin is equal to arspnenamin, but better than neo-arsphenamin.

Our purpose in this paper is not a deliberate study of present data that would prove favorable or unfavorable to silver arspnenamin. The observation that the curative action of silver arspnenamin is inferior to that of the older arsenical preparations has been made at our clinic in the course of treatment of syphilitic patients. The serologic results have been compared

with silver arspnenamin will be designated as Group 1; patients treated with arspnenamin as Group 2, and patients treated with neo-arsphenamin as Group 3. We have employed, throughout, silver arspnenamin, 0.2 gm.; arspnenamin, 0.4 gm., and neo-arsphenamin, 0.6 gm.

Each group consisted of twenty-five patients who were treated twice a week for four weeks. In Group 1, patients received 1.6 gm. of silver arspnenamin; 3.2 gm. of arspnenamin was given to every patient in Group 2, and patients in Group 3 received 4.8 gm. of neo-arsphenamin. The silver arspnenamin was dissolved in 30 c.c. of physiologic sodium chlorid solution and was given slowly intravenously. The technic for the administration of arspnenamin and neo-arsphenamin is so well known as not to require description. Blood for the Wassermann reaction was drawn before each treatment as well as seven days after the eighth injection.

TABLE 3.—RESULTS WITH NEO-ARSPHENAMIN, 0.6 GM., TOTAL DOSAGE 4.8 GM.

Case	Sex*	Age	Type of Lesion	Duration	Location	Intensity of Wassermann Previous to Treatment	Intensity of Wassermann During Treatment	Wassermann After Completion of First Series
51. T. W. ....	♂	45	Papulosquamous.....	2 years	Palm	+3	+3+1+3+1 N +1 N	Negative
52. E. W. ....	♂	21	Condylomas.....	4 weeks	Anus	+4	+4+3+3+3+3+3 N	Negative
53. S. T. ....	♀	24	Latent.....	.....	.....	+4	+4+4+4+4+4+4+4	+4
54. L. S. ....	♀	19	Macular S. ....	3 weeks	General	+4	+4+3+3+3+2+2+3	+3
55. N. M. ....	♀	29	Tertiary S. ....	11 years	Throat	+1	+1+4+4+4+4+4+4	+4
56. C. M. ....	♀	27	Annular S. ....	3 months	Face	+4	+4+4+4+4+4+4+4	+4
57. H. H. ....	♂	35	Papular S. ....	1 month	General	+4	+4+4+4+4+4+4+4	+4
58. A. G. ....	♂	19	Macular S. ....	3 months	General	+4	+4+4+4+4+3+3+2	Negative
59. H. D. ....	♂	42	Papulosquamous.....	6 years	Palm	+4	+4+4+4+3+1+1 N	Negative
60. M. G. ....	♂	19	Macular S. ....	2 weeks	General	+4	+4+3+2+3+1+1 N	Negative
61. C. A. ....	♂	23	Latent.....	.....	.....	+4	+4+4+4+4+4+4+4	+4
62. S. A. ....	♀	22	Maculopapular S. ....	6 weeks	General	+4	+4+3+3+2+2+1 N	Negative
63. J. C. ....	♂	48	Tertiary S. ....	Indef.	Spine	+4	+4+4+4+4+4+4+3	+4
64. A. C. ....	♂	35	Chareot's joint.....	Indef.	Right elbow	+4	+4+4+4+4+4+4+4	+4
65. B. D. ....	♀	36	Latent.....	.....	.....	+4	+4+4+4+4+4+4+4	+4
66. A. J. ....	♀	39	Latent.....	.....	.....	+4	+4+4+3+3+3+4+4	+4
67. F. L. ....	♂	31	Iritis.....	3 weeks	Eyes	+4	+1+3+3+3+3+2+2	+2
68. A. G. ....	♂	28	Tertiary S. ....	Indef.	Face	+4	+4+4+4+4+4+4+4	+4
69. M. F. ....	♀	21	Macular S. ....	5 weeks	General	+4	+4+4+4+4+4+4+4	+4
70. M. R. ....	♂	35	Secondary S. ....	Indef.	Throat	+4	+4+4+4+4+4+4+4	+4
71. M. S. ....	♂	44	Papular S. ....	1 month	General	+4	+4+4+3+3+3+2+2	+1
72. W. T. ....	♂	28	Latent.....	.....	.....	+4	+4+4+3+3+2 N N	Negative
73. J. W. ....	♂	23	Macular S. ....	6 weeks	General	+4	+4+4+3+2+1 N N	Negative
74. C. E. ....	♂	45	Gumma.....	2 years	Abodmen	+4	+4+4+4+4+4+4+4	+4
75. F. B. ....	♀	36	Papular S. ....	1 month	General	+4	+4+4+4+4+3+2 N	Negative

\* In this column, ♂ indicates male, and ♀ female.

during the course as well as at the end of the first series of treatments. Our criterion in determining the comparative value of the three arsenical compounds is the Wassermann reaction. We realize that, in addition to the blood Wassermann examination, a complement fixation test on the spinal fluid is desirable, at least at the end of each series of intravenous treatments. However, with ambulatory clinical patients the procedure could not be considered.

As it is well nigh impossible to find two patients alike in all respects, including the clinical aspects of their disease, we have taken into consideration, when grouping syphilitic patients, their physical make up; their weight and the intensity of the Wassermann reaction before treatment, rather than the type of lesion; the duration of the lesion, and the age of the patient. Sixty-four patients were treated with silver arspnenamin. Of these, twenty-five received their treatments in a manner that permits comparison with patients treated with arspnenamin and neo-arsphenamin. For convenience of reference, patients treated

The serologic work in connection with the study of these cases was done (under the direction of B. L. C.) in the clinical laboratory of Jefferson Hospital, along with the routine Wassermann tests.

The antishoop-hemolytic system is used, and the technic consists in using inactivated serum in 0.2 c.c. amounts. A solution of complement of constant strength is used, against which the amboceptor is titrated each day, and two units of amboceptor are used in the test. Two antigens are used, cholesterinized and alcoholic extract of syphilitic liver; however, the specific antigen is not used with all the serums tested each time, but both antigens are used with a sufficient number of serums each time to have a control on the cholesterinized antigen. The first incubation of the mixture of serum, antigen and complement is done in a water bath at 37 C. for one hour. Then 1 c.c. of a 1:40 dilution of washed sheep cells and 2 units of amboceptor are added separately and incubated for one hour. At the end of this time, readings are taken if the negative controls show complete hemolysis and positive controls show complete fixation.

As a matter of precaution, the tubes are put in the icebox over night and a final reading is taken the following morning.

12. Walson, C. M.: Am. J. M. Sc. **161**:418 (March) 1921. No. 3.  
13. Schoenfield, W., and Bernbaum, G.: Munchen. med. Wehnschr. **66**:1087, 1919.  
14. Goldberger, P.: Med. Klin. **15**:955, 1919.  
15. Kerl, W.: Wien. klin. Wehnschr. **32**:446, 1919.  
16. Bruhns, C., and Lowenberg: Berl. klin. Wehnschr. **56**:914, 1919; **56**:948, 1919.



Among the patients treated in Group 1 were thirteen with secondary lesions varying in duration from ten days to five weeks; one case of latent syphilis; nine patients with tertiary lesions; one case of hereditary syphilis, and one case in the primary stage and seropositive. When the first series of intravenous injections was completed, it was found that only one patient was serologically negative. In Group 2 there were eight patients with secondary manifestations; eight patients with tertiary lesions; two cases in the primary stage and seropositive; five latent cases; one patient referred from the gastro-enterologic clinic with the diagnosis "gastric syphilis," and one case of relapsing secondary lesions. In Group 2 there were thirteen patients who were negative serologically at the end of the first series. In Group 3 there were thirteen cases in the secondary stage, six patients with tertiary lesions, five cases of latent syphilis and one case of Charcot's joint. At the end of the first series of injections in this group there were nine patients who were negative serologically.

Thirty-nine patients, not including those in Group 1, have received from one to six injections of silver arsphenamin. Our impression is that syphilitic lesions have not disappeared more rapidly under the influence of the new drug. We have not examined daily for spirochetes to determine how much treatment a patient may require before the spirochete disappears from the initial lesions, but we have excised a series of secondary lesions from a number of patients and are making histopathologic studies, the findings of which will be the basis of a further communication.

#### SUMMARY

1. Three different groups of patients were treated with silver arsphenamin, arsphenamin and neo-arsphenamin, respectively.
2. The dosage employed throughout the treatment was silver arsphenamin, 0.2 gm.; arsphenamin, 0.4 gm., and neo-arsphenamin, 0.6 gm.
3. We base our determination of the comparative values of the three drugs on the Wassermann reaction.
4. The seropositive findings in Group 1 were changed to negative in only one instance. In Group 2 the positive Wassermann reaction became negative in thirteen cases. In Group 3 the Wassermann reaction was changed from positive to negative in nine cases.

#### CONCLUSION

The serologic comparisons prompt us to conclude that the spirocheticidal activity of silver arsphenamin is far inferior to arsphenamin and neo-arsphenamin in the treatment of syphilis.

## THE ANTISCORBUTIC VALUE OF DEHYDRATED FRUITS\*

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The object of these experiments was to determine to what extent, if at all, the antiscorbutic vitamins are contained in dehydrated fruits.

The experiments consisted in feeding observations on four series of guinea-pigs, weighing from 150 to 200 gm. each at the start. The basis of their diet consisted of a half and half mixture, by weight, of alfalfa meal and white wheat flour, to which 1 per cent. of sodium chlorid had been added. The dried fruits used were peaches, apricots, apples, pears, prunes, cherries and loganberries, and precautions were taken to insure a uniform quality of these products.<sup>1</sup> Water and the moistened alfalfa-flour mixture were fed ad libitum, and varying amounts of fruit were used according to

the results obtained in the preliminary series. The animals were weighed every day or every other day, as their condition seemed to demand. When scurvy symptoms were prominent and marked loss of weight occurred, the amount of fruit was increased in the effort to prevent a fatal issue of the disease. Some difficulty was encountered in getting the animals to eat all of some of the fruits, especially in the cases of loganberries and cherries, making quantitative results with these somewhat question-

able. A recovery after the onset of scurvy was often made more improbable by the loss of appetite occurring as a scurvy symptom, although the amounts of fruit were increased.

In the first two series, which were preliminary in character, 0.5 and from 1 to 2 gm., respectively, of each fruit were used. All of these animals died with scurvy symptoms or secondary infection within from two to four weeks, although those receiving peaches, apricots and apples showed greater resistance to scurvy and infection.

In the third series, in which eight animals were observed, two received apples and the others received either peaches, apricots, pears, prunes, cherries or loganberries. The results were convincing only in the case of peaches and seemed promising in the cases of apricots and apples, although less so in the former. As will be seen by studying the charts of this series, the only animal that survived the scurvy symptoms for a period extending definitely beyond the average life of

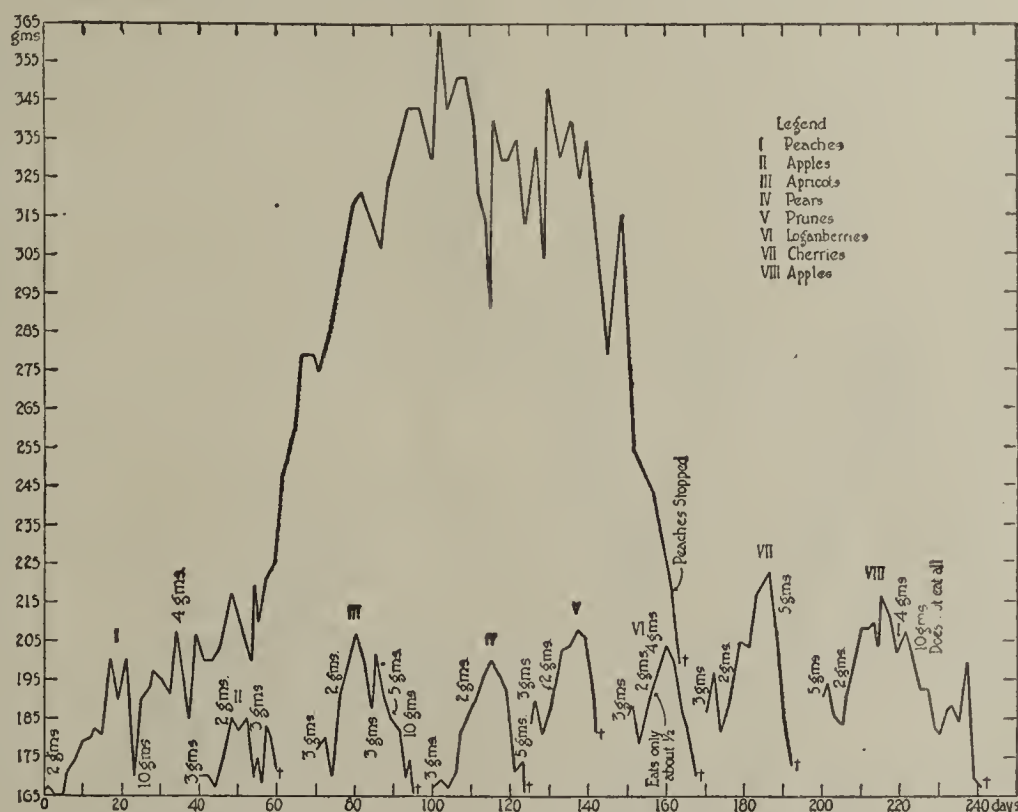


Fig. 1.—Growth curves of guinea-pigs in Series 3. Each guinea-pig is numbered with a Roman numeral.

\* From the Laboratory of Physiologic Chemistry of the University of Minnesota Medical School.

1. From King's Food Products Company, Portland, Ore.



the animals on scurvy diet alone was the one receiving peaches. This animal developed definite scurvy signs (with the others) at about the third week, but made a recovery in two weeks following an increase in the fruit ration to 10 gm. Thereafter it was kept on a fruit ration of 4 gm. and continued to live in apparent health until the one hundred and forty-fifth day. No fruit was given during the three days just preceding its death, which occurred twenty days later following a marked loss of weight. It will also be observed in the weight curves of all the other animals that they lived for periods of from fifteen to twenty-five days, except one of the animals receiving apples, which lingered for forty days on a ration increased to 10 gm.

The fourth series was run to determine whether or not an animal could be kept alive for any length of time on less than 4 gm. of peaches a day, and to check up the previous series in regard to the probable value of apples and apricots. As will be observed by the weight curves, 3 gm. of peaches sufficed to prevent scurvy symptoms only for a period of thirty-five days, and on the appearance of such signs an increase to 4 and later to 5 gm. did not effect a cure. As for the apricots, they failed entirely to bear out earlier indications, as even 6 gm. did not protect the animals sufficiently to maintain life for more than one month.

The two animals fed on 3 and 4 gm. of apples also showed scurvy symptoms promptly, although the one receiving 4 gm. lived for forty-five days after the apple ration had been increased to all it would eat.

Necropsies of practically all of the animals were held, and in all cases definite evidences of scurvy were observed, such as subperiosteal hemorrhages, especially in the limbs and cheeks, evidence of intramuscular and subcutaneous hemorrhages, hemorrhagic nodules at the costochondral junctions, and enlarged and hemorrhagic suprarenals. The principal antemortem signs were marked loss of weight and appetite, subcutaneous hemorrhages, marked pseudoparalysis of the limbs, and in one case on apples (Series 4) a prolapse of the rectum, which has previously been observed by Dr. J. F. McClendon in typical scurvy cases in guinea-pigs.

From these experiments it appears evident that the only one of the dried fruits tested which contains sufficient antiscorbutic vitamin to maintain the life of a guinea-pig when fed in not too excessive quantities is peaches. Of this fruit it appears that 4 gm. a day, although insufficient to prevent scurvy, delays it for three or four months. Although further trial did not bear it out, earlier experiments indicated some value in apricots and apples. Pears, prunes, loganberries and cherries seemed to have even less value.

## SPECIES OF HYMENOLEPIS AS HUMAN PARASITES

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During the summer of 1921, while I was engaged in a hookworm resurvey of certain parishes (counties) in northern Louisiana for the International Health Board of the Rockefeller Foundation, my interest was aroused in the occurrence of *Hymenolepis nana* and *Hymenolepis diminuta* as human parasites.

The genus *Hymenolepis* includes a large number of species of tapeworms of small or medium size which occur as adults in the intestines of mammals, particularly rodents, and birds. The strobilae are made up of numerous segments or proglottids which, with the exception of a few terminal segments in some species, are much wider than long. The sex ducts all open on one side of the worm. In most species the scolex is armed not only with four muscular suckers, but also

with a rostellum provided with hooklets; but in a few species, including the occasional human parasite *Hymenolepis diminuta*, the rostellum is rudimentary and the hooklets are missing. In stained and mounted specimens, tapeworms of this genus can readily be identified by the presence of three rounded or lobed testes and a single ovary, and enlarged seminal vesicle and seminal receptacle in each proglottid. Contrary to what occurs in many species of tapeworms, the eggs commonly escape

from the segments in the feces and do not lose their outer shells. Infestations, therefore, are readily discovered in routine examinations of feces for ova of worms.

### LIFE HISTORY OF HYMENOLEPIS

The life histories of the few species of *Hymenolepis* about which anything definite is known present some unusually interesting conditions. There seems to be little doubt that the primitive and typical life history of species of this genus involves an invertebrate as an intermediate host for the larval stage, which is a cysticercoid. Species of *Hymenolepis* and the genera or subgenera which are closely related to it are particularly abundant in water birds, and in a number of species found in ducks the intermediate host has been determined as various fresh water crustacea (*Cypris* and *Cyclops*). In *Hymenolepis carioca* of chickens the intermediate host is the stable fly, *Stomoxys calcitrans*, and in an allied parasite of chickens, not found in this country, the earthworm has been incriminated, although not definitely so. Certain cysticercoids found in meal worms (larvae of *Tenebrio molitor*) are

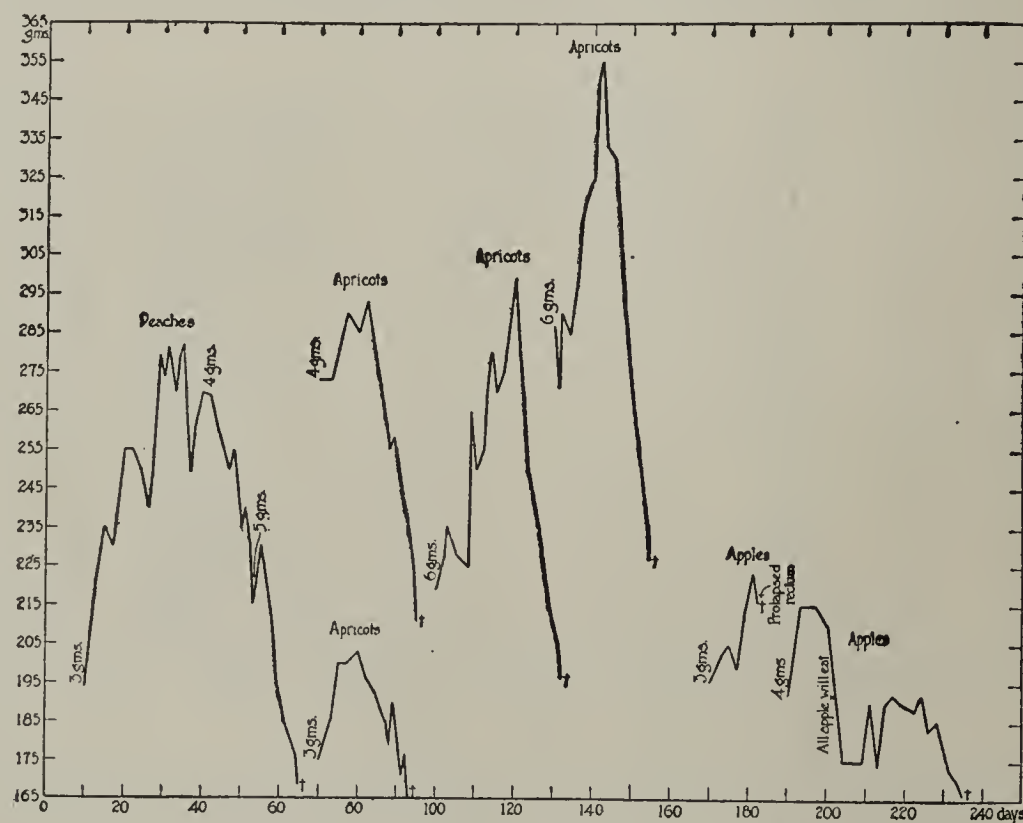


Fig. 2.—Growth curves of guinea-pigs in Series 4.



ascribed by Villot (1883) to *Hymenolepis microstoma* of mice. In *Hymenolepis diminuta* of rats, mice and human beings, there are a considerable number of insects which may serve as hosts for the cysticercoids, including the meal moth caterpillars (*Asopia farinalis*), a European earwig (*Anisolabis annulipes*), several species of beetles, including the adult of the common meal worm (*Tenebrio molitor*), a number of species of fleas, and two species of myriapods. Various attempts to infect roaches, including a number of attempts that I have made to feed both the American roach (*Periplaneta americana*) and the croton bug (*Blatella germanica*), have failed. Since, as will be shown below, *Hymenolepis diminuta* is an occasional human parasite, the question of the intermediate hosts which may serve as means of transfer to human beings is an important one.

In some species of *Hymenolepis* a modification in the life history which is unique among tapeworms, as far as is known, is of common if not universal occurrence. The common rat tapeworm, *Hymenolepis murina*, believed by many parasitologists to be identical with the common human species, *Hymenolepis nana*, usually, if not always, develops without the intervention of any intermediate host. The eggs of this worm, when ingested by rats, develop into cysticercoids in the intestinal villi, from which, when mature, they escape into the lumen of the intestine and develop into adults. Recently, Joyeux<sup>1</sup> has discovered cysticercoids in the intestinal villi of the European hedgehog which apparently belong to the species of *Hymenolepis* commonly found in that animal, namely, *Hymenolepis erinacei*.

#### HYMENOLEPIS NANA

There appears to be no doubt whatever that the human species, *Hymenolepis nana*, has a life history similar to that of *Hymenolepis murina*. The very heavy infestations which frequently occur, in which hundreds or even thousands of worms are present, make infestation by ingestion of infected insects extremely improbable, if not impossible. Experimental infestations of man by ingestion of eggs have been produced by Grassi and by Calandruccio in Italy, but not under such rigorous experimental conditions as to make the results unassailable.

In the course of my work in Louisiana, I frequently found several members of a family infested with this parasite; in one instance, all of three examined; in two instances, two out of three; in one instance, two out of four; once, two out of five; once, two out of seven; and in ten instances, one out of from two to seven. In view of the fact that no method of concentration of the ova was used, it is quite possible, if not probable, that lighter infestations existed in other members of these families. Goldman<sup>2</sup> reports a case of seven out of eight children in one family infested. Grassi,<sup>3</sup> Schloss<sup>4</sup> and others have commented on the same fact. The epidemiology thus shows the same tendency toward distribution throughout a family as is found in the case of other intestinal parasites which do not require an intermediate host. Furthermore, Goldman<sup>2</sup> reports the finding of a number of strands of mucus, voided after repeated treatment with male fern to remove *Hymenolepis nana*, containing from two to eight heads of *Hymenolepis nana*, without any strobilization, each surrounded by a sac-like structure. These,

Goldman thought, might represent the cercocyst stage of the dwarf tapeworm, and he further believes that autoinfection is proved by the large number of worms present and their continued reappearance after treatment.

It seems reasonable to believe that the very heavy human infestations, in which hundreds or thousands of worms may be present, are the result of internal autoinfection, i. e., the development of ova from adult worms in the intestine, without ever having left the body of the host. Autoinfection of this kind with the cysticerci of the pork tapeworm (*Taenia solium*) is known to occur. In the latter instance, and presumably also in the case of *Hymenolepis nana*, the ova must reach the stomach in order to escape from their protecting shells and continue development; but such a possibility can be brought about in a number of ways, e. g., suction as the result of vomiting, reversed peristalsis, and migration of the worms themselves. Tapeworms in their natural environment are active animals and move about as do other worms, occasionally, like *Ascaris*, passing through the stomach to the esophagus.

The question as to whether infestation can occur only by eggs acquired from human origin through such agencies as dirty hands, contaminated water, raw vegetables, flies or internal autoinfection, or also by eggs ingested with the excreta of infected rats or mice, is a question which cannot be determined until the identity or distinctness of *Hymenolepis nana* of man and *Hymenolepis murina* of rats has been finally settled. There are slight morphologic differences between the two species, but not greater than might be expected as the result of adaptation to different hosts. In a single instance Grassi succeeded in infecting one child out of six with eggs from infected rats, but under conditions which did not eliminate the possibility of the infestation having been otherwise acquired. Joyeux has failed in attempts to infect rats with eggs from the human parasite, but admits that his experiments have not been extensive enough to be conclusive, the difficulty having been in obtaining uninjured eggs in the human feces in sufficient concentration to make the experiments decisive.

In Louisiana I obtained several samples of feces containing *Hymenolepis nana* eggs in considerable numbers, but before experiments could be carried out on rats, the eggs in all but one sample had apparently died. In a portion of this sample some of the eggs were unquestionably alive, as shown by movements of the embryo when the outer shell was broken. This sample was fed to two white rats which were free from *Hymenolepis nana* infestation, although both contained *Hymenolepis diminuta*. At the end of eighteen days one rat died and was carefully examined for both cysticercoids and developing adult worms, but was negative. The other rat was killed and examined at the end of three weeks, but it also was entirely negative. It is estimated that each of these rats received somewhere between fifty and a hundred eggs. While, therefore, the evidence is still inconclusive, it seems to favor the distinctness of the rat and human parasites. The evident close relationship of the two, and the frequency with which rat and human parasites are interchangeable, would seem to favor the view that the human parasite has been derived as a variant of the rat parasite, adapted to live in the human intestine, somewhat as the trypanosome of Rhodesian trypanosomiasis is believed to be a variant of the parasite of nagana. If such were the case, it would not be out of

1. Joyeux, C.: Bull. Soc. de path. exot. **14**: 386-390, 1921.

2. Goldman, A.: Am. J. Trop. Med. **1**: 109-118, 1921.

3. Grassi, B.: Centralbl. f. Bakteriologie, **1**: 97-100, 1887; **2**: 305-312, 1887.

4. Schloss, O.: Am. J. M. Sc. **139**: 675, 1910.



the question that, under favorable conditions, these parasites, even though specifically distinct, might succeed in developing in the alternate host. Under such circumstances, rats and mice might be considered as possible but unimportant factors in the dissemination of the infection.

A very interesting situation in connection with the life history of *Hymenolepis murina* has been brought out by the finding by Johnston<sup>5</sup> in Australia and by Nicoll and Minchin<sup>6</sup> in England of cysticeroids in rat fleas, which on morphologic grounds were believed to be larval stages of this rat tapeworm. Dampf,<sup>7</sup> in Germany, found a similar cysticeroid in a flea from a jerboa, which no less an authority than Lühe thought might belong to *Hymenolepis nana* (*murina*). On the other hand, Joyeux<sup>8</sup> has not been successful in experimentally infecting any species of fleas either in the larval or in the adult state. If the interpretations with respect to the cysticeroids in fleas are correct, it would indicate that the larval stage of *Hymenolepis murina* could develop either directly in a single host, or more rarely in the primitive *Hymenolepis* manner, by the intervention of an invertebrate as an intermediate host. It would still be possible that *Hymenolepis nana*, if specifically distinct from *Hymenolepis murina*, might have departed farther from the ancestral habits and have lost entirely the ability, as its relative has lost the necessity, of developing in an intermediate host.

#### FREQUENCY OF INFESTATION

The frequency of infestation with *Hymenolepis nana* varies a great deal in different parts of the country, and in those instances in which inmates of sanatoriums or other institutions have been examined in a routine manner, the results cannot be taken as fairly representative, owing to the obvious probability of spreading of the infection under such conditions. De Buys and Dwyer,<sup>9</sup> for instance, report 9.25 per cent. infestation among 595 children in seven different institutions in New Orleans, while Frey<sup>10</sup> reported that 32.6 per cent. of 118 parasite infestations at the Texas State Orphan Home were with *Hymenolepis nana*. On the other hand, H. B. Wood<sup>11</sup> reported 1.59 per cent infestation of 62,785 persons examined in Southern state laboratories, and Kofoed, Kornhauser and Plate<sup>12</sup> found seven cases (0.6 per cent.) in 1,200 American overseas troops, and none in 300 home service troops. I found twenty-two cases, by the simple smear method, in a total of 1,963 examinations of children of school age in three northern Louisiana parishes (data kindly furnished by the International Health Board). It is evident, therefore, that, as was predicted by Stiles<sup>13</sup> in 1903, *Hymenolepis nana* is the most common cestode parasite of human beings in the Southern states, and is undoubtedly much more common in many localities than all other tapeworms combined. The percentage of infestation in children of school age in the southern United States probably lies between 1 and 2 per cent. An estimate of a 10 per cent. infestation has been made for children in parts of Italy, particularly Sicily.

#### HYMENOLEPIS DIMINUTA AND OTHER SPECIES

The situation with respect to *Hymenolepis diminuta* is somewhat different. In this case there seems to be no question but that the human parasite is identical with that of rats. This species is one of the commonest, if not the commonest, worm infesting rats of the genus *Epimys*. In a recent examination that I made of the intestinal parasites of about 200 rats caught in the city of Houston, Texas, *Hymenolepis diminuta* was found to infest about 33 per cent., whereas *Hymenolepis murina* was found in less than 5 per cent. *Hymenolepis diminuta* also occurs, though more rarely, in the house mouse (*Mus musculus*) and occasionally in other rodents. Human infestation occurs by the accidental swallowing of an intermediate host, such as the larva of the meal moth (*Asopia farinalis*) and the meal worm (larva of *Tenebrio molitor*) and possibly other insects or larvae found in such foods as breakfast cereals, potato chips or dried fruits which are eaten without cooking. These meal worms have actually been shown in some instances to have been swallowed by human beings, possibly with corn meal, although it is difficult to see how they could escape destruction by heat in cooking the meal. Gedoelst expresses the opinion that accidental ingestion of rat fleas is a more probable means of infestation than ingestion of meal worms with poorly cooked bread, which, if not cooked sufficiently to destroy the insects and the cysticeroids within them, would be inedible; but he apparently overlooks the greater possibility of their ingestion with uncooked foods. The more extensive use of precooked cereals in the United States than in Europe might account for the greater number of cases of infestation in this country. The flea theory is not impossible in view of the fact that a considerable number of cases of human infestation with the double-pored dog tapeworm, *Dipylidium caninum*, have been recorded, particularly in children. This worm, as far as known, undergoes its larval development only in fleas and lice (*Mallophaga*). However, in view of the frequent intimacy which exists between dogs and children, the accidental swallowing of dog fleas, transferred possibly by the tongue of the dog, could occur much more readily than the swallowing of fleas from rats. The probability of infection from fleas is still more reduced by the fact that, judging from examinations of fleas from infected rats and also from feeding experiments, only about 4 per cent. of fleas become infected.<sup>6</sup> Only fourteen specimens of *Hymenolepis diminuta* were recovered by Nicoll and Minchin from two rats which had been fed 340 fleas.

As would be expected, this infestation does not show a tendency to become prevalent in families or institutions; the number of worms in each case of infestation is comparatively few (from one to four), and the number of instances of human infestation is relatively small. Up to 1904, when Ransom<sup>14</sup> compiled the known cases of human infestation with various species of *Hymenolepis*, only twelve cases had been reported; but since that time numerous other cases have been observed. Records of thirty-five cases are available, distributed geographically as follows: United States, including three hitherto unpublished records, twelve; Indian troops in Mesopotamian expeditionary force, eight (out of 2,981 examined); Brazil, three; Italy, six; and one each in Argentina, Grenada, East Africa (out of 1,500 examinations), France and Belgium. This wide geographic distribution, together with the

5. Johnston, T. H.: Proc. Roy. Soc. Queensland 24: 63-91, 1913.  
6. Nicoll, W., and Minchin, E. A.: Proc. Zool. Soc. London, 1911, No. 1, pp. 9-13.

7. Dampf, A.: Centralbl. f. Bakteriöl. Orig. 54: 452-454, 1910.

8. Joyeux, C.: Bull. Soc. de path. exot. 9: 578-583, 1916.

9. De Buys, L. R., and Dwyer, H. L.: Studies of Stools in Children's Institutions, Showing Incidence of Intestinal Parasitic Infections, Am. J. Dis. Child. 18: 269 (Oct.) 1919.

10. Frey, J. H.: Texas State J. M. 11: 229, 1915.

11. Wood, H. B.: Intestinal Parasites in the South, J. A. M. A. 59: 1707 (Nov. 9) 1912.

12. Kofoed, C. A.; Kornhauser, S. I., and Plate, J. T.: Intestinal Parasites in Overseas and Home Service Troops of the U. S. Army, J. A. M. A. 72: 1721 (June 14) 1919.

13. Stiles, C. W.: New York M. J. 77: 877, 1903.

14. Ransom, B. H.: Bull. 18, Hyg. Lab., U. S. P. H. S., 1904.



small percentage of cases in which large numbers of individuals were examined, is strong circumstantial evidence in itself to support the belief, which amounts almost to a certainty, that we are dealing with a parasite normally harbored by an animal other than man, and conveyed to the human host by an agency or set of circumstances which is not commonly realized.

The cases in the United States, reports of which have been published, occurred as follows:

Boston, one case; Weinland, 1858; occurred in 1842.

Philadelphia, two cases; Leidy, 1884, and Packard, 1900.

Lee County, Ark., one case; Deaderick, 1906.

Minneapolis, one case; Nickerson, 1911.

Warsaw, Ind., one case; Schwartz, 1921.

Greenwood, Neb., one case; Stiles, 1921; occurred in 1906.

Washington, D. C., one case; Stiles, 1921; occurred in 1911.

Gastonia, N. C., one case; Stiles, 1921; occurred in 1912.

In an examination of 1,200 American overseas troops and 300 home service troops, Kofoed, Kornhauser and Plate<sup>12</sup> did not find a single infestation with *Hymenolepis diminuta*.

The three cases mentioned above as having been found in the United States, but not previously reported, were observed in the course of hookworm resurvey work being done by the International Health Board in the Southern states, two by myself in Louisiana, and one by Dr. E. C. Albritton in Georgia. These cases, all of which were diagnosed by the ova in fecal samples, are as follows:

1. Boy, aged 7, white, Mansfield, DeSoto Parish, La., July 30, 1921.

2. Boy, aged 13, negro, Cloutierville, Natchitoches Parish, La., June 19, 1921. *Ascaris* also present.

3. Boy, aged 6, negro, Moultrie, Ga., summer, 1921.

It is possible that human infestation with other species of *Hymenolepis* may occasionally occur. A single case of infestation with *Hymenolepis lanceolata* of ducks and geese has been recorded by Zschokke<sup>15</sup> from a 12 year old boy at Breslau, who spontaneously evacuated two specimens, one at each of two different times. There can be little doubt that infection took place by the swallowing with drinking water of *Cyclops* or allied crustacea in which the cysticercoid of this species develops.

#### EFFECTS AND TREATMENT

The effects produced by *Hymenolepis* infestation in man are comparable with those produced by other tapeworms, and consist, especially in the case of *Hymenolepis nana*, of abdominal pains with or without diarrhea, and such nervous symptoms as convulsions, epilepsy and insomnia, often accompanied by headache and dizziness. Eosinophilia seems to be a practically constant condition. Nasal and anal pruritus is rare. Although it has been asserted that infestation with this diminutive parasite more regularly produces severe symptoms than do other tapeworms, Ransom has pointed out the probability that this is due to a larger percentage of nonsevere cases being overlooked. *Hymenolepis diminuta* infestations, since they are always light, usually produce no symptoms which can definitely be attributed to the parasites.

Treatment for these worms does not differ from treatment for other tapeworms. Male fern is the drug most frequently employed. *Hymenolepis nana* infestations have a tendency to recur after repeated treatments, no doubt owing partly to reinfestation from parasites still in the cysticercoid state in the intestine, some direct evidence for which was found by Goldman.<sup>2</sup>

Even the adult worms, however, are not usually all expelled by a single treatment, since ova are often found in the feces even after two or three treatments. The worms are by no means easy to find in the feces when expelled. According to Deaderick,<sup>16</sup> in nearly 25 per cent. of examinations made by various workers for expelled parasites the latter have not been found. The worms, as Hallock<sup>17</sup> pointed out, "appear as very minute translucent or opalescent shreds not unlike mucus, and the greatest care is required lest they be overlooked." *Hymenolepis diminuta*, which may be regarded as an abnormal or accidental human parasite, is very easily expelled by anthelmintics or even by means of a cathartic, and probably is often evacuated spontaneously. In the single case of infestation with *Hymenolepis lanceolata*, also an accidental human parasite, the parasites were evacuated spontaneously. It might be concluded from this that the reason for the nonoccurrence of other species of *Hymenolepis* in man is not so much the inability of the worms to subsist in the human intestine as it is their failure to remain attached and their consequent early expulsion.

Rice Institute.

### WHAT OUGHT THE UNITED STATES PHARMACOPEIA TO CONTAIN?

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NEW HAVEN, CONN.

It was pleasing to read the list of drugs recommended for deletion by the present Revision Committee of the Pharmacopeia,<sup>1</sup> i. e., 102 drugs listed for deletion from the ninth revision of the Pharmacopeia.

Ten years ago, when a member of the subcommittee on scope of the revision committee of the 1900 Pharmacopeia (the eighth revision), I urged the deletion of many drugs and preparations. More than eighty of these drugs now (1921) recommended for deletion by the whole, or the majority, of the revision committee were considered useless and urged for deletion by me in 1911. These eighty drugs were not considered useless by the majority of my colleagues in the committee, and hence appeared in the U. S. Pharmacopeia of 1910.

Only fifteen of the drugs recommended for deletion by the present committee are even mentioned in my recent book,<sup>2</sup> and of these fifteen I more or less condemn seven. Four others of the fifteen are for external use only and could well be deleted. The remaining four (caffeina citrata, caffeina citrata effervescens, calcii glycerophosphas and spigelia) I am ready to delete as the committee recommends. The two preparations of caffein are not needed as long as we have good coffee and caffeinae sodio-benzoas. While I think that calcium glycerophosphate is a valuable preparation, it can be omitted, as calcium lactate is as good a preparation; and, lastly, there are anthelmintic drugs better than spigelia. Consequently, I am ready to approve the decision of the revision committee to delete the 102 drugs and preparations listed.

But why stop there? Why not have a really useful, valuable tenth revision of the Pharmacopeia?

16. Deaderick, W. H.: *Hymenolepis Nana* and *Hymenolepis Diminuta*, J. A. M. A. 47: 2087 (Dec. 22) 1906.

17. Hallock, H. M.: *Tenia Nana*: Report of Two Cases, J. A. M. A. 42: 891 (April 2) 1904.

1. The United States Pharmacopeia: Many Deletions in the Tenth Revision, J. A. M. A. 77: 1994 (Dec. 17) 1921.

2. Osborne, O. T.: *Principles of Therapeutics*, 1921.

15. Zschokke, F.: *Centralbl. f. Bakteriol. Orig.* 31: 331, 1902.



The last Pharmacopeia (1910) deleted 244 drugs and preparations from the eighth revision (1900). Sixty-seven new drugs and preparations were added to the 1910 revision, and of these, twelve are now recommended for deletion, showing that they did not survive the test of even six years (the 1910 Pharmacopeia was not published until 1916).

A number of substances are retained in the Pharmacopeia because it was claimed that it was a book of standards, and that the pure food and drug law needed the Pharmacopeia as a standard. It was never intended in that law that the Pharmacopeia should be made a standard for anything but drugs, not for foods, and not for substances that were not drugs. The Pharmacopeia has never been considered a standard for chemicals; and why should it be considered a standard for spices, for instance? In spite of my contentions in 1911, 1912 and 1913, most of these spices and some other materials were listed in the ninth revision. Now this present revision committee has recommended the deletion of anise, and that certainly eliminates the necessity of listing any of the spices in the Pharmacopeia for the sake of standardization.

I wish to urge the present revision committee to make this Pharmacopeia of small size, a standard for useful drugs. I therefore once more offer a list of substances, drugs and preparations that may well be deleted from the ninth revision.

1. Why attempt to standardize what cannot be standardized, and thus insult the remainder of this scientific book of standards? To wit, I would delete the substances listed in Table 1.

TABLE 1.—SUBSTANCES RECOMMENDED FOR DELETION BECAUSE THEY CANNOT BE STANDARDIZED

Adeps	Extractum Malti
Agar	Ferrum
Althaea	Gelatinum
*Amygdala Dulcis	Gossypium Purificatum
Amylum	*Humulus
Aqua	Limonis Cortex
Aqua Destillata	Linum
Aqua Destillata Sterilisata	*Maltum
Aurantii Amari Cortex	Manna
Aurantii Dulcis Cortex	Mel
Cera Alba	Mel Purificatum
Cera Flava	Mel Rosae
Cetaceum	Myrrha
*Chondrus	Resina
Coccus	Rosa Gallica
Emplastrum Elasticum	Sapo
Emplastrum Resinae	Sevum
Emplastrum Saponis	Zincum

\* Drugs recommended for deletion by the present Revision Committee.

2. The spices given in Table 2 are out of place in a Pharmacopeia. Such aromatic oils as are needed may be listed, and standardized, if possible.

TABLE 2.—SPICES THAT SHOULD BE DELETED

*Anisum	*Foeniculum
Capsicum	Mentha Piperita
Cardamomi Semen	Mentha Viridis
Carum	Myristica
Caryophyllus	Piper
Cinnamomum Saigonicum	*Sinapis Alba
Cinnamomum Zeylanicum	Sinapis Nigra
*Coriandrum	Vanillinum
Cubeba	Zingiber

\* Drugs recommended for deletion by the present Revision Committee.

Once again, after ten years, let me ridicule the absurdity of standardizing such substances as lemon-peel, orange-peel, iron wire, and the water which runs from the faucet in the back room of every drug store or pharmacy in the United States.

3. The chemicals named in Table 3 should no more be listed in the Pharmacopeia than many other chemical substances.

TABLE 3.—CHEMICALS THAT SHOULD BE DELETED

Acetonum	Sodii Cyanidum
Beizinum Purificatum	Sodii Indigotindisulphonas
Ferri Chloridum	Zinci Chloridum

4. The drugs and preparations of the long list in Table 4 are either absolutely useless, or are very much inferior to other drugs and preparations of their various classes. For ready reference the list is arranged alphabetically. The drugs recommended for deletion by the present revision committee are marked with an asterisk, and in each instance I have the honor to agree with the committee. If requested, I can give a reason for the deletion of every drug and preparation here listed.

TABLE 4.—DRUGS AND PREPARATIONS THAT SHOULD BE DELETED

Acetum Scillae	Extractum Colocynthis
*Acidum Gallicum	Colocynthis Compositum
Acidum Hydriodicum Dilutum	Gelsemii
*Acidum Hydrobromicum Dilutum	Gentianae
*Acidum Hydrocyanicum Dilutum	Hydrastis
Acidum Hypophosphorosum	Hyoscyami
*Acidum Hypophosphorosum Dilutum	Nucis Vomicae
Acidum Lacticum	Physostigmatis
*Acidum Nitrohydrochloricum	Stramonii
*Acidum Nitrohydrochloricum Dilutum	Sumbul
Acidum Oleicum	Taraxaci
Acidum Stearicum	Viburni Prunifolii
Acidum Sulphuricum Aromaticum	Ferri et Ammonii Citras
Acidum Sulphuricum Dilutum	*Ferri et Quininae Citras
Aconitina	Ferri Phosphas
*Aethylis Carbamas	Ferri Sulphas Exsiccatus
*Alumini Hydroxidum	Ferri Sulphas Granulatus
Ammonii Benzoas	Fluidextractum Aconiti
Ammonii Bromidum	Aromaticum
*Ammonii Iodidum	Aspidospermatis
*Ammonii Salicylas	Aurantii Amari
*Ammonii Valeras	Belladonnae Radicis
Aqua Amygdalae Amarae	Cannabis
Aqua Anisi	Cimicifugae
*Aqua Aurantii Florum	Cinchonae
Aqua Aurantii Fortior	Colchici Seminis
Aqua Chloroformi	Eriodictyi
Aqua Creosoti	Eucalypti
Aqua Foeniculi	Frangulae
*Aqua Rosae	Gentianae
Aqua Rosae Fortior	Grindeliae
Aqua Aromaticae	Guaranae
Argenti Oxidum	Hydrastis
*Arnica	Hyoscyami
*Aspidosperma	Lobelia
*Auri et Sodii Chloridum	Nucis Vomicae
Benzaldehydum	Pilocarpi
*Bismuthi Betanaphtholas	Podophylli
*Bismuthi et Ammonii Citras	Rosae
*Bismuthi Subsalicylas	Sabal
*Bromoformum	Sarsaparillae
*Caffeina Citrata	*Sarsaparillae Compositum
*Caffeina Citrata Effervescens	Senegae
Calcii Bromidum	Spigeliae
*Calcii Hypophosphis	Staphisagriae
*Calcii Sulphidum Crudum	Stillingiae
Calumba	Sumbul
Cambogia	Taraxaci
*Camphora Monobromata	Tritici
Cannabis	Uvae Ursi
Ceratum Resinae	Viburni Prunifolii
*Cerii Oxalas	Xanthoxyli
*Cimicifuga	*Frangula
*Cinchoninae Sulphas	Galla
Colchici Cormus	Gambir
Colocynthis	Gelatinum Glycerinatum
*Copaiba	Glyceritum Hydrastis
Cotarninae Hydrochloridum	Glycyrrhizinum Ammoniatum
Creosoti Carbonas	Grindelia
*Diacetylmorphina	Guaiacol
*Diacetylmorphina Hydrochloridum	Guaiacol Carbonas
Diastasum	*Guaiacum
Emplastrum Plumbi	Guarana
Emulsum Asafoetidae	*Hydrargyri Oxidum Rubrum
Olei Terebinthinae	Hydrargyrum cum Creta
Eriodictyon	*Hydrastina
Eucalyptus	*Hydrastinae Hydrochloridum
Eugenol	Hydrastis
Extractum Aconiti	Hyoscyaminae Hydrobromidum
Cannabis	Hyoscyamus
Cimicifugae	Infusum Sennae Compositum
Colchici Cormi	Kino
	*Lactucarium
	Linimentum Belladonnae



TABLE 4.—DRUGS AND PREPARATIONS THAT SHOULD  
BE DELETED—Continued

Liquor Acidi Arsenosi	*Sparteinae Sulphas
Ammonii Acetatis	*Spigelia
Arseni et Hydrargyri Iodidi	Spiritus Aetheris
Ferri Chloridi	Aetheris Nitrosi
Ferri et Ammonii Acetatis	Ammoniae Aromaticus
Ferri Subsulphatis	Amygdalae Amarae
Ferri Tersulphatis	Anisi
Plumbi Subacetatis Dilutus	Aurantii Compositus
Potassii Citratis	Cinnamomi
*Sodii Arsenatis	Juniperi Compositus
Sodii Glycerophosphatis	Lavandulae
Zinci Chloridi	Menthae Viridis
*Lithii Bromidum	*Staphisagria
*Lithii Carbonas	Stillingia
*Lithii Citras	*Strontii Bromidum
*obelia	*Strontii Iodidum
*Mangani Dioxidum Praecipitatum	Strontii Salicylas
Massa Ferri Carbonatis	*Strychnina
*Matriacaria	Styrax
*Mezereum	*Sumbul
Mistura Glycyrrhizae Composita	Syrupus Acidi Hydriodici
*Moschus	Aurantii Florum
*Oleoeresina Petroselini	*Calcii Lactophosphatis
*Piperis	*Hypophosphitum
*Zingiberis	Lactucarii
Oleum Amygdalae Amarae	Picis Liquidae
Aurantii	*Sarsaparillae Compositus
Cajupti	Scillae
Cari	Scillae Compositus
Coriandri	Senegae
*Cubebae	*Taraxacum
Foeniculi	Terebentum
Limonis	Theophyllina
Menthae Viridis	Tinctura Arnicae
Myristicae	Asafoetidae
*Pimentae	Aurantii Amari
Rosmarini	Benzoini Composita
Sassafras	Calumbae
Sinapis Volatile	Cannabis
*Thymi	Cinchonae Composita
Petroselinum	Gambir Composita
Phosphorus	Guaiaei
*Physostigma	Guaiaei Ammoniata
Pilocarpinae Nitras	Hydrastis
*Pilocarpus	Hyoscyami
Pilulae Catharticae Compositae	Kino
Ferri Iodidi	Lactucarii
Phosphori	Lavandulae Composita
Plumbi Oxidum	Limonis Corticis
Potassa Sulphurata	Lobeliae
*Potassii Hypophosphis	Moschi
Pulvis Aromaticus	Myrrhae
*Pyrethrum	Physostigmatis
*Quininae Salicylas	Pyrethri
Resina Jalapae	Sanguinariae
Scammoniae	Stramonii
*Sabal	Tolutana
Salicinum	Valerianae
*Sanguinaria	Valerianae Ammoniata
Santalum Rubrum	*Triticum
*Sarsaparilla	Unguentum Diachylon
*Sassafras	Gallae
Scammoniae Radix	Hydrargyri Nitratis
Senega	Stramonii
Serpentaria	*Uranii Nitras
Sodii Acetas	Uva Ursi
*Sodii Arsenas	Valeriana
*Sodii Arsenas Exsiccatus	*Veratrina
Sodii Carbonas Monohydratus	Viburnum Prunifolium
*Sodii Glycerophosphas	*Xanthoxylum
*Sodii Hypophosphis	Zinci Acetas
*Sodii Perboras	*Zinci Carbonas Praecipitatus
*Sodii Phenolsulphonas	*Zinci Phenolsulphonas
Sodii Sulphis Exsiccatus	*Zinci Valeras
Sodii Thiosulphas	

\*Recommended for deletion by the present revision committee.

Some of these drugs and preparations are without useful activities; a few have dangerous activities (such as aconitina and linimentum belladonnae) and should therefore be deleted; some were once much used and have now gone into innocuous desuetude (such as infusum sennae compositum, spiritus aetheris nitrosi, and liquor ammonii acetatis); some catered to the belief in the mysterious (liquor ferri et ammonii acetatis); some are preparations of really useful drugs, but in such preparations the drugs are much less valuable than in other preparations, and therefore these preparations are superfluous; some few were officialized because the demand for them was created by pharmaceutic and nostrum propaganda; some multiple mixtures were retained in the last Pharmacopeia which should be deleted from the tenth revision; some of these preparations are ancient and honorable but have as yet retained their respectability (such as

mistura glycyrrhizae composita and pilulae catharticae compositae), while others, though ancient and honorable, have lost caste. Why keep the honey in massa ferri carbonatis? Why keep the serpentaria in tinctura cinchonae composita? Why keep the aloes in tinctura benzoini composita?

It would be little less than the beginning of the millennium to have the tenth revision of the United States Pharmacopeia of such a convenient size, containing only useful drugs (i. e., drugs and preparations that are known to have some medicinal value), that every physician would have it on his desk for constant use. Consequently, I realize that various kinds of force will be exerted to prevent the deletion of the long list of drugs and preparations recommended for the waste basket. But let the revision committee allow its medical men to decide what drugs are needed in the Pharmacopeia. It should not be a decision for the pharmacists or for the pharmaceutical chemists. After the medical men decide the drugs they want, the scientific pharmacists should decide the assays necessary to secure standards and purity of these drugs. The pharmaceutical and chemical experts should then decide what are the most efficient and the pleasantest preparations, while the dosage should be agreed on by pharmacologists and clinicians jointly.

177 Church Street.

THE COLLECTION AND THE PRESER-  
VATION OF HUMAN MILK

PRELIMINARY REPORT \*

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When we consider the high value of human milk in the feeding of infants, especially those who are losing weight steadily on artificial feeding, it is strange that there have not been more attempts to preserve it. In cases in which the mother's milk has failed, wetnurses can be employed by the well-to-do; but wetnurses are trouble makers, and perhaps it is just as well that the number is limited. In Boston either wetnurses or human milk are obtainable at the Directory for Wet-Nurses, and this institution is of the greatest value. Such drawn breast milk must necessarily be used within a very few hours' time. This method, therefore, is open to the objection that, in addition to its being expensive, the supply is inelastic. Ordinarily, human milk, when needed, is obtained only with difficulty and after delay, and even then the supply is often maintained with much inconvenience. The source of supply seems always to be on the far side of the city, and any trifle, such as the state of the mother's feelings, may be enough to cause her to refuse quite suddenly to sell any more milk. At times, on the other hand, a mother has more than enough milk for her new baby and asks her physician whether he does not know of some baby who would be benefited by it. Frequently he can find no baby who needs it, for at that moment all his feeding cases are doing well.

What is needed is a process whereby the supply of breast milk can be made uniform. Mayerhofer and Pribram (cited by Knapé<sup>1</sup>) in 1909, preserved human milk by means of hydrogen peroxid, but as the milk grew older it became more acid and acquired a musty

\* From the Medical Service and Laboratories of the Boston Floating Hospital.

<sup>1</sup> Knapé: Ueber Konservierung von Frauenmilch, Monatschr. f. Kinderh. Orig. 10: 281, 1911.



odor. The longest time they succeeded in keeping the milk so that babies could be fed on it was thirty-two days. The babies gained weight satisfactorily, but vomited a good deal.

Knapé,<sup>1</sup> in 1911, repeated the work of Mayerhofer and Pribram, obtaining the milk fresh, and under aseptic conditions. He then added hydrogen peroxid and kept the flask containing the milk in the cold and in the dark. The milk became more acid gradually, the bacterial count went up, and after ten days a musty smell appeared.

For many years the Boston Floating Hospital, through its onshore nursing staff, headed by Miss Martha H. Stark, with the cooperation of the Lying-In Hospitals and obstetricians, has collected human milk daily in the mothers' homes. In the summer of 1915, in the eighty days in which the Floating Hospital accepted feeding cases, 368½ quarts (358.7 liters) of human milk were thus collected. A complete social and medical history of the mother is first obtained and a blood Wassermann test done (this was occasionally omitted at first if the mother's physical examination as done by a physician was negative and her baby obviously thriving, but since 1918 every case has had the Wassermann examination). The mother is instructed in the care of her breasts, and in the method of obtaining the milk in a cleanly fashion. She is provided with a breast-pump or taught the technic of manual expression as used by Sedgwick and each day sterile bottles are brought to her. As she fills a bottle it is placed on ice. When the mother does not possess an icebox she is shown how to construct one cheaply, large enough to hold several 8 ounce (236 cubic centimeter) nursing bottles. Much of this milk is contributed gratis by the mothers. Occasional instances of diluting the milk with water were found at first, and had to be summarily dealt with; but, after twelve years of experience with the same nurse to supervise the collection, we have found this factor practically negligible. The nurse carries an ice-cap filled with ice in her bag, in this way keeping the milk cool while taking it to a convenient drug store, where the clerk obligingly places it on ice while she goes out to collect more. When ready to return, she gathers her collection and carries it directly to the hospital, where all the milk is mixed, pasteurized, and placed in the refrigerator.

By this method we can depend on a large part of the human milk our babies require. Each summer a source of supply is built up, and each autumn, with the closing of the hospital, it is lost. If we could maintain the collection of human milk throughout the year, we could collect much more milk and collect it at a time of year when the milk would be much less liable to spoil.

The success met in feeding babies dried cow's milk led us to consider the possibility of drying human milk. Mr. A. W. Bosworth, formerly our chemist, succeeded in drying whole human milk. Mayerhofer and Pribram (cited by Lane-Clayton<sup>2</sup>) added calcium peroxid to human milk, and then dried it, with and without the fat content. In some cases, babies were fed on this dried milk with success. The problem, however, of drying enough human milk so that its value as a food can be determined is a difficult one. The ordinary method of drying milk which is at hand in the chemical laboratory of a hospital is too slow for the amount needed. It is likewise open to the criticism of contamination and chemical change. The commercial driers of cow's milk would have to be given a much

larger quantity of human milk than we could possibly obtain at one time. We are at present engaged in experimental work on the preparation of a satisfactory method of drying such milk.

Two other methods of preserving human milk were considered. The first one, that of evaporating the milk and adding sugar as a preservative, thus making a human condensed milk, was not considered practicable by Mr. Bosworth. The second method, of preserving the fat alone, and homogenizing it with cow's skim milk, we were led to try after reading Finkelstein's experiment. Mr. Bosworth prepared a 12 per cent. fat from human milk. By combining this with cow's skim milk, and adding lactose, we obtained a milk which had the formula: fat, 3 per cent.; sugar, 7 per cent.; protein, 1 per cent. This was made up as in Table 1.

TABLE 1.—COMPOSITION OF MILK

12 per cent. human milk fat.....	160 c.c. (5½ fluidounces)
Fat-free cow's milk.....	205 c.c. (7 fluidounces)
Sterile water .....	285 c.c. (9½ fluidounces)
Lactose .....	36.5 gm. (563 grains)

This milk was for two weeks fed to a baby 7 weeks old whose family and past history, and whose physical examination were negative. The baby had been fed on the breast for a short time after birth. When it came to us the baby was doing well on a formula of fat, 2 per cent; lactose, 6.5 per cent.; protein, 1 per cent. He was given fresh drawn breast milk for ten days, and then put on the homogenized mixture. The infant took the milk well, was perfectly contented, and gained, on the average, 29 gm. (447.5 grains) a day for sixteen days. The stools were a little darker than the ordinary human milk stool, and contained just about as much soap. The stools numbered usually from one to three. This milk fat had been saved, on ice and in the dark, for one month, and had been pasteurized twice. Some was saved to determine how long it would keep, but unfortunately was thrown out about four months later. Table 2 gives the date, the kind of food, the twenty-four hour amount of food, the caloric value per kilogram of body weight and the weight of the baby fed on preserved human milk fat (1 month old) and cow's skim milk.

TABLE 2.—RESULTS OF FEEDING

Date	Food	24 Hour Amount C.c.	Fluid-ounces	Caloric Value per Kilogram of Body Weight	Weight Gm.	Lbs.
12/9/20	3-5.25-1.20 Drawn human milk.....	420	14	87	2,636	5½
12/11/20	4-7-1.5 Drawn human milk.....	600	20	156	2,721	6
12/19/20	3-7-1 Human fat homogenized with cow's skim milk....	700	23⅓	141	2,948	6½
12/21/20	Human fat homogenized with cow's skim milk....	700	23⅓	139	3,033	6⅞
1/4/21	Human fat homogenized with cow's skim milk....	700	23⅓	123	3,416	7½

CONCLUSIONS

Human milk fat can be preserved at least a month. When combined with cow's skim milk and fed to a baby for a short period of time, we may expect a gain in weight equivalent to that obtained with whole breast milk, as shown by the case cited. Such milk might be used to advantage with babies who have an intolerance for cow's milk fat, but the milk preserved in this way is expensive and difficult to prepare. Drying human milk, we feel, is more feasible and much less expensive. 40 Wigglesworth Street.

2. Lane-Clayton, Janet E.: Milk and Its Hygienic Relations, New York, Longmans, Green & Co., 1916, p. 315.



BLUISH DISCOLORATION OF THE  
UMBILICUSIN THE DIAGNOSIS OF RUPTURED EXTRA-  
UTERINE PREGNANCY \*

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In 1919, Cullen<sup>1</sup> called attention to a "bluish discoloration of the umbilicus as a diagnostic sign where ruptured extra-uterine pregnancy exists." The patient on whom he had observed this sign was a woman of 38 who had suffered with pain in the right lower abdomen for three weeks. The patient had not missed any menstrual period and there had been no uterine bleeding. In spite of the latter fact, Cullen states that "the bluish-black appearance of the navel unassociated with any history of injury, together with the mass to the right of the uterus, made the diagnosis of extra-uterine pregnancy relatively certain." This diagnosis was confirmed on opening the abdomen, which was found to be filled with dark blood. Some recent experiences with extra-uterine pregnancy have convinced me of the value of this "blue belly-button" sign of Cullen.

## REPORT OF CASES

CASE 1.—*History*.—E. W., aged 19, nullipara, was seen in consultation with Dr. W. G. Coppage, Aug. 21, 1921. Menstruation had been normal until June, the last period having occurred, June 6. There was no flow in July, but on August 3 uterine bleeding began and had been present, though scantily and intermittently, up to the day the patient was seen. There had been pain in both sides of the lower abdomen throughout the flow. Early on the day on which I saw her, this pain had become much more severe, and the patient soon complained of faintness and nausea. Weakness, pallor and shock became pronounced, and the clinical picture, when I saw her, was the classical one of grave internal hemorrhage.

*Examination*.—There was extreme pallor of the skin and mucous membranes, the lips being almost white. The pulse was 140, the respiration shallow and feeble. The abdomen was full and rounded, with much tenderness over the entire lower zone. Percussion gave dullness over both flanks. Around the umbilicus was a well-defined areola of greenish-yellow discoloration, extending for about 1 cm (three-eighths inch) beyond the edges of the umbilical depression. Pelvic examination revealed the uterus to be slightly enlarged and pushed to the right by a large, very tender mass occupying the left iliac fossa. Examination of the blood disclosed only

2,400,000 red blood corpuscles to the cubic millimeter, with a hemoglobin of 50 per cent. The diagnosis of ruptured left tubal pregnancy was made, and the patient was at once sent into the South Baltimore General Hospital for operation.

*Operation*.—Without going into details, suffice it to say that on opening the abdomen a large quantity of both liquid and clotted blood escaped. It had apparently been retained under considerable tension. The left tube was the seat of the gestation sac, and presented a ragged rupture about 2 cm. (three-quarters inch) in diameter. The pregnant tube was quickly removed in the usual manner. The patient made an uninterrupted recovery.

CASE 2.—*History*.—L. H., aged 26, seen, Aug. 26, 1921, in consultation with Dr. L. J. Dobihal, had been married about seven years and had had two children, the younger five years previously. Since then there had been a number of abortions, all said to have been self-induced. The last regular menstrual period had occurred, July 17. Uterine bleeding reappeared, August 5, and had been present constantly since then, although the amount was small. For two weeks

there had been frequent attacks of crampy pain in the lower abdomen, especially in the right side. These attacks had often been accompanied by nausea and faintness.

*Examination*.—The general condition of the patient was good, the pulse being 110, temperature 99.5 F. Abdominal examination revealed the abdomen to be rather rounded, with a heavy layer of adipose tissue. There was some diffuse tenderness over the lower zone, especially on the right side. Percussion disclosed movable dullness in both flanks, and tympany elsewhere. Surrounding the umbilicus there was a greenish-blue area of pigmentation. Pelvic examination revealed the uterus to be normal in size and position. There was marked tenderness in the right side of the pelvis, where a small, tender mass could be indefinitely palpated. The left side of the pelvis was negative. The blood count revealed 11,000 leukocytes. A diagnosis was made of right tubal pregnancy, and the patient was sent into the hospital for operation.

*Operation*.—At the operation, August 18, the right tube was found to be the seat of a spindle-like enlargement, due to a right tubal pregnancy. The widest diameter of the tube was only about 3 cm. (1 $\frac{3}{16}$  inches), explaining how difficult its palpation would be in a stout person. The fimbriated extremity was stuffed with clots, the large amount of blood present in the pelvic and abdominal cavities being the result of tubal abortion. The right tube was excised and the appendix also removed. Recovery was uneventful.

## COMMENT

The explanation of this discoloration of the umbilicus in cases of extensive intraperitoneal hemorrhage is probably to be sought in the lymphatics of the umbilical region. The case of localized jaundice of the umbilicus reported in 1905 by Ransohoff,<sup>2</sup> to



Cullen's original picture, reprinted with permission from "Contributions to Medical and Biological Research, dedicated to Sir William Osler in honour of his Seventieth Birthday, July 12, 1921, by his pupils and co-workers." Bluish discoloration of the umbilicus associated with a ruptured extra-uterine pregnancy. This picture was obtained at operation three weeks after the first symptoms developed. The umbilicus itself has now turned a light green; above it the tissue has a faint bluish tinge; below the umbilicus the blue is marked.

\* From the gynecologic department of Johns Hopkins Medical School.  
1. Cullen, T. S.: Bluish Discoloration of the Umbilicus as a Diagnostic Sign Where Ruptured Extra-Uterine Pregnancy Exists, Contributions to Medical and Biological Research, dedicated to Sir William Osler, 1919.

2. Ransohoff, Joseph: Gangrene of the Gallbladder: Rupture of the Common Bile Duct, with a New Sign, J. A. M. A. 46: 395 (Feb. 10) 1906.



which Cullen refers, is of great interest in this connection. It was one of rupture of the common bile duct, the abdominal cavity containing a large amount of free bile. The umbilicus in this patient was of a saffron-yellow hue, in sharp contrast to the skin over the rest of the abdomen. Ransohoff is inclined to believe that the phenomenon is the result of simple inhibition, but the more likely mechanism would seem to be that the bile pigments are deposited in the skin after absorption by the lymphatics. The abdominal wall is quite thin in the region of the umbilicus, and there is a rather rich anastomosis between the intraperitoneal and extra-peritoneal lymphatics at this point. This has been emphasized by Handley and others in connection with the extension of carcinoma of the liver and stomach to the periumbilical skin region. Reversely, it is not uncommon for carcinoma of the breast to make its way into the abdominal cavity by these channels, the cancer cells finding their way even to the ovary at times.

The discoloration is not always bluish. In one of my cases it was a greenish-yellow, resembling a fading bruise. The different hues are unquestionably due to the differing degrees of oxidation of the deposited blood pigments, as in the case of the ordinary bruise. If this is true it would follow that a dark bluish discoloration would indicate a recent hemorrhage, while a greenish-yellow or orange colored pigmentation would suggest that the intra-abdominal blood had been present for some time. It need scarcely be said that no discoloration at all can be expected when the hemorrhage is so cataclysmic that the patient comes under observation very soon after its occurrence, for the reason that there is insufficient time in such cases for the occurrence of absorption.

Recently, Hellendall<sup>3</sup> has called attention to a similar discoloration of the umbilicus, and describes it as a new diagnostic sign. He is apparently ignorant of Cullen's article, published two years earlier. Furthermore, he evidently believes that it is observed only in cases of ruptured extra-uterine pregnancy associated with umbilical hernia, as in the case which he reports. There can be no doubt, therefore, that the credit for first describing this valuable sign belongs to American surgery.

It is hardly necessary to say that Cullen's sign would hardly be positive in cases of extra-uterine pregnancy which are not associated with intraperitoneal hemorrhage of considerable degree. Nor need it be emphasized that severe intra-abdominal hemorrhage due to other causes than extra-uterine pregnancy might cause the umbilical discoloration as well. Cases of the latter type, however, are so rare that, to all intents and purposes, the sign may be considered one especially applicable to the diagnosis of ruptured extra-uterine gestation. While the recognition of severe intra-abdominal hemorrhage is often simple enough, there are not a few cases in which such a hemorrhage causes comparatively little general effect, and may be difficult of recognition. The demonstration of Cullen's sign in such cases will, I am sure, be of considerable value in diagnosis.

26 East Preston Street.

3. Hellendall, H.: Ein neues Symptom der Extrauterinschwangerschaft, Zentralbl. f. Gynäk. 45: 890, 1921.

**Pellagra in Italy.**—*Lavoro* publishes an account of the report by a committee appointed in 1910, which found that pellagra declined during the war because of changes in the quality of the food for various reasons connected with the war, especially the scarcity of corn.

## THE ETIOLOGY OF ORTHOSTATIC ALBUMINURIA \*

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AND

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The finding of albumin in the urine is always of importance, and lays upon the medical attendant who makes the observation the obligation to determine, if possible, the cause of this sign and to appraise its significance. Few, if any, more interesting renal phenomena than orthostatic albuminuria come to our notice. It was observed as early as 1887, and variously named cyclic, physiologic, intermittent, orthotic or orthostatic albuminuria. Orthostatic albuminuria is the most fitting appellation, as it designates an albuminuria which occurs only in the upright standing posture. But none of these names adequately explain its pathogenesis.

In our cases the albumin appears in urine voided from three to seven minutes after the erect posture has been assumed, and it disappears completely from the urine voided from three to seven minutes after the horizontal or lying posture is taken. Quantitatively, there is usually a heavy or very heavy trace.

This condition is most commonly observed in children and adolescents, but is not uncommon in adults. One of our patients is 24 years old, the other, 28. It occurs equally in the two sexes. These patients present a general relaxation and atonia of muscular and ligamentous structures, both skeletal and visceral, which manifests itself in the long thorax, with dropped heart and low diaphragm, the scaphoid abdomen and the marked visceroptosis. The faulty ligamentous structure gives them an abnormal loose jointedness and hyperflexibility of the spine.

Subjectively, they are of the asthenic type, easily fatigued, especially by effort in the standing posture, and most of all by the act of standing itself. They are subject to syncopal attacks, cardiac palpitation, headaches, and other evidences of vasomotor instability.

Orthostatic albuminuria is differentiated from nephritis and the inflammatory albuminurias by its prompt and complete disappearance, on correction of the upright posture, or the assumption of the horizontal. The urine secreted in the horizontal posture is normal in quantity and is free from any pathologic formed or chemical elements. During the albuminuric periods there is a marked oliguria, without increase of specific gravity. There is no impairment of salt and urea elimination. The pigments are increased, and phenolsulphonephthalein excretion is definitely diminished. Concomitant with the disappearance of the albumin, there is a return to normal elimination quantitatively and qualitatively. Hence it seems that the frequent and sudden albuminuric periods are attributable to renal dysfunction, not conditioned on intrarenal lesion, but on a factor which becomes operative through these postural changes, and which in turn suspends its influence in a similar manner.

### EXPLANATIONS OF THE PHENOMENON

The modus operandi of this postural change in the production of the albuminuria has been the subject of speculation and investigation for many years. The earliest observers held renal hyperpermeability, inflam-

\* Read before the Society of Lebanon Hospital Alumni, Dec. 13, 1921.



matory lesions, and increased venous pressure<sup>1</sup> as possible causes.

Erlanger and Hooker,<sup>2</sup> in a painstaking and detailed series of experiments on blood pressures, pulse pressure and other vasomotor functions, investigated a case of orthostatic albuminuria. They found both in the normal individual and in the albuminuric a rise in diastolic pressure and a corresponding decrease in pulse pressure in the upright position. The albuminuric, however, has a smaller pulse pressure than the normal subject, and they conclude that this is due to a greater vasomotor instability of the albuminuric. They hold that this vasomotor disturbance stands in possible causal relation to the albuminuria, without advancing any theory as to what the disturbance in the underlying physiologic mechanism might be.

Mason and Erickson<sup>3</sup> assert that they have confirmed this observation. They consider the low pulse pressure as the indubitable cause of the albuminuria, and do not believe it due to the mechanical interference with the return flow from the kidney.

Jehle,<sup>4</sup> in 1908, demonstrated that all orthostatic individuals showed a lordosis in the upright posture. Such a lordosis was a rare and exceptional finding in otherwise normal persons, and on the basis of this finding, supported by the observation that with proper correction of the lordotic position the albuminuria could be prevented, he concludes that the lordosis is the direct cause of the albuminuria. He was the first to suggest a purely mechanical factor as the cause of the albuminuria. He was able in his experiments to prevent albuminuria in the upright posture by correcting the lordosis, either with postural modification, such as bending the knee in the standing position, or by having the patient sit down.

Sonne,<sup>5</sup> in 1918, reported eleven cases of orthostatic albuminuria, in all of which ureteral catheterization showed a normally secreting right kidney, and an albuminuric left kidney.

REPORT OF AUTHORS' CASES

CASE 1.—*History*.—Mrs. P. W., aged 24, weight 101 pounds (45.8 kg), height, 5 feet (1.5 meters), housewife, born in the United States, whose family history was negative and whose right kidney was removed in 1917 because of a cystic degeneration of congenital origin, which had completely destroyed the function, complained of lassitude which became painful fatigue on effort, especially on standing, and of dizziness with anorexia and epigastric fulness and discomfort after eating. There were severe mental depression and restlessness. These symptoms had persisted for the last four months. The menstrual function was normal.

*Physical Examination*.—The general musculature was underdeveloped. There was hypermobility of all joints, due to ligamentous relaxation. The spine could be extended to lordosis with effort. The pupillary and knee reflexes were normal. The tonsils and teeth were normal; there were no lymphatic nodes. The thorax was long and thin. The heart, of the drop type, was normal in size and rhythm. The lungs were normal. The abdomen was of scaphoid shape. The right flank showed a nephrectomy scar. The left kidney was not palpable. The liver was palpable at the costal border.

*Röntgenologic Examination*.—There was no evidence of a defect in the outline of the stomach or duodenum. There was marked ptosis of the stomach, the entire organ lying below the crest of the ilium. The stomach was atonic in type. A six hour plate revealed retention. A twenty-four hour plate

disclosed the meal in the rectum and ascending colon, and quite a large amount of barium in the cecum.

*Conclusions*.—There was marked gastro-enteroptosis with cecal stasis.

TABLE 1.—URINARY FINDINGS IN CASE 1

Quantity, C.c.	Specific Gravity	Albumin*	Urea, per Cent.	Comment
58	1.018	0	1.8	On arising in morning
44	1.014	0	1.3	On arrival at office with corset
8	.....	H. T.	3.6	Standing 15 minutes without corset
2.6	.....	H. T.	2.4	Standing 30 minutes without corset
4.4	.....	V. H. T.	2.8	Standing 15 min. with loose corset†
9.0	.....	F. T.	1.4	Standing 15 min. with loose corset
14	.....	V. F. T.‡	0.8	Lying 15 minutes with corset
56.2	1.006	0	0.1	Lying 7 minutes without corset
85	1.005	0	0.1	Standing 15 minutes with corset
40	1.007	V. F. T.‡	0.2	Standing 30 minutes with corset

Standing Without Corset		Standing With Corset	
Phenolsulphonephthalein:			
First hour.....	C.c. Per Cent. 143 25	C.c. Per Cent. 235 32	
Second hour.....	35 8	240 23	

Microscopic examination was always negative.  
\* H. T., heavy trace; V. H. T., very heavy trace; F. T., faint trace; V. F. T., very faint trace.  
† One glass of water was taken.  
‡ Not detectable by Heller's test.

CASE 2.—*History*.—Miss L. L., aged 28, weight 121 pounds (54.8 kg.), born in the United States, whose family history was negative, remembered that since early childhood she had had dizziness, which became faintness if the standing posture was maintained. Ten years before we saw her she was placed at absolute rest and on a sharply restricted diet for six weeks as a treatment for chronic nephritis. Nine years before, she was ill of pneumonia two weeks. The patient was in possession of apparently good health except that she was unable to hold the erect posture for more than a minute or two without dizziness, which went on to faintness if persisted in. Exercise—walking or dancing—did not cause these symptoms. The menstrual function was normal.

*Physical Examination*.—The general musculature was good. The spine could be extended to lordosis with effort. The pupillary and knee reflexes were normal. The tonsils and teeth were normal; there were no lymphatic nodes. The thorax was long and thin. The heart was of the drop type and was normal in size and rhythm. The lungs were normal. The abdomen was normal. The liver and kidneys were not palpable.

TABLE 2.—URINARY FINDINGS IN CASE 2

Quantity, C.c.	Specific Gravity	Albumin	Urea, %	Chlorids, %	Comment
1. 33	1.016	V. F. T.*	1.8	1.8	On arrival after walking 45 minutes with corset
2. A } 28	1.017	{ F. T. }	2.2	2.0	{ A. Standing 10 minutes with corset
2. B }		{ V. F. T.* }			{ B. Standing 20 minutes with corset
3. A } 10	1.020	{ V. H. }	2.4	2.0	{ A. Standing 10 minutes without corset
3. B }		{ V. H. }			{ B. Standing 18 minutes without corset

\* Not detectable by Heller's test.  
*Röntgenologic Examination*.—There was no evidence of a defect in the outline of the stomach or duodenum. The stomach was ptosed, its greater curvature being well below the crest of the ilium. The motility was normal. There was marked ptosis of the transverse portion of the colon.  
*Conclusions*.—In this case there were gastroptosis, enteroptosis, coloptosis and colonic stasis.

URINALYSIS

The urinalyses, frequently repeated, yielded fairly constant results, as indicated in the accompanying tables. The upright posture with unsupported viscera was attended by a marked oliguria. In Patient 1, with the right nephrectomy, whose entire excretion came from the left kidney, the total output during this phase

1. Sterling: Albuminuria in the Apparently Healthy, *Lancet* 2: 1157, 1887.  
2. Erlanger and Hooker: *Johns Hopkins Hosp. Rep.* 4: 148, 1904.  
3. Mason, E. H., and Erickson, R. J.: *Am. J. M. Sc.* 156: 643 (Nov.) 1918.  
4. Jehle, Ludwig: *München. med. Wchnschr.* 55: 12, 1908.  
5. Sonne, C.: *Hospitalstid.* 61: 800, 817 (June 12, 19) 1918.



fell as low as 2.6 c.c. for a fifteen minute period. When both kidneys are present it is unlikely that so sharp an excretory diminution will occur. With visceral support or on assumption of the horizontal posture, there occurs a prompt diuresis. The specific gravity of the urine shows no marked fluctuation, but it is noted that the urine voided during the period of diminished excretion has a lower specific gravity, and that the specific gravity rises with the increase of the urine output. In other words, the oliguria is not attended by concentration. The urea and chlorid elimination shows no variation from normal in the albuminous urine. The phenol-sulphonephthalein excretion shows a marked diminution.

#### BLOOD AND PULSE PRESSURE

The blood pressure in Patient 1 after fifteen minutes in the erect posture without a corset, during which a heavily albuminous urine accumulated in the bladder, was: systolic, 106; diastolic, 84; pulse pressure, 22. When the same patient wore a supporting corset in the erect posture for fifteen minutes, during which time an albumin-free urine accumulated in the bladder, the blood pressure was: systolic, 104; diastolic, 82; pulse pressure, 22. After fifteen minutes in the horizontal position, it was: systolic, 108; diastolic, 64; pulse pressure, 44.

In Patient 2 the blood pressure, after fifteen minutes in the erect posture, without a corset, was: systolic, 118; diastolic, 88; pulse pressure, 30. When the patient wore a supporting corset in the erect posture for fifteen minutes, the blood pressure was: systolic, 115; diastolic, 88; pulse pressure, 27. After fifteen minutes in the horizontal position, it was: systolic, 115; diastolic, 65; pulse pressure, 50.

We confirm Hooker and Erlangers' observation of the diminished pulse pressure, in the upright posture of the albuminuric, but are unable to find any relation between this lessened pulse pressure and the albuminuria.

Our cases of orthostatic albuminuria presented severe abdominal visceroptosis, and it seemed impor-

tant to determine whether the albuminuria and the visceroptosis were unrelated signs of a common and underlying developmental defect, or whether the visceroptosis stood in a causal relation to the albuminuria. To that purpose our patients were fitted with a properly constructed abdominal corset, which held the viscera well supported, and which entirely obviated mesocolic or mesenteric tautness or tension. The correction of the ptotic defect by the corset was confirmed roentgenologically.

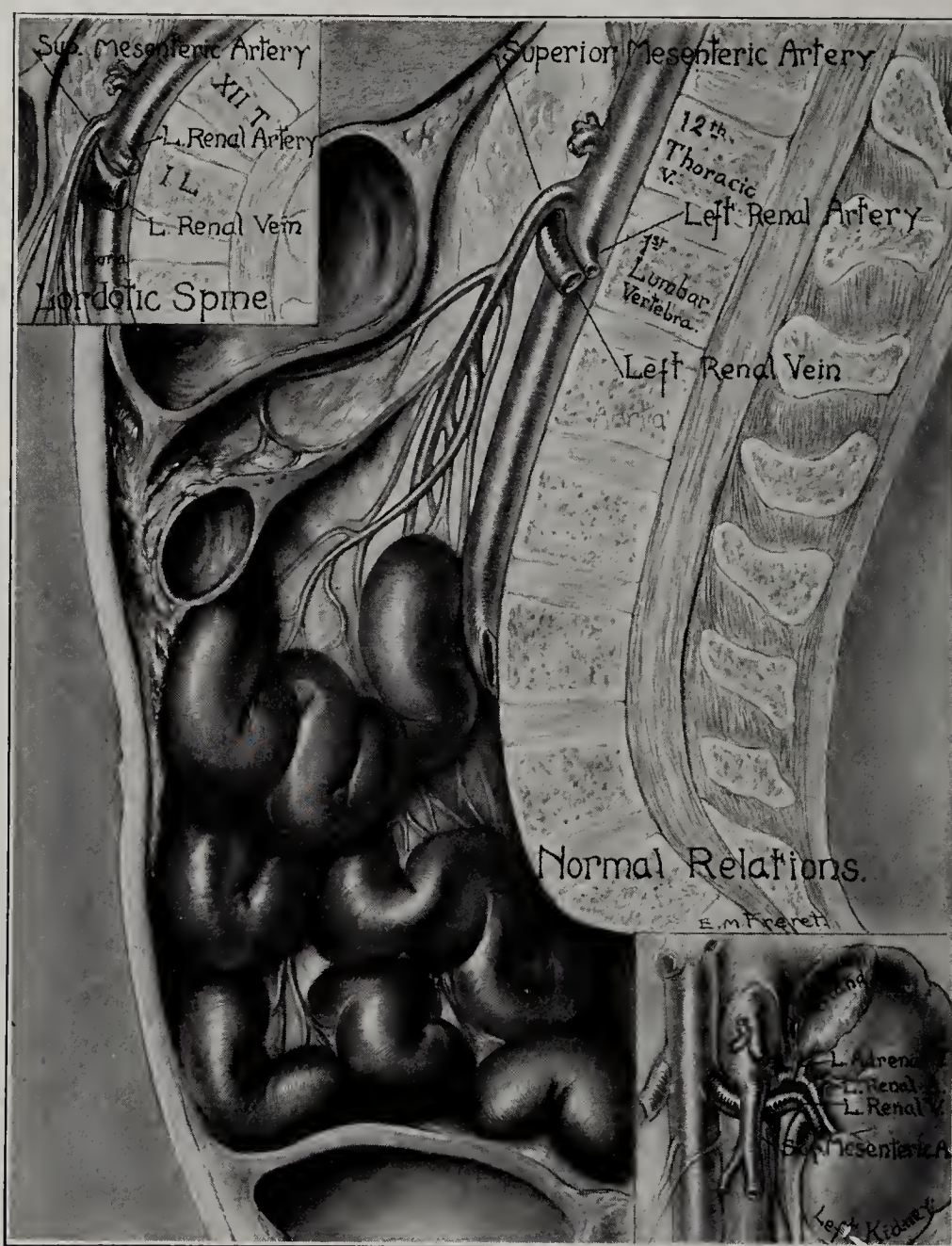
The patient was placed in the orthostatic posture until the urine showed a very heavy trace of albumin.

Then the supporting corset was applied and the patient maintained in the orthostatic posture. The albumin disappeared in about the same time interval as was required for its disappearance in the horizontal posture. The patients were held as nearly lordotic as the corset permitted, without influencing the result; that is, they were albumin free while the ptosed viscera were supported. This observation was confirmed repeatedly.

In Case 1 positively, and Case 2, also, we believe that the left kidney and the left renal vein are the structures involved, and a study of the anatomic relations, particularly of the left renal vein, yields much enlightening information.

The renal veins are formed at the hilum, by the union of from three to five branches which

come from the kidney substance. They are directed medially, and slightly upward, and lie in front of the corresponding artery. On account of the position of the vena cava, to the right of the median line, the left vein is somewhat longer than the right and passes in front of the abdominal aorta, just below the origin of the superior mesenteric artery, to reach its point of entrance into the vena cava. The left renal vein, then, lies in front of the aorta in such a position that either tension on the mesenteric artery from visceral tug or ptosis, or pressure from the aorta projected forward by a lordotic spine, would cause its compression by the arterial pincers formed by the aorta and mesenteric artery. That such a compression actually does occur



Upper left inset, transverse view of left renal vein compressed by impinging vessels. Illustration, with lower right inset, normal transverse and anteroposterior views of relations of left renal vein.



by tension from the mesocolon, we were able to demonstrate on the cadaver, as indicated in the accompanying illustration.

Such an anatomic explanation would fit in well with the clinical phenomena, and account for the rapid onset of the albuminuria whenever the pincers obstruct the blood flow in the left renal vein, and its equally rapid subsidence when the compression is released. It would explain why not all lordotic persons are albuminuric, and why not all visceroptotic persons are albuminuric; for only when the angle formed by aorta and mesenteric artery is sufficiently acute, and the renal vein lies closely enough to be compressed, is there the entire mechanism that will produce a left renal stasis.

The left suprarenal veins empty into the left renal vein, proximal to the point of compression, so that concurrently with renal stasis there must occur left suprarenal stasis, caused by the same factors. Just how, if at all, this suprarenal circulatory disturbance has any bearing on the well recognized blood and pulse pressure variation from normal, which occurs in this condition, constitutes an interesting problem, and merits further investigation.

#### CONCLUSION

Orthostatic albuminuria is due to renal stasis caused by a compression of the left renal vein, in arterial pincers composed of the aorta and the mesenteric artery. These arterial pincers become operative when the aorta is projected forward by a lordosis or when the mesenteric artery is pulled to tautness by the visceroptotic tug from the mesocolon.

Further study should determine whether either one of the two branches of the arterial pincers, acting independently, can sufficiently compress the vein. That is, we hope to be able to show whether the abdominal visceroptosis alone can produce the albuminuria, whether the lordosis alone can produce it, or whether both are necessary factors in the productive mechanism.

The magnitude of the pulse pressure holds no relation to the albuminuria, nor has it any influence on the elimination of water, urea or chlorids.

Further investigation should throw light on what influence the circulatory disturbance of the left suprarenal gland may have on the general vasomotor instability in this condition.

50 East Seventy-Ninth Street—1329 Madison Avenue.

**Plastic Operation on Nose.**—O. Ivanissevich reconstructed the nostrils in a young woman by grafting a wedge from the edge of the ear on the thumb. The hand was fastened to the ear until the flap had grown to the thumb. The flap was modeled to use for the tip of the nose, and the hand was then fastened to the face until the flap had grown in place on the nose. By this intermediate-host method the deformity was corrected very successfully. The various steps of the operation are shown with the ultimate outcome in twenty-four illustration in the *Prensa Médica Argentina* 8:73 (July 30) 1921.

## ISOLATED DISEASE OF SCAPHOID BONE OF FOOT

ARTHUR S. RISSER, M.D.

BLACKWELL, OKLA.

In 1908, Koehler<sup>1</sup> of Wiesbaden reported three cases of disease of the scaphoid bone of the foot, occurring in children and limited to the scaphoid. Since then only eleven additional cases have been reported,<sup>2</sup> if my records are complete; so we may conclude that the condition is not very common. The disease is scarcely mentioned in the textbooks of surgery or pathology. The etiology is obscure, though the clinical history, symptoms and course are fairly uniform. The roentgen ray furnishes the only positive means of diagnosis. None of the cases reported have been fatal, and none of the patients have been operated on, so that neither bacteriologic nor pathologic studies have been made. Hence, the roentgen ray furnishes the nearest approach to the study of the pathology of the disease. The roentgen-ray findings are fairly constant and typical, and coincide with the clinical course of the cases recorded.

In view of the rarity of the disease and the differences of opinion as to its etiology and pathology, and because of the fact that most of the meager literature on the subject is foreign, it would seem worth while to report an additional case which came under my personal observation.

#### REPORT OF CASE

**History.**—A boy, aged 6, whom I saw in February, 1917, complained of pain in the foot. He developed a limping gait and walked and ran flat footed, as the pain was increased by the effort to rise on the toes and utilize the spring of the arch of the foot. Pain, however, was never severe enough to prevent his getting about in his play. There was great tenderness to direct pressure on the dorsum of the foot, especially over the scaphoid. Marked redness, local heat and swelling were present. Transient, mild fever was present, but this might have been due to a concurrent catarrhal infection to which the boy was subject. The tonsils, while not greatly enlarged, were subject to repeated attacks of inflammation. The tonsillar and cervical glands were slightly swollen. No

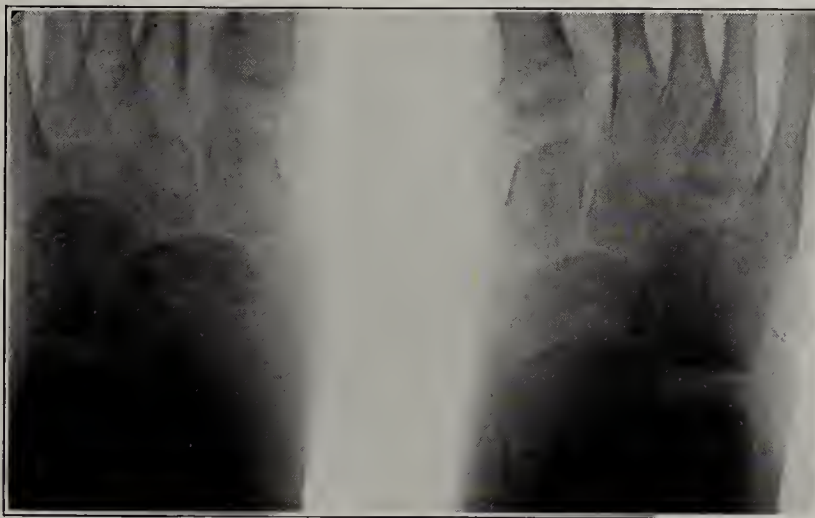


Fig. 1.—Diseased scaphoid compared with the normal.

1. Koehler, A.: Ueber eine häufige bisher anscheinend unbekannte Erkrankung einzelner kindlicher Knochen, Verhandl. d. deutsch. Röntgen Gesellsch. 4: 110, 1908, München. med. Wehnschr. 55, No. 37.

2. These cases have been reported by:

Behn: Isolierte Erkrankung des Naviculare pedis bei Kindern, Fortschr. a. d. Geb. d. Röntgenstrahlen 16: 262.

Dobisch: Zur Aetiologie der Koelerschen Knochenerkrankung, München. med. Wehnschr. 55: 2285.

Fasset, F. J.: Isolated Disease of the Scaphoid, J. A. M. A. 62: 1155 (April) 1914.

Haenisch: Ueber eine häufige bisher anscheinend unbekannte Erkrankung einzelner kindlicher Knochen, München. med. Wehnschr. 55: 2377.

Hetzel, W. B.: Isolated Disease of the Scaphoid Bone of the Foot (Koehler's Disease), Am. J. Orthop. Surg. 15: 214 (March) 1917.

Krause: Handbuch der Anatomie des Menschen, 1: 92, 1917.

McClure, C. R.: Isolated Disease of the Scaphoid, J. A. M. A. 71: 1360 (Oct. 26) 1918.

Pfahler, G. E.: Isolated Disease of the Scaphoid Bone of the Foot in Children (Koehler's Disease), Surg., Gynec. & Obst. 17: 625 (Nov.) 1913.

Preiser: Zur Frage der typischen traumatischen Ernährungsstörungen der kurzen Hand- und Fusswurzelknochen, Fortschr. a. d. geb. d. Röntgenstrahl 17: 360.

Schäffer, K.: Die Köhlersche Knochenerkrankung, München. med. Wehnschr. 57: 1548, 1910.

Stumme: Fortschr. a. d. Geb. d. Röntgenstrahl. 16: 342.



other glands were enlarged. Sometime previously the child had struck his foot on a chair, but it is not known just what part of the foot received the blow.

The father and mother were both well. The maternal grandfather, grandmother, and other relatives on the mother's side had died of tuberculosis. There was no venereal taint. Birth had been normal. The child had been artificially fed. Development had been normal. The boy had had whooping cough, mumps, chickenpox and repeated attacks of "colds," manifested by tonsillitis, pharyngitis, coryza and cough; he



Fig. 2.—Diseased foot: scaphoid narrowed, outline ragged, granular appearance.

had had otitis only once (with whooping cough five years before). At the time of onset of the scaphoid disease he was just recovering from one of these catarrhal attacks, and the question is pertinent: Was the bone disease a sequel of the throat infection? Was it another instance and evidence of the many manifestations of focal infection? However that may be, the cases thus far reported give no uniform or consistent history of trauma as to the possibility of focal infection.

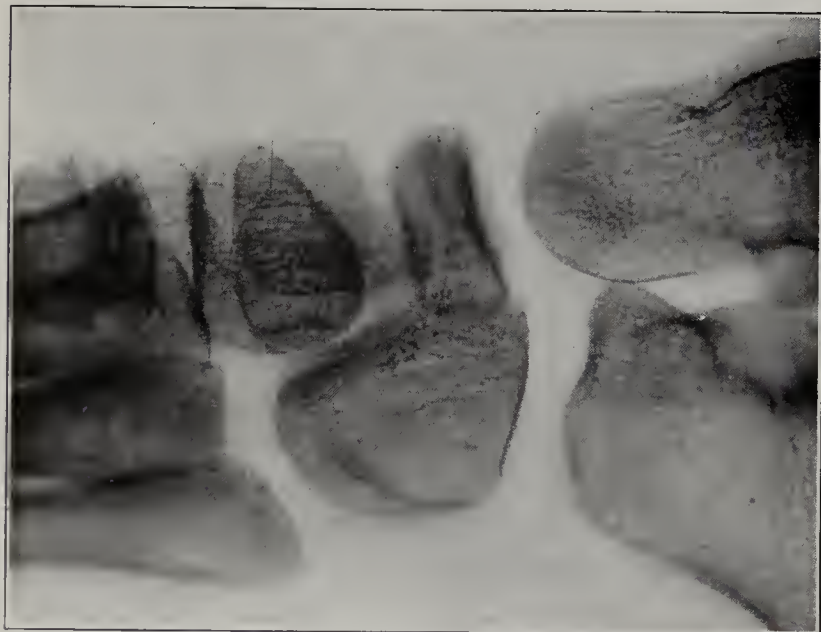


Fig. 3.—Diseased foot, recovery advanced, scaphoid regaining normal size, shape and roentgen-ray appearance.

**Clinical Course.**—A plaster cast was applied and worn for a few days, when the discomfort of the eruption of an intercurrent attack of measles necessitated its removal. The cast was purposely not reapplied, as it was decided to test the necessity of fixation and support. Within three months the acute symptoms of swelling, pain on weight bearing, tenderness on pressure, and limping had practically disappeared, although it is worthy of note that these symptoms were temporarily increased after the attack of measles. The pain and

tenderness were never severe enough to prevent the child from using the foot in play, though for about three months the limp and the tendency to walk flat footed or on the heel were very marked. The boy's gait resembled that of a child which had had an infantile paralysis affecting one leg.

The roentgen-ray findings in all the cases thus far reported are fairly uniform, and they may be summarized by describing the appearances in my case. The scaphoid shadow as a whole was much smaller in all dimensions than normal, but especially was it flattened anteroposteriorly, perhaps to a half of its normal thickness. Instead of the normal and smooth edged and rounded outline, the margins of the bone shadow were very ragged and irregular. The normal trabeculated appearance of the bone was lost so that the diseased scaphoid contrasted strongly with the other bones of the foot and with the scaphoid of the opposite side. No distinction was possible between cortex and medulla. The roentgenogram revealed a greatly increased but irregular, somewhat granular density of the whole body of the bone and in particular of the ossifying center.

Roentgenograms disclosed a gradual return of the bone to normal, coincident with the improvement in the clinical signs, and in six months it was impossible, roentgenogically, to distinguish between the two scaphoids.

It is with the hope that other cases may be carefully studied and recorded, and that the various obscurities of this disease may be cleared up, that I present this report.

## Clinical Notes, Suggestions, and New Instruments

### A MODIFICATION OF THE FLAGG ANESTHESIA APPARATUS

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Devices for administering ether are already widely varied in the mechanical details, but the modification here described has proved its worth. As junior intern I had a Flagg machine assigned to me for the routine anesthesia work. It was very satisfactory because of the visible ether-drop feed (E), and the fact that the gas-oxygen inlet (GO) led directly to the airway (A) between the rebreathing bag and the mask, making it a complete unit in which it was possible to use gas



Modification of Flagg anesthesia apparatus.

or oxygen at any time without interfering with the ether administration. The only provision, however, for allowing the patient air during the course of the anesthesia was to empty the bag partly and then refill it by means of the valve over the mask. At best this gave a varying mixture for respiration, and made one more demand on the anesthetist's attention.

A certain amount of rebreathing seems to be desirable, but it is well not to exclude air too much. Luke, in his textbook on anesthesia, says that the more air deprivation the patient is subjected to, the more likely will he be to suffer from after-sickness and headache. The widely used Bennett apparatus provides ample means for allowing fresh air to enter



Through the courtesy of the operating room nurse, I secured a "chimney" or collar (*C*) from an old Bennett, and the valve (*V*) usually used on the gas bag of that machine. The collar (*C*) was soldered on the outer end of the airway (*A*) of the Fagg apparatus and the rebreathing bag attached to the valve (*V*), which is built to slip on the collar. The same thing could be accomplished by soldering the valve directly to the Fagg apparatus.

The valve makes it possible to leave an open slit of the desired width for the entrance of air. It is left closed until the induction stage is passed; then it is opened and left practically untouched during the operation. It is only necessary under these conditions to regulate from time to time the rate of ether dropping to carry on a very smooth and uniform anesthesia and one in which the patient is well oxygenated.

I used this modified apparatus in fifty-seven cases, and the present junior intern has found it very satisfactory in 150 cases during the last six months. He realized its superiority even more when it was necessary to change to the regular model for a time. Any one willing to take the trouble to make this change will feel well repaid.

Dr. P. J. Flagg writes that the Tiemann Company, which supplies the inhaler, will be glad to provide an air section at a small additional expense.

Roosevelt Hospital.

#### CONGENITAL ATRESIA OF THE ESOPHAGUS

H. G. WILLARD, M.D., TACOMA, WASH.

A baby girl, born, Oct. 17, 1921, weighing 6 pounds, 12 ounces (3 kg.), was apparently normal and well formed. She was unable to nurse, and when given fluids would choke and regurgitate and become cyanotic. When fluids were given



Fig. 1.—Congenital atresia of the esophagus: *A*, probe passing through upper esophageal fistula into trachea; *B*, probe passing from trachea back into lower esophageal pouch.

very slowly, she succeeded in retaining a small amount. Some castor oil which was given passed through with several movements of meconium. When an attempt was made to pass a catheter into the stomach, an obstruction was met in the upper part of the esophagus. The baby died of asphyxia at the age of 54 hours. Necropsy, performed by Dr. A. E. Broman, revealed that the upper end of the esophagus ended

blindly at a point 4.5 cm. ( $1\frac{3}{4}$  inches) from the epiglottis. It was continued as a fibrous cord for a distance of 0.75 cm. ( $\frac{3}{16}$  inch) and then was continued as a normal esophagus. At a point 0.75 cm. above the occlusion of the esophagus there was a fistula 1 mm. ( $\frac{1}{25}$  inch) in diameter which opened into the trachea. There was a second fistula 1 mm. in diameter



Fig. 2.—Congenital atresia of esophagus: probes passing through two esophageal fistulas into trachea.

between the trachea and the upper end of the portion below the atresia. The distance between these two fistulas was 1.5 cm. ( $1\frac{1}{2}$  inch). The lungs contained one-half volume of air. There were no gross abnormalities noted in any organ of the body except those mentioned. The stomach contained a small amount of fluids which had the appearance of diluted milk and mucus. The anatomic diagnosis was: congenital atresia of the upper third of the esophagus; two fistulous communications between the esophagus and the trachea; aspiration pneumonitis.

It is interesting to note that in this case part of the fluids given to the baby found their way into the stomach by way of the trachea and the small fistulous tract leading from the trachea into the lower part of the esophagus. Most of it was evidently aspirated into the lungs. Hirsch<sup>1</sup> states that up to July 1, 1920, 146 verified cases of congenital atresia of the esophagus have been reported in infants.

Puget Sound Bank Building.

1. Hirsch, I. S.: Congenital Atresia of the Esophagus, *J. A. M. A.* 76: 1491 (May 28, 1921).

**The Work of the Scientist.**—Take from the air every aeroplane; from the roads every automobile; from the country every train; from the cities every electric light; from ships every wireless apparatus; from oceans all cables; from the land all wires; from shops all motors; from office buildings every elevator, telephone and typewriter; let epidemics spread at will; let major surgery be impossible—all this and vastly more, the bondage of ignorance, where knowledge now makes us free, would be the terrible catastrophe if the tide of time should but ebb to the childhood days of men still living! . . . Therefore, whoever desires progress and prosperity, whoever would advance humanity to a higher plane of civilization, must further the work of the scientist in every way he possibly can.—William J. Humphries.



IMPROVED NEEDLE AND METHOD FOR CITRATED  
BLOOD TRANSFUSIONS

DARWIN B. POND, M.D., CHICAGO

Attending Surgeon, Ravenswood Hospital

In performing transfusions by the Lewisohn method and using a relatively large needle, gage 11, it was frequently observed that, after securing about 300 c.c. of blood, clotting

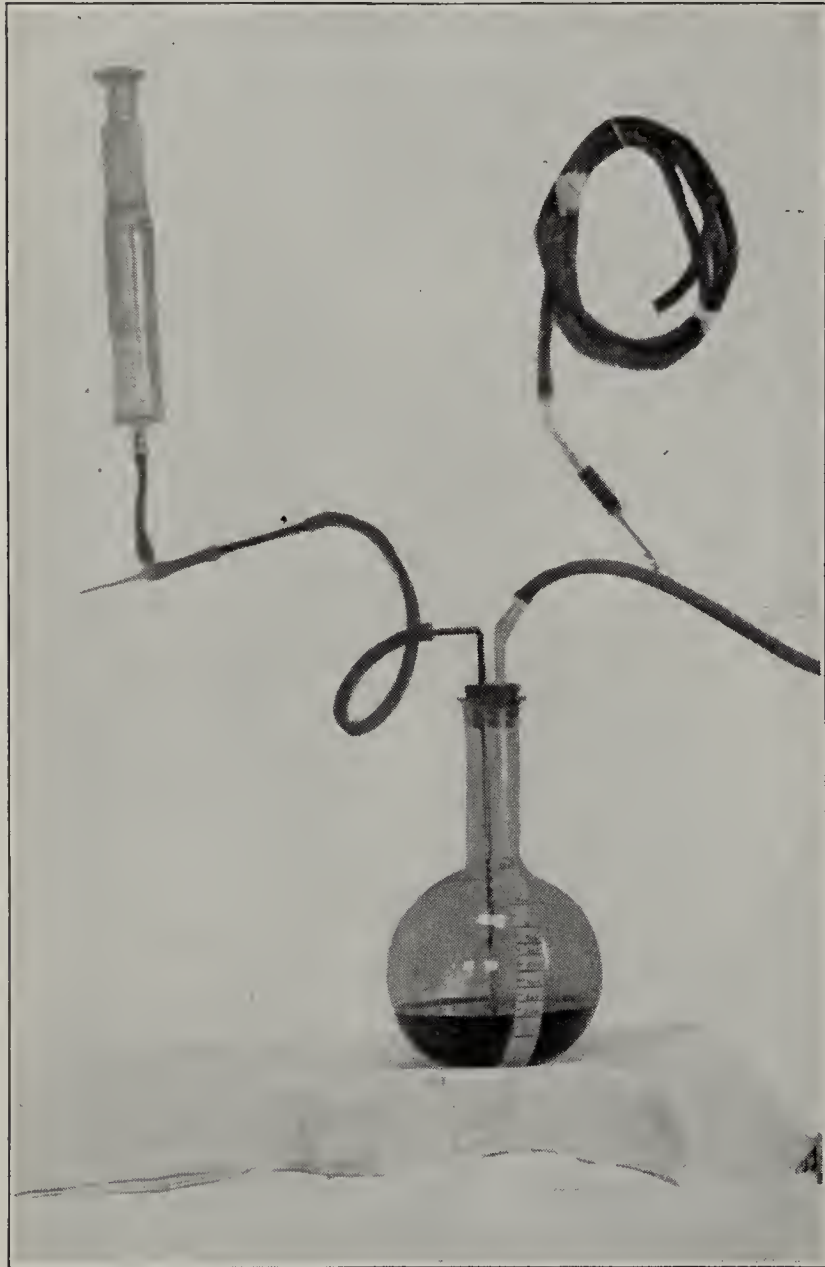


Fig. 1.—Improved apparatus for blood transfusion.

occurred around the outlet of the needle, especially with a donor whose coagulation time was rapid. To overcome this difficulty, which interfered with the flow, and to preclude the possibility of subsequent embolus resulting from a detached portion of this clot, it seemed desirable to secure a mixture of the citrate solution with the blood before exit from the needle.

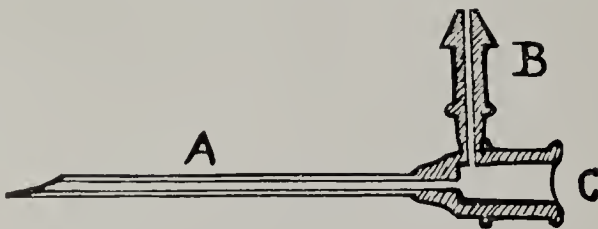


Fig. 2.—Improved needle for blood transfusion.

With this idea in mind, I devised a needle, as shown here-with, which has proved satisfactory during the last two years. The apparatus consists of the aspirating needle, *A*, gage 13, with a rather blunt point, into the shoulder of which is soldered at right angles an ordinary blood needle, *B*, gage 17, its lumen entering that of the larger needle where the thread is usually encountered. The latter has been reamed out, thus

enlarging the mixing chamber, *C*, and presenting a smooth surface to the current of blood. To the small needle, *B*, is attached a short piece of flexible rubber tubing connected with a 50 c.c. glass syringe, containing 2 per cent. sodium citrate solution, which by pressure on the syringe piston is caused to mix with the blood before it leaves the needle, and during its passage to the graduated Florence flask. Here further mixing is secured by frequent oscillation of the flask. Ten cubic centimeters of citrate solution is mixed with every hundred cubic centimeters of blood. The flask is closed with a rubber cork through which two glass tubes project. The inlet is connected to the needle with rubber tubing.

When the desired amount of blood is secured, a longer piece of tubing is slipped over the shorter glass tube, the flask inverted, and its contents administered to the recipient through a medium size needle. After inversion of the flask, the longer glass tube acts as an air inlet.

ADVANTAGES OF THE METHOD

The advantages of this method are:

1. There is no clotting of blood in the needle or elsewhere.
2. Tendency to mutilation of blood cells by the stirring rod against the sides of the graduate is avoided.
3. Use of a closed container avoids possible contamination of citrated blood with lint or other foreign material which cannot be seen in this opaque fluid.

4363 Lincoln Avenue.

A NEW EAR BASIN

WILLIAM W. GOLDNAMER, M.D., CHICAGO

The ear basin here illustrated has the following advantages:

The patient cannot readily tip it in either direction, thereby spilling the solution.



Ear basin.

The operator can see exactly what he is doing, and can assist the patient if necessary.

It is a size (holding about a pint, or 0.5 liter) that is not likely to overflow, and the foreign matter may be noted when expelled.

It may be readily cleaned and polished.

25 East Washington Street.



## BIMANUAL MASSAGE IN SEMINAL VESICULITIS

R. L. REYNOLDS, M.D., OAK PARK, ILL.

Since Eugene Fuller first began making rectal examinations as a routine in patients presenting genito-urinary symptoms, inflammation of the seminal vesicles has gained increasing recognition as the cause of morbidity in the urinary and sexual functions, as well as functions of the human body distant from these organs. Many symptoms formerly loosely ascribed to inflammation of the prostate are in reality often primarily or even wholly due to infections of the seminal vesicles. One is impressed with the multiplicity of measures and methods which have been devised for dealing with this condition. Also, one cannot fail to appreciate the lack of confidence of the one in the method of the other and the fact that a standardized technic universally acceptable is still to be evolved.

Belfield has pointed out that, in stripping the seminal vesicles as usually done, the finger reaches only the lower half or two thirds of the vesicles. From a study of their anatomy and experience in endeavoring to evacuate them artificially, one realizes the truth of this statement. Often less is reached, and occasionally it is not possible to reach any part of the vesicles by a single unaided finger in the rectum. This difficulty in thoroughly evacuating them is undoubtedly the big factor in their stubborn chronicity of the inflammation.

Chetwood<sup>1</sup> says: "It is possible to palpate the seminal vesicles through the rectum, but not to reach their entire length." He has devised a hard rubber masseur, the use of which is open to the serious objection that its pressure is not accurately guided by the sense of touch. He mentions the use of counter pressure to the finger in the rectum, but uses the masseur to strip the upper poles of the vesicles.<sup>2</sup>

My purpose here is to point out an improved method of bimanual stripping of the seminal vesicles. Guiteras<sup>3</sup> describes a method of bimanual palpation of the seminal vesicles in which the left hand pushes the vesicle down against the examining finger. This enables vesicles to be felt and outlined which are not otherwise palpable, or not completely so. In massage of the vesicles, he writes: "If the soft parts in front of the rectum are too yielding, by placing the finger tips of the other hand above the pubic spine in the groin and about parallel with the inguinal canal, counter pressure may be made by which the parts are steadied enough to assist in the manipulation." This is a distinct improvement over massage with a single unopposed finger in the rectum, and is excellent as far as it goes; but it does not go far enough.

Completely to identify and outline the vesicle, it is necessary to change the position of the abdominal hand so that its fingers appose the rectal finger as it moves laterally and upward. The vesicle is identified throughout its entire extent by its peculiar feel as it slips back and forth between the apposing fingers. When this is accomplished, compression and massage of the vesicle is begun between the rectal finger and the abdominal fingers. Any hard nodular areas, which may be diverticula from the main channel of the vesicle or infiltrated areas, are massaged and compressed by a lateral rolling motion, and the contents are mobilized and perivesicular edema and infiltration improved. This compression is continued as the apposing fingers follow the vesicle from its upper pole toward its apex, where it is compressed between the abdominal fingers, the pubis, the prostate and the rectal finger.

It is not possible to strip all seminal vesicles bimanually with the same ease or the same completeness. But it is physically possible to strip any seminal vesicle which can be palpated bimanually. In any case, more can be accomplished by the bimanual method. Thick abdominal walls and heavy fascial pads over the ischial tuberosities make it difficult.

With practice and persistence in development of the technic, the number of patients not possible to massage satisfactorily at first can be markedly reduced. With patience they can be taught to relax the abdominal muscles and overcome the automatic resistance which these muscles make to the pressure of the abdominal fingers.

If the patient stands with his heels spread slightly, his toes turned in slightly, knees straight, his body bent at the hips at an angle of about 45 to 80 degrees from the perpendicular, steadying himself by one hand resting on a chair, this relaxation is aided. When the left vesicle is being massaged, he steadies himself with his right hand, and vice versa.

If one has any doubt of the superiority of the bimanual maneuver, one has only to note how much more vesicular contents can be evacuated by it.

A physical examination of a genito-urinary patient without a thorough recto-abdominal bimanual palpation is just as incomplete as that of a gynecologic case would be without a bimanual examination. It is only a step from bimanual palpation of the internal genitals in the male to treatment of them by bimanual maneuvers.

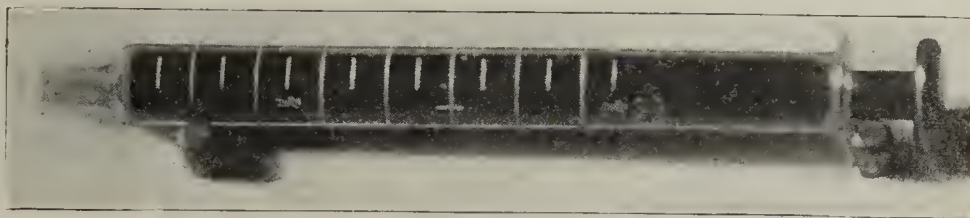
Oak Park Hospital.

## SYRINGE FOR SCHICK TESTING

C. C. YOUNG, PH.D., AND MINNA CROOKS, R.N., LANSING, MICH.

In group Schick testing, speed and accuracy of dosage are essential. This syringe aids materially in giving an exact amount, and increases the rapidity of administering diluted toxin for the Schick test.

An ordinary Luer 1.5 c.c. tuberculin syringe blank is graduated to deliver 0.2 c.c. between marks. Each 0.2 c.c. gradua-



Syringe for Schick testing.

tion mark completely encircles the barrel on the syringe. Thus, no matter in what position the syringe comes to rest in the operator's hand after inserting the needle intradermally, the graduation for dosage is apparent.

This device will increase the number of injections per hour at least 20 per cent.

## METHOD FOR INSERTION OF FRACTIONAL GASTRIC TUBE

JULIUS J. HERTZ, M.D., NEW YORK

It is sometimes impossible to cause a patient to swallow either the Einhorn or the Rehfuß tube. In such persons, the procedure here described will invariably succeed: The end of an Ewald gastric tube is cut off or a 36 French colon tube with the opening at the end is used, and the Rehfuß tube is inserted in the tube so that the "olive" projects and the rubber tubing is within the entire length of the Ewald pipe. The Ewald tube is then forcibly inserted, thus carrying with it the Rehfuß tube, after which the Ewald tube is withdrawn, leaving the smaller tube in situ.

64-66 East Eighth-Sixth Street.

**The Tuberculosis Decline in New York.**—G. J. Drolet, statistician of the New York Tuberculosis Association, speaking before the annual meeting of that organization, February 8, stated that there had been a marked decline in the incidence of and mortality from tuberculosis in New York City. This, he said, might be partly attributed to prohibition, which had reduced the amount of misery, and increased the amount of money available for food, clothing and shelter. Another possible factor was the coming into the population of a large group of Jewish stock, noted for their immunity to all diseases that commonly characterize congested city life. The housing congestion during the war failed to cause an increase principally because the buildings in which the congestion was the greatest were modern buildings, which did not have dark rooms. Pasteurization of milk, according to Mr. Drolet, has been a factor in reducing the tuberculosis death rate.

1. Chetwood: *The Practice of Urology*, p. 330.2. Chetwood: *The Practice of Urology*, p. 337.3. Guiteras: *Textbook of Urology* 1: 315.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 4, 1922

## OBESITY AND DIABETES

In a paper published in *THE JOURNAL* last year by Joslin,<sup>1</sup> which has attracted widespread attention because of the compelling evidence it presents regarding the close association of obesity and diabetes, a striking account of the ravages of the latter disease among a small group of people is forcefully portrayed. The story refers to the untimely death, from diabetes, of six out of seven persons who had moved in succession into three adjoining houses. No one spoke of an epidemic, says Joslin. "Contrast the activities of the local and state boards of health," he adds, "if these deaths had occurred from scarlet fever, typhoid fever or tuberculosis. Consider the measures that would have been adopted to discover the source of the outbreak and to prevent a recurrence. Because the disease was diabetes and because the deaths occurred over a considerable interval of time, the fatalities passed unnoticed."

Here, then, is a challenge to the medical profession of a country in which there are probably more than half a million diabetics. If diabetes is a "penalty of obesity," it becomes a duty to make the diagnosis early when the disease is still susceptible to modification by diet. The serious portent of occasional transitory glycosurias in persons apparently healthy is already beginning to be realized by clinicians. Since the use of carbohydrate tolerance tests has come into vogue, the prospect of thereby securing information useful in a prophylactic way looms up. At the Mayo Clinic, Beeler and Fitz<sup>2</sup> have recently determined the glucose tolerance of a group of stout persons exhibiting sugar-free urines on routine examination. Part of the plan consisted in ascertaining the "blood sugar curve" after the ingestion of standard doses of the carbohydrate, with special reference to the existence of a "prediabetic" stage. The majority of the patients observed showed no fasting hyperglycemia and had a nearly normal blood sugar curve after the ingestion of 100 gm.

of glucose. A few of the obese, however, afforded a curve of glycemia resembling that of mild diabetes. Although the deviations from the normal were marked in only a few cases, the question of the prognostic value of such tests may be worthy of further consideration. The Rochester clinicians, in fact, regard it as probable that more striking results would be obtainable if the dosage of glucose were made on the basis of body weight and if the sugar solution were administered intravenously according to the method of Woodyatt, Sansum and Wilder.<sup>3</sup>

Incidentally, these studies, undertaken primarily to ascertain the extent of tolerance for carbohydrates in the obese, have disclosed some unexpected reactions in certain of these persons. Instead of the expected hyperglycemia after ingestion of glucose, they may show relatively normal values. Some even excrete less than the average amounts of glucose usually eliminated after consuming 100 gm. of the pure sugar in tolerance tests. These patients, we are told, tend to excrete small volumes of urine and small quantities of sugar. They appear not to retain sugar because of an impermeable kidney, but rather to have some disturbance in sugar and water metabolism that may be related to an endocrinopathy. It seems possible, Beeler and Fitz allege, that these patients burn or store sugar with unusual rapidity, a reaction which may have a sparing influence on fat and protein metabolism and may be a factor in the development of adiposity. This conclusion cannot be accepted, however, without further scientific evidence.

## PRECISION IN ANTITUBERCULOSIS MEASURES

What constitutes resistance to tuberculosis is still a shadowy concept in the minds of most phthisiologists, although almost all are willing to admit that the flare up of frank disease is the result of a lowering of such resistance. Krause<sup>4</sup> calls for more precision in its discussion. To say that a patient's latent childhood tuberculosis flares up into active disease because of malnutrition, an unhygienic mode of life in crowded quarters, or intercurrent disease, is merely to restate the problem, with a more or less soporific effect on the mind of the auditor. Yet, "if anything is certain it is that the curve of incidence of morbid tuberculosis will run closely parallel with comparative deprivation of the means of subsistence and all the overstrain, exposure, faulty living and misery which accompany inability to live comfortably." Why?

Krause interprets resistance as a manifestation of allergy, admitting, presumably, that any explanation on this ground suffers in preciseness just so far as our notions of allergy are inexact and our knowledge of sensitization is incomplete. We are to understand that

1. Joslin, E. P.: *The Prevention of Diabetes Mellitus*, J. A. M. A. **76**: 79 (Jan. 8) 1921.

2. Beeler, Carl, and Fitz, Reginald: *Observations on Glycemia, Glycuresis, and Water Excretion in Obesity*, Arch. Int. Med. **28**: 804 (Dec.) 1921.

3. Woodyatt, R. T.; Sansum, W. D., and Wilder, R. M.: *Prolonged and Accurately Timed Intravenous Injections of Sugar*, J. A. M. A. **65**: 2067 (Dec. 11) 1915.

4. Krause, A. K.: *Am. Rev. Tuberc.* **5**: 915 (Jan.) 1922.



the normal man of our communities is sensitized to the specific proteins of the tubercle bacillus as a result of actual infection with it, that an acute response is elicited every time tubercle bacilli come into contact with normal tissues, and that stormy illness, far from being an evidence of lowered resistance, is only one of the manifestations of immunity. The same author has likened this allergic response to a two-edged sword, rapid and effective in action, capable of destroying invading parasites, but liberating at the same time into the system a quantity of poisonous material that may be sufficient to kill the animal.

If we grant that most of us harbor tuberculous infections, and that the passage of bacilli from the seat of infection calls forth a specific response operating toward the destruction of the organisms—both of which theses rest on firm foundations—we are still confronted with a problem calling for a two stage answer. By what method are tubercle bacilli destroyed in the course of this response, and under what conditions is the specific response of the sensitized individual in abeyance? With the answer to the second of these, we make decided progress toward an explanation of lowered resistance; but only when the first is answered do we know what the nature of that resistance is. We do know that allergy is depressed in the course of the acute exanthems, other fevers and in pregnancy. The tuberculin skin test, previously positive, may become negative, and coincidently with this depression of allergy there is often an extension of tuberculous disease. Is it a fair prediction, as Krause maintains, "that further investigation will show allergy to be similarly modified by fatigue, malnutrition, exposure to undue heat and cold, in fact by anything which depresses bodily function"? If this prediction is fulfilled, then it will be a fact that antituberculosis measures, aimed at present to improve living conditions and so directed long before the discovery of the tubercle bacillus, rest on the basis of scientific immunology. We shall know why our death rate from tuberculosis continues to drop, while that of the starving empires of central Europe is rising—because we are maintaining a more general allergy. But that does not mean that we shall understand allergy.

It is interesting that, in the same journal,<sup>5</sup> McCann makes a distinct contribution to precision in the dietary treatment of tuberculosis. One is reminded of the scientific procedure introduced by Woodyatt<sup>6</sup> for the calculation of ketogenic and antiketogenic factors in the diet of a diabetic. Surely, it is a late day to be advising a "run-down" consumptive to "build up" by taking "plenty of nourishing food." McCann has calculated from basal metabolism determinations the probable basal energy requirement of patients with active tuberculosis, and estimated the caloric increment which must be supplied to make good the loss in fever

and coughing. Furthermore, food intake is not to be regulated entirely quantitatively by the total calory requirement, nor yet qualitatively on the basis of synthesis of body fat and protein. Different kinds of food, through their specific dynamic action and carbon dioxid production by oxidation, require varying amounts of work by the tissues, and especially by the lungs, in their disposal; hence an excessive supply of food may compel the lungs to do an undesirable amount of work at a time when this may be disadvantageous to the active pulmonary lesions. Such factors are of more than obvious significance in pulmonary cases with hemorrhage. One wonders why such exact work has not been done previously on a large scale.

#### DIABETES INSIPIDUS FOLLOWING BRAIN LESIONS

The form of chronic polyuria commonly designated by clinicians as diabetes insipidus still remains ill defined with respect to its causation. In the discussion of the exact physiologic mechanism involved when the large volumes of urine of low concentration characteristic of the disease are eliminated, there have been many hints of an involvement of the pituitary gland. It is a fact that several investigators have reported the appearance of persistent polyuria in animals subjected to operative procedures that involved in some measure the region of the central nervous system including or adjacent to the pituitary gland. As it has been found of late that artificial extracts of the latter administered subcutaneously may reduce the output of urine in diabetes insipidus, the view that the malady is due to a deficiency of secretion of the posterior pituitary lobe has been strengthened.

These conclusions have, nevertheless, not gone unchallenged. Traumatism of the region wherein the pituitary lies is extremely likely to involve neighboring parts of the central nervous system. Hence has arisen the dispute in many cases as to whether the symptoms observed were due essentially to lesions of the pituitary gland or of the immediately adjacent base of the brain. It is the merit of Bailey and Bremer,<sup>1</sup> of the Laboratory of Surgical Research in the Harvard Medical School, to have employed a technic whereby the base of the brain just over the pituitary region could be attacked without damage to the latter. Other investigators<sup>2</sup> have already asserted that it is possible to produce transitory polyuria in dogs by puncturing the hypothalamus independently of the pituitary. The Boston surgeons, however, following the lateral route of Paulesco and Cushing, which gives perfect exposure of the region and permits avoidance of the hypophysis

1. Bailey, Percival, and Bremer, Frédéric: *Experimental Diabetes Insipidus*, Arch. Int. Med. **28**: 773 (Dec.) 1921.

2. Camus, J., and Roussy, G.: *Compt. rend. Soc. de biol.* **75**: 483, 1913; *Endocrinology* **4**: 507 (Oct.-Dec.) 1920; *Compt. rend. soc. de Biol.* **83**: 1578, 1920. Houssay, B. A.: *Endocrinology* **2**: 94 (April-June) 1918; *Compt. rend Soc. de biol.* **81**: 381, 1918.

5. McCann, W. S.: *Am. Rev. Tuberc.* **5**: 870 (Jan.) 1922.

6. Woodyatt, R. T.: *Objects and Methods of Diet Adjustment in Diabetes*, Arch. Int. Med. **28**: 125 (Aug.) 1921.



with certainty, have shown that a lesion, even extremely minute, of the para-infundibular region of the hypothalamus provokes with certitude a polyuria. They maintain, furthermore, that the permanent polyuria induced by more extensive lesions in the same region has all the characteristics of diabetes insipidus in man, e. g., possibility of concentration when intake of fluids is restricted, when pituitary extract is injected subcutaneously or in the presence of fever; excessive polyuric action on the administration of chlorids, and absence of theobromin effect.

That the primary cause of diabetes insipidus does not reside in the kidney itself is evidenced, in the few human cases already examined, by the absence of demonstrable histologic renal defects and the fact that definite association of this type of polyuria with other renal diseases is not known to occur. The experimental diabetes insipidus following lesions of the postinfundibular region of the hypothalamus persists after denervation of the kidney and cannot, therefore, be attributed to a disturbance of its nervous or vasomotor regulation.

The occasionally quoted assumption of a hormone, particularly a pituitary product secreted to regulate kidney function, has already lost any popularity which it may once have claimed. Bailey and Bremer assert that the known facts point to an extrarenal factor as the essence of diabetes insipidus and, they add, it is certainly not a coincidence that this condition is accompanied in both clinical and experimental cases by other metabolic disturbances. There are hints that experimental trauma of the hypothalamus may cause, in addition to permanent polyuria, adiposogenital dystrophy, cachexia and even rapid death, depending on the size and site of the lesion. Perhaps the little studied region concerned deserves more consideration than it has ordinarily received. At any rate, Bailey and Bremer venture the belief that the time is not far distant when the neuropathologist will no more think of omitting to examine the hypothalamus than he would the motor cortex.

#### ANOTHER REMONSTRANCE AGAINST INHALATIONS OF MERCURY

During the last few years the attention of the medical profession has been directed by clever propagandists to the treatment of syphilis by procedures which involve the volatilization of mercury-containing mixtures by heat and the inhalation of the resulting volatile products. There is nothing whatever essentially novel in the principles concerned. Inhalations, as well as fumigations of mercury, have been tested at various times since early in the history of syphilis in Europe. In view of the relative simplicity of technique and consequent ease of treatment by inhalation, in comparison with the careful procedure and skilful manipulation demanded by the use of arsphenamin and similar com-

pounds currently popular in the therapy of syphilis, it can be understood why physicians are often inclined to look with favor on the path of least mental and instrumental resistance in their management of syphilitic patients.

There can be no doubt regarding the possibility of bringing about absorption of mercury introduced into the body in the form of its vapors. Numerous records of actual poisoning through inadvertent exposure to atmospheres in which mercury was present attest the potency of the vaporized element. Indeed, it has even been asserted that the entire effect of mercury inunctions is attributable to inhalation of mercurial vapor that is volatilized from the skin. A recent writer has reminded us that if inhalations represented the only method of administering mercury they could doubtless be used. The progress of therapy has, however, furnished other procedures which have surpassed the antiquated inhalation technic in various ways. Accordingly, when the medical profession is urged through the medium of cleverly worded advertisements or the recommendations of enthusiastic salesmen to employ what amounts to a readoption of a type of treatment which has lost both its novelty and its popularity, it behooves the critical physician to demand that the reason be given.

It requires little argument to show that, in general, administration of mercury by volatilization must result in highly uncertain dosage. The technic operates disadvantageously in at least two ways: either too little of the desired drug enters the system, or local overdosage leads to pulmonary irritation. Injury to the lungs in this way has repeatedly been recorded and has given evidence of an uncertainty and a danger not equally likely when mercury is given by oral means. Furthermore, the inhalation procedure often resolves itself into administration of the drug by way of the alimentary tract, because a considerable part of the mercurial vapor may be condensed on the mucous membranes of the mouth and pharynx and gradually swallowed with the saliva. It has recently been asserted<sup>1</sup> that the proportion which thus goes into the digestive tract doubtless varies with conditions; but it must be considerable, and may well be the major part.

The Council on Pharmacy and Chemistry of the American Medical Association has refused to endorse alleged novel antisiphilitic remedies which depend essentially on the administration of mercury by inhalation.<sup>2</sup> In this decision it is sustained by the interesting and timely reinvestigation of the inhalation treatment of syphilis by Cole, Gericke and Sollmann of Western Reserve University. They have patiently attempted to give mercurial inhalations a fair trial under conditions selected to minimize the inaccuracies of dosage and to

1. Cole, H. N.; Gericke, A. J., and Sollmann, Torald: The Treatment of Syphilis by Mercury Inhalations, *Arch. Dermat. & Syph.* 5: 18 (Jan.) 1922.

2. Spiroicide Not Admitted to N. N. R., *J. A. M. A.* 76: 259 (Jan. 22) 1921.



offer the least irritant conditions. The details are not of immediate interest, because the outcome was adverse to the procedure. An improved technic devised to insure the complete inhalation of definite doses of mercury or calomel, equivalent to those used in intramuscular injection, was applied to a series of patients with active syphilis, but without any therapeutic or other systemic response. Larger doses appeared unjustifiable. Calomel produced objectional local irritation.

The conclusions of the Cleveland investigators deserve widespread notice. The assumption, they remark, that mercury would be more promptly absorbed by the lungs was based on physical misconceptions. In fact, the mercury is condensed on the mucous membranes of the mouth, pharynx and respiratory tract. That in the mouth and pharynx is, for the most part, swallowed. The absorption then takes place by the gradual conversion of the mercury into soluble compounds, just as it does with the ordinary administration of "gray powder." In other words, as Cole, Gericke and Sollmann remonstrate, the administration of mercury compounds by inhalation has no advantage over oral administration; on the contrary, "it has the serious disadvantage of indefinite dosage, and the consequent difficulty of steering between inefficiency and danger, and of special danger of respiratory irritation."

#### RÔLE OF THE SKIN IN LEAD POISONING

In the routine of life, the unprotected parts of the body become exposed to a variety of gaseous, liquid or solid substances that may act as a menace to its welfare. If toxic products thus find their way into the respiratory or alimentary tracts they may be expected to do harm whenever the dosage reaches a danger mark; for the membranes lining these parts of the organism have a structure and function favorable to absorption. The possibility of absorption through the sound skin is far more debatable. Experience shows that despite the deleterious agents with which the skin inevitably comes into contact on almost innumerable occasions, demonstrable harm rarely results. It is usually regarded as established that the uninjured skin is impermeable for watery solutions of salts or other substances. There is some evidence, on the other hand, that a certain amount of absorption of materials dissolved in fatty vehicles can take place, even though the value of inunctions as methods for the therapeutic introduction of drugs into the body has doubtless been greatly overestimated.

One might suppose that the problem of absorption by the skin could be easily and definitely solved. Most foreign substances that gain entrance to the circulation are transported to the excretory organs and there eliminated. Thus, they appear sooner or later in the urine and excrement as well as being deposited occasionally in the tissues. However, the sources of error

are not inconsiderable. There is frequently the possibility that some of a foreign substance applied to the skin may find its way unintentionally into the mouth or respiratory tract. Absorption by cutaneous channels may then be wrongly concluded to have occurred. There is little doubt that, when mercurial inunctions are applied to the skin, sufficient of the heavy metal may find its way into the body through volatilization and entrance by oral paths to simulate absorption through the skin.

With such criticisms at hand, the possibility of cutaneous absorption of lead compounds has been reinvestigated in Lehmann's laboratory at Würzburg by Süssmann.<sup>1</sup> The problem is particularly important because of the industrial importance of lead and the numerous opportunities for poisoning. For example, Hayhurst<sup>2</sup> made a thorough examination of 100 able bodied painters, and found fifty-nine of them with evidence of chronic plumbism. There are many industries in which the hazards are greater than for painters; the latter have been referred to here because of the greater possibilities of intoxication through cutaneous channels in the course of their work. Süssmann conducted his tests by applying lead salts in oily vehicles to the skin so as to exclude absolutely all chance of introduction of the poison by the oral or respiratory paths. From the data thus secured, he concluded that the maximum cutaneous absorption under favorable conditions of application of lead-containing products is from 0.1 to 0.2 mg. of the metal per square decimeter (three-eighths inch) of surface. Quantities of this magnitude are not large enough to produce lead poisoning in man, even on the assumption that the more favorable possibilities for absorption intentionally selected in the experiments would be reproduced under vocational conditions in industrial environments. It has been asserted that persons have become subjects of plumbism through using cosmetics and hair dyes that contained lead.<sup>3</sup> It can now be said that, in all probability, the main channels of the entrance of lead into the body are the alimentary canal and the lungs rather than the skin. This information, corroborated by tests under carefully controlled conditions of experiment, points the way to proper preventive measures. Alice Hamilton<sup>4</sup> stated not long ago that all the lead industries of the United States need regulation, and that we can hardly hope to lower our high morbidity rate until measures that have been adopted with signal success in other countries are adopted here. Intelligent prophylaxis is the foremost requirement.

1. Süssmann, P. O.: Studien über die Resorption von Blei und Quecksilber bzw. deren Salzen durch die unverletzte Haut des Warmblüters, Arch. f. Hyg. 90: 175, 1921.

2. Hayhurst, E. R.: Bull. 120, U. S. Bureau of Labor Statistics.

3. Oliver, T.: Lead Poisoning, in Kober and Hanson's Diseases of Occupation and Vocational Hygiene, Philadelphia, P. Blakiston's Son & Co., 1916, p. 75.

4. Hamilton, Alice: Lead Poisoning in the United States, in Kober and Hanson's Diseases of Occupation and Vocational Hygiene, Philadelphia, 1916, p. 117.



## Current Comment

### A RECOGNITION OF AMERICAN LEADERSHIP IN SCIENTIFIC MEDICINE

In a recent issue, the *Münchener medizinische Wochenschrift* calls attention to the movement in Germany for making the study of English compulsory in German schools. Until now French has been the compulsory foreign language. The editor says that scientific research in the United States has made great advances, thanks to the wealth of the country, and that American literature is on the point of taking the lead in medicine. "The young medical man planning to settle in other countries," he says, "had better be trained in English, which is the predominant language on four continents, rather than in French, as German medical men may be long debarred from settling in French speaking countries." It is gratifying to have this German recognition of America's leadership in scientific research; it is so different.

### BUFFALO PHYSICIANS PROTEST PAUPERIZATION OF PUBLIC

The Physicians' Protective Association of Buffalo, made up of 450 of the 857 physicians in that city, is carrying on an energetic fight against the pauperization of the public through free medical services in local hospitals. In a statement adopted at a meeting held January 31, addressed to the mayor and the city council, definite objection was made to the increasing tendency of "an amazingly large proportion of the population" to receive some form of relief or aid and to become to some degree dependents and paupers. The resolution says: "We believe that the time has arrived for an accounting, and that widespread and unnecessary pauperization in the form of medical aid should cease. Abuses are tolerated under the mask of public health, and should be ruthlessly exposed. There is no greater menace than the creation of a vast, willingly dependent class, and it concerns the public more than the medical profession. We are tired of the burden forced upon our profession, and weary of interference and attempted dictation of a class of salaried workers whose livelihood depends so largely on the inflation of the number in the army of fraudulent dependents." The thorough investigation of the cost of care of the sick poor and indigent was urged. In the discussion preceding the adoption of the resolution, it was claimed that, during the first three months of 1921, 7,000 patients were treated in the health centers and dispensaries of Buffalo, as compared with 100 in the same period in 1916, that the health center was merely a collecting agency for the city hospital, and that there was a concerted movement to secure as many patients as possible so that a larger appropriation from the city could be obtained. The result of the agitation was that the mayor instituted an investigation and, according to the *Buffalo Express*, "more than a score of witnesses testified that they were able to pay, but that they had received free treatment for themselves or members of their families." The fight apparently centers around

the proposed plan of consolidating all the hospitals and charity bureaus in Buffalo in a single municipal hospital. In addition to the objection of the medical profession, eight local hospitals have also made a public protest against the proposed plan.

### THE EXHAUSTION PRODUCED BY EXTREME EMOTION

That the emotions play upon our physiologic reaction is a thesis that scarcely needs to be defended. The digestive secretions, for example, are influenced by psychic states in striking ways to which the Russian physiologist Pawlow has forcefully directed attention. The idea of food may become a stimulus for the flow of saliva or even gastric juice, whereas such emotional states as anger, fear and sorrow may succeed in inhibiting the normal secretion. Strong emotions are attended by more or less well defined changes in the circulation which, in turn, cannot remain without some influence on the tissues reached by the altered blood supply. It is by no means easy, however, to define the part the emotions per se, and exertion that accompanies them, respectively play in producing the consequent exhaustion. Recently Crile<sup>1</sup> has summarized the results of his extended experiments in this field. Like some of his predecessors, he has observed profound changes produced by fear in the cells of the brain; they are most marked in the cerebellum and cerebrum, though the medulla and even the spinal cord may show the untoward effects. Histologically, the brain cells may show increased activity manifested by hyperchromatism followed by a progressive chromatolysis if the activation is continued. The Purkinje cells in particular are severely involved, and may largely disappear when the degree of exhaustion is extreme. Furthermore, it is asserted that extreme emotion causes demonstrable histologic lesions in the liver and suprarenals also. In view of the current disagreement as to the effects of emotional factors on suprarenal function, conservatism demands that these be not stressed in this connection. Crile boldly maintains that emotion causes a more rapid exhaustion than is caused by exertion or by trauma, except extensive mangling of tissue, or by any toxic stimulus except the perforation of viscera. In a recent issue of *THE JOURNAL*,<sup>2</sup> the probable involvement of toxemia in some of the most severe forms of shock was pointed out. As intoxication of a similar sort is less likely in cases of emotional exhaustion, unless the toxic substances are identified as products of fatigue, it may be that shock and "nervous exhaustion" must be more clearly differentiated in the near future. Because prostration is the end-result in either case, it by no means follows that precisely the same causes are at work.

1. Crile, G. W.: Studies in Exhaustion, II, Exertion, *Arch. Surg.* 3: 116 (July) 1921; III, Emotion, *ibid.* 4: 130 (Jan.) 1922.

2. Shock as a Result of Toxemia, editorial, *J. A. M. A.* 78: 585 (Feb. 25) 1922.

**Appendicitis.**—In appendicitis trust to the physical signs rather than to the symptoms. Local tenderness remains when the appendix has perforated or is gangrenous, even though there be no abdominal tension.—Sir D'Arcy Power, *Surgical Aphorisms*, *Clin. J.* 49:28 (Feb.) 1920.



## Association News

### ST. LOUIS SESSION

#### Special Fare Identification Certificates Available

Members may secure Identification Certificates entitling them to purchase for themselves and for their family dependents round trip tickets to St. Louis in accordance with terms that have been announced previously. Requests for these Identification Certificates should be addressed to the Secretary of the Association, 535 North Dearborn Street, Chicago, and should be accompanied by a self-addressed, stamped envelop.

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ARKANSAS

**Election of Officers.**—At the meeting of the Pulaski County Medical Society, held recently, Dr. Rolland F. Darnall was elected president and Dr. Royal J. Calcote, secretary.

**Hospital News.**—The contracts have been let for immediate construction of a modern hospital at Ozark.—The A. Bernard Building, Russellville, is being converted into a government hospital for the treatment of trachoma.

### CALIFORNIA

**Hospital News.**—A new hospital will be erected in Los Angeles; under the auspices of the University Hospital Medical College and Clinic Corporation. The building will be built in the form of a double H, making all the rooms outside rooms.—A new hospital will be erected in Sacramento, to be known as the Sutter Hospital.—A new hospital will be constructed in Oakland early in the summer, at a cost of \$200,000.

**New Officers for County Societies.**—The following elections of county societies have recently been announced: Alameda County Medical Association: president, Dr. Elmer E. Brinkerhoff, and secretary-treasurer, Dr. Charles L. McVey.—Fresno County Medical Society: president, Dr. George W. Walker, and secretary, Dr. Amos D. Ellsworth.—Sacramento County Medical Society: president, Dr. G. Parker Dillon, and secretary (reelected), Dr. George J. Hall.—San Francisco County Medical Society: president, Dr. Saxton T. Pope, and secretary-treasurer, Dr. LeRoy H. Briggs.

### COLORADO

**Bonus for Physician.**—The town of New Raymer, in a dry land community in eastern Weld County, is offering a bonus of \$200 to any physician that will locate there permanently.

### CONNECTICUT

**Personal.**—Dr. Thaddeus S. Skladzien has been named chairman of the new board of health.

**Alumni Day at Yale University.**—The second annual medical alumni day was held at Yale University School of Medicine, New Haven, on Washington's birthday, under the presidency of Dr. Benjamin Austin Cheney. Dr. Angell spoke for the university; Prof. Henry W. Farnam, for the hospital society; Dean Milton C. Winternitz, for the medical school, and Dr. Charles Farr, New York, chairman of the section of surgery, Academy of Medicine, for the graduates. The number of graduates returning was much greater than last year and "Medical Alumni Day" will in future be an established annual event at the university.

### DISTRICT OF COLUMBIA

**Personal.**—Dr. Lincoln Humphreys, M. C., U. S. Navy, Washington, has been assigned to the Naval Station, Tutuila, Samoa.—Dr. Allen J. McLaughlin, U. S. Public Health

Service, Washington, has been elected a member of the board of councillors of the Eyesight Conservation Council of New York City.

**Appropriation Bill.**—The District of Columbia appropriation bill, recently presented to the House and passed, contains appropriations for medical charities in the District of Columbia, \$246,410 is included for the completion of the construction of the Gallinger Municipal Hospital, while \$850,000 is appropriated for the support of the indigent insane in St. Elizabeth's Hospital.

### FLORIDA

**State Medical Meeting.**—It has been announced by the executive committee of the Florida Medical Association that the annual meeting will be held in Havana, Cuba, June 30. The Florida East Coast Railway will run a special Pullman train to Key West, leaving Jacksonville on June 28. Sailing connections will be made at Key West. The P. and O. Steamship Company will have a ship sailing from Tampa on the same date for the convenience of those living in that section of the state. A special excursion rate of one fare for the round trip has been arranged.

### GEORGIA

**Personal.**—Dr. John Calvin Weaver, surgeon, U. S. Penitentiary, Atlanta, has resigned from that institution and will resume general practice.

**Muscogee County Medical Society.**—At the annual meeting held recently at Columbus, under the presidency of Dr. Frank L. Cosby, the following officers were elected for the ensuing year: president, Dr. Jesse M. Anderson; vice president, Dr. Clifford A. Peacock, and secretary-treasurer, Dr. Willis P. Jordan.

### ILLINOIS

**Hospital News.**—The Lake County General Hospital, Waukegan, was recently damaged by fire at an estimated cost of \$10,000.—A communicable disease hospital will be erected at St. Joseph's Orphanage, Lisle, DuPage County, at a cost of \$10,000.

**Physician Knighted.**—It is announced that Dr. Clarence E. McKinney, Paxton, who served in the Italian army with the ambulance corps during the World War, has received the official decoration which creates him a "Chevalier of the Order of the Crown of Italy."

**Smallpox Survey.**—A district health superintendent and a quarantine officer from the state department of public health have recently completed a smallpox survey of Williamson County. The investigation that was carried out through the cooperation of local health officers and public school authorities brought to light a rather surprisingly large number of cases of smallpox that had never been reported. In many instances the patients had received no medical care whatever and little or no quarantine regulations had been observed.

**Important Court Decision.**—The validity of the rules of the state department of public health for the control of typhoid carriers was upheld by the supreme court of Illinois in its recent decision in the case of *Barmore v. Dr. John Dill Robertson*, commissioner of health of Chicago. In this decision, the court dwelt on the importance of the protection of the public health and the necessity of employing modern scientific methods in securing such protection. The claim that Mrs. Barmore was unlawfully deprived of her liberty by her quarantine as a typhoid carrier was dismissed with the statement that the constitutional guarantee that no person shall be deprived of his liberty without due process of law was not intended to limit the exercise of the police power of the state, such as the enforcement of quarantine regulations, by a board to which such power may be delegated by the legislature.

### Chicago

**Personal.**—Dr. Frederick R. Green, who has been connected with the headquarters office of the American Medical Association since 1905, and who had been secretary of the Council on Health and Public Instruction ever since its organization in 1910, has resigned as secretary of the Council, his resignation to take effect March 31, 1922. Dr. Green resigns to form a partnership with Dr. C. St. Clair Drake and Dr. John Dill Robertson for the publication of a popular monthly magazine, *Health*.—Dr. Walter H. Watterson, Veterans' Bureau, Chicago, has been assigned to the U. S. Veterans' Bureau Hospital No. 76 (Speedway), Chicago, as member of the tuberculosis board.



**Chicago Tuberculosis Institute.**—The sixteenth annual meeting of the Chicago Tuberculosis Institute will be held March 1, at the Chicago College Club, under the presidency of Dr. Ethan A. Gray. Dr. James A. Britton, attending physician, Edward Sanatorium, Chicago, and Dr. Charles Hatfield, managing director of the National Tuberculosis Association, will deliver addresses.

#### INDIANA

**Hospital News.**—The Putnam County Orphans' Home, Greencastle, was destroyed by fire recently. The loss being estimated at approximately \$15,000.—A new wing will be erected to the Union Hospital, Terre Haute.

**Personal.**—Dr. M. May Allen has been appointed assistant director of the child hygiene division of the Indiana State Board of Health, Indianapolis. Dr. Allen was formerly in charge of a colony of 1,000 French children at Dinard, France.

**Joint Medical Meeting.**—A joint meeting of the Indianapolis Medical Society and the Indianapolis Dental Society, was held February 28. Dr. Edward C. Rosenow, Mayo Clinic, Rochester, Minn., gave an address on "Sources of Infections."

#### IOWA

**County Society Elections.**—New officers of various county societies are: Des Moines County Medical Society: president, James S. Cooper, and secretary-treasurer, Dr. George H. Steinle; the Dubuque County Medical Society: president, Dr. Mary A. Killeen, and secretary, Dr. Howard E. Thompson; Johnson County Medical Society: president, Dr. Joseph H. Wolfe, and secretary-treasurer, Dr. Lawson G. Lowrey; Woodbury County Medical Society: president, Dr. William J. S. Cremin, and secretary-treasurer, Dr. F. Victor Brown; Mashaska County Medical Society: president, Dr. Frederick J. Jarvis, and secretary-treasurer, Dr. Francis A. Gillett.

#### KENTUCKY

**Hospital News.**—Plans have been approved by members of the board of tuberculosis hospitals for a \$1,000,000 bond issue for improvements and new buildings at Waverly.—The Riverside Hospital, Harlan, was recently opened by Dr. Lorenzo O. Smith.

**Personal.**—Dr. Edward J. Strickler, surgeon, M. C., U. S. Army, has been ordered from Camp Pike to Denver.—Dr. William H. McLean, has been appointed resident physician for men at the University of Kentucky, Lexington, to succeed Dr. Allen G. Ireland, who resigned recently to become director of physical education in the public schools of Connecticut.—Dr. George E. Neai, president of the Adams County Medical Society, has been appointed health officer of Adams County.

#### LOUISIANA

**Legality of the Health Board.**—The contention concerning the legal status of the present New Orleans Board of Health was determined, February 1, when the attorney general ruled that the present board legally holds office until 1925.

**Organization of Board of Health.**—The Claiborne Parish Board of Health was recently organized, and the following physicians were elected members: Dr. John W. Featherstone, Homer; Dr. Curtis A. Bailey, Athens, and Dr. Henry C. Baucum, Haynesville.

#### MARYLAND

**Personal.**—Dr. William S. Gardner, Baltimore, former president of the Medical and Chirurgical Faculty of Maryland, delivered an address at the meeting of the Washington County Medical Society, February 10.

**De Lamar Lectures on Hygiene.**—A lecture on "Climate, Health and Civilization" was given by Ellsworth Huntington, Ph.D., research associate in geography, Yale University, New Haven, February 13, at the School of Hygiene and Public Health, Baltimore.

#### MASSACHUSETTS

**Personal.**—Dr. Hideyo Noguchi, Rockefeller Institute, New York City, delivered an address, February 16, at the Medical School of Harvard University, Boston, under the auspices of the Department of Tropical Medicine.—Dr. Lonnie O. Farrar has resigned as assistant medical director of the insane asylum, North Middleboro, effective March 1.—Dr. Adelbert M. Hubbell has been elected chairman of the Haverhill board of health.

#### MICHIGAN

**Personal.**—Dr. Paul Klebba has been appointed health officer of Hamtramck, to succeed Dr. T. T. Dysart.—Dr. J. F. Thalner has been appointed city physician of Jackson. Dr. Thalner was formerly resident physician of the Sea View Hospital, Staten Island, N. Y.

**Class for Schoolchildren Affected with Heart Disease.**—A special class for children affected with heart disease who require limited exercise (designated as Group 2) has been established at the Russell School, Detroit. Children attending this class will sit in Kalamazoo chairs with a table arrangement in front. They will be given extra nourishment, such as milk and crackers. A period of rest and sleep during which they can lie down in their chairs will be given after the school exercises. Their school work will be given to them in this room. During the day, graded exercises will be given by physical culture instructors. Dr. Harry Schmidt, who has volunteered to supervise this work, will check up these exercises once a week.

#### MINNESOTA

**Hospital News.**—The Waseca Memorial Hospital was formally opened in February. The building was erected at a cost of \$65,000.—The Nurses' Home, St. John's Hospital, Zumbrota, will be enlarged at a cost of \$10,000.

**Scarlet Fever at University.**—Eighteen cases of scarlet fever have been reported at the University of Minnesota farm campus. The swimming pool has been ordered closed and social activities of the school will be discontinued for the time being.

**Personal.**—Dr. William W. Brodie, St. Louis, has been appointed superintendent of the U. S. Public Health Service Hospital, St. Paul, to succeed Dr. Charles D. Osborne, who recently resigned.—Dr. Victor N. Peterson, St. Paul, has been elected chief of the staff of the Bethesda Hospital.

**Medical Meeting.**—At the annual meeting of the Park Region District and County Medical Society the following officers were elected for the ensuing year: president, Dr. Axel C. Baker, Fergus Falls; vice president, Dr. John Jacob Hoffmann, Henning, and secretary-treasurer, Dr. Theodore S. Paulson, Fergus Falls.

#### MISSOURI

**Hospital News.**—An addition to St. John's Hospital, Springfield, conducted by the Sisters of Mercy, will be erected at a cost of \$175,000.

**Personal.**—Dr. Herman E. Pearse, Kansas City, has been appointed a member of the city plan commission by Mayor Strother to succeed Mr. Louis Oppenstein. The term is for four years.

**State Medical Meeting.**—It has been announced by the executive committee of the Missouri State Medical Association that the next annual session will be held, May 9-11, at Jefferson City, instead of May 16-18, at Excelsior Springs, as previously announced.

**Medical College Bill Declared Insufficient.**—The referendum on the medical college bill was declared insufficient by the circuit court of Cole County, February 17, and judgment rendered for the plaintiff, who sued to prevent the bill from being referred to the people at the next general election. The attorneys for the Missouri State Medical Association have filed an appeal to the supreme court.

**The Missouri Hospital Association.**—The association was organized at a meeting of the superintendents and executives of hospitals in Missouri, held at St. Louis, February 17. Dr. L. H. Burlingham, St. Louis, superintendent of Barnes Hospital, was elected president; Dr. B. A. Wilkes, St. Louis, superintendent of the Missouri Baptist Sanitarium, first vice president; Miss Sarah H. Reitz, Mexico, superintendent of Audrain County Hospital, second vice president; Miss Louise Ament, St. Louis, superintendent, Lutheran Hospital, secretary. The purposes of the association as set forth in the constitution are: to promote the welfare of the people of Missouri, to develop hospitals and hospital service, to create efficiency in the various departments and to secure the cooperation of all other organizations engaged in the same work.

#### NEW YORK

**Physicians Oppose Five Bills.**—At the meeting of the Flatbush Medical Society, February 10, at Brooklyn, resolutions were adopted to oppose five bills pending in Albany: the



Male bill, the state maternity bill, the chiropractic bill, the optometrist bill and the medical dental inspection and attendance bill. In the case of the chiropractic bill, the report based its disapproval on the ground of insufficient preliminary training.

**Personal.**—Dr. Luther F. Warren, professor of medicine, Long Island College Hospital, Brooklyn, delivered a lecture on "Nephritis," illustrated with lantern slides, at the recent meeting of the Bay Ridge Medical Society.—Dr. Ward Young has been reappointed health officer of Gouveneur for a term of four years.—Dr. Harry Moss has resigned from the East New York Hospital, Brooklyn, and will take charge of the People's Hospital, New York City.

**Campaign Against Diphtheria.**—The cities of Auburn, Schenectady and Syracuse have been selected for a thorough systematic trial of the new methods of combating diphtheria, to be conducted by the state department of health in cooperation with local health and school officials, the American Red Cross and other civic agencies. Dr. Abraham Zingher, New York, will deliver addresses on the Schick test throughout the state. According to statistics recently reported, New York state has shown a marked increase in the number of cases and of deaths from diphtheria during the last three years.

**Hospital News.**—At the annual meeting of the trustees of Faxton Hospital, Utica, January 26, it was announced that the sum of \$206,280 had been raised for a new hospital building. Construction work will be begun as soon as weather conditions permit. Dr. Thomas H. Farrell was elected president of the hospital staff.—A new two-story brick hospital is to be erected in connection with the Odd Fellows' Home, Batavia.—The People's Hospital, New York City, will erect a new building at a cost of \$1,500,000.—Twenty-four new buildings are under construction at the Sea View Hospital, Staten Island, with a capacity for 1,500 patients. The Sea View Hospital has a capacity of 760 beds.

**Committee on Prize Essays.**—It has been announced by the committee that the Merritt H. Cash Prize and the Lucien Howe Prize of \$100 each, will be open for competition at the annual meeting of the Medical Society of the state of New York, which will be held April 17, at Albany. The Lucien Howe Prize will be awarded for the best original contribution to the knowledge of surgery, preferably ophthalmology, and is not limited to members of the state society, any physician being at liberty to compete. The Merritt H. Cash Prize will be awarded for the best original essay on medical or surgery subjects and is open only to members of the Medical Society of the State of New York. The essays must be typewritten or printed, and the only means of identification of the author shall be a motto or other device. It shall be accompanied by a sealed envelop which shall have, on the outside, the same motto or device, and shall contain the name and the address of the writer. Essays should be sent to Dr. Albert Vander Veer, 28 Eagle Street, Albany, not later than April 1.

**State Maternity Bill Repudiates Federal Aid.**—In accordance with recommendations of Governor Miller, a bill has been introduced into the legislature by Senator Frederick M. Davenport of Oneida, which will establish in the state department of health a division of maternity, infancy and child hygiene. After many conferences, the legislative leaders have decided not to accept federal aid in maternity care, as provided in the Sheppard-Towner Act. Governor Miller objects to the Sheppard-Towner Act as undue interference in state affairs by the federal government. The proposed bill carries an appropriation of \$100,000 for the establishment of the new division in the state department of health. The bill provides for holding health consultations for mothers and children in rural districts, in cooperation with local health officers and other physicians; for instructing local health nurses in the hygiene of maternity and infancy; for the instruction of mothers by physicians and nurses and through publications, concerning the hygiene of maternity and infancy. There is a clause in the bill which looks toward the prevention of blindness in infancy, and the care and rehabilitation of crippled children not otherwise provided for.

#### New York City

**Fund for Cancer Work.**—The American Society for the Control of Cancer at its annual meeting, February 23, in New York, announced a special gift by the Commonwealth Fund of New York, for establishing a field service throughout the United States and Canada.

**Personal.**—Dr. Horatio Burt Williams, assistant professor of physiology at Columbia University has been appointed Dalton professor of physiology at that university. Dr. Williams is chairman of the National Research Council committee on research methods and technic in physics.

**Postoffice Establishes Dispensary.**—The New York post-office has established a dispensary on the fourth floor of its central office. It is prepared to care for the three thousand men and women who work there and in the various branch postoffices of the city. The dispensary is being conducted with the cooperation of the U. S. Public Health Service, which has placed Col. E. K. Sprague in charge.

#### NORTH CAROLINA

**Physician Sentenced to Insane Asylum.**—It has been reported that Dr. James W. Peacock, Thomasville, has been incarcerated in the criminal insane ward of the state prison for the murder of Police Chief Taylor.

**Physician Freed of Criminal Charge.**—It has been announced that Dr. Leedom Sharp, Beaufort, charged with criminal abortion and practicing medicine without a license, received a verdict of not guilty, February 2, on the abortion charge and entered a plea of nolo contendere as to the charge of practicing medicine without a license. Dr. Sharp cannot practice medicine again in North Carolina and must leave the state within a reasonable length of time. A bond of \$500 was required to carry out this agreement.

**Hospital News.**—It has been announced that the order of B'Nai B'rith will build a tuberculosis sanatorium in Asheville. The new hospital will be primarily for Jews, but gentiles will be received also, if conditions will provide accommodations for them. The B'Nai B'rith has established hospitals in Hot Springs, Denver and Ohio.—Park View Hospital, Rocky Mount, has recently let a contract for fifteen new private rooms and is installing a refrigerating plant and complete laundry equipment costing about \$20,000.—The contract has been awarded for the erection of a hospital at Otech, at a cost of \$350,000.

#### OHIO

**Hospital News.**—A new tuberculosis hospital will be erected at Ashtabula in the near future.—Fire recently destroyed the vacant hospital wards at Camp Sherman over an area of 10 acres.

**Building for Physicians.**—A new five story, steel and concrete building will be constructed at Toledo, at a cost of \$250,000, to contain fifty-five suites for physicians. The entire top floor will be devoted to a downtown emergency hospital.

**Personal.**—Dr. Arch I. Carson, Cincinnati, has been appointed member of the state board of health, to succeed the late Dr. Gustave Zinke.—Dr. John W. Wilce, Ohio football coach, has been appointed member of the Columbus board of health.

**Goiter Clinic.**—Arrangements have been made for the holding of a free goiter clinic in Urbana for persons afflicted with that malady, under the auspices of the Champaign County Medical Society. The clinic will be held March 9, and will be in charge of Dr. Andre Crotti, Columbus. Dr. Whittaker, Columbus, will deliver an address at the meeting.

#### OKLAHOMA

**Hospital News.**—The contract has been awarded for the construction of a city hospital at Cushing, at a cost of \$50,000.

**Personal.**—Dr. Samuel P. Ross has resigned as city health officer of Ada, following six years' service.—Dr. James R. McLaughlin has been appointed superintendent of the Western Oklahoma Tuberculosis Sanatorium, Clinton, which will be opened about March.

**County Medical Meeting.**—At the annual meeting of the Okmulgee County Medical Society, held February 20, under the presidency of Dr. William B. Pigg, the following officers were elected for the ensuing year: president, Dr. Ira W. Robertson; vice president, Dr. Leslie D. Conn, and secretary, Dr. Frank A. Howell.

#### PENNSYLVANIA

**Investigation of Housing Conditions.**—At the meeting of Lycoming County Tuberculosis Society, held February 14, at



Williamsport, a resolution was adopted, recommending that a committee be appointed to investigate the housing conditions of the city, and report its findings to the executive board. Plans of the society for the ensuing year will consist of distribution of health literature, the dissemination of information regarding the care of health through the newspapers, the showing of health moving pictures, promotion of an antituberculous campaign and work for the establishment of a tuberculosis sanatorium.

**Personal.**—Dr. Daniel F. Daley, Kingston, has been appointed medical examiner of the school board, Wilkes-Barre, to succeed Dr. Ira T. Teitsworth, who resigned recently.—Dr. Felix A. Jaworski, McKeesport, has succeeded Dr. James P. Blackburn on the medical staff of the City Hospital.—Dr. Herman A. Gailey, formerly of the Johns Hopkins Hospital, Baltimore, has been appointed a member of the medical staff of the York Hospital.—Dr. Arthur F. P. Huston has accepted a position on the medical staff of the department of charities, Pittsburgh, to succeed Dr. Charles E. Reif, who resigned recently.

**Election of Officers.**—New officers of the following societies have recently been elected: The Armstrong County Medical Society, at the recent annual meeting, elected Dr. Oren C. Campbell, Ford City, president for 1922, and Dr. Jay B. F. Wyant, Kittanning, secretary-treasurer.—Clearfield County Medical Society elected Dr. James A. Miller president, and Dr. John M. Quigley secretary.—The Montgomery County Medical Society elected Dr. George W. Miller president, Dr. Edgar S. Buyers recording and financial secretary, and Dr. John C. Simpson corresponding secretary and reporter.—The Wyoming County Medical Society elected, as president, Dr. Van Cleft Decker, and as secretary-treasurer, Dr. Herbert L. McKown.—The Warren County Medical Society elected, as president, Dr. Willis M. Baker, and, as secretary, Elizabeth S. Beatty.—The Susquehanna County Medical Society elected Dr. Abram E. Snyder, Montrose, president, and Dr. Edward R. Gardner, Montrose, secretary and treasurer.

#### Philadelphia

**Entrance Standard Raised.**—At a meeting of the board of trustees, February 20, it was decided that, beginning in 1923, three years' collegiate preparation will be a prerequisite for admission to the University of Pennsylvania Medical School. The following year, all students will be required either to have a college degree or to have completed three years of collegiate training, with the provision that the bachelor's degree will be given in the first year of medicine. Since the freshman class in medicine at the University of Pennsylvania is limited to 100, and the faculty has a selection from a wide number of candidates, few students will be affected by the new ruling. Nearly all students now attending the medical school have academic degrees.

**Annual Meeting of Philadelphia Charities.**—The Public Charities Association at its annual meeting, February 16, decided to devote the major part of its energies during the coming year to the advancement of children's welfare work throughout the state. The association will cooperate with the state welfare department in this work. Particular attention also is to be given to mental hygiene. Petition will be made at Harrisburg, it was announced, for legislation providing for the construction of more schools in which the mentally handicapped may be trained and treated. Dr. Charles H. Frazier presided at the meeting. It was announced that the expenses of the association last year totaled approximately \$24,394. A large percentage of this amount was spent, declared the secretary, in the service of the state, at the request of the state welfare department. The association is affiliated with the Welfare Federation.

#### SOUTH CAROLINA

**Public Nurse Association.**—The first public meeting of the recently organized Charleston Public Nursing Association, was held January 15, at Charleston, under the presidency of A. T. Symthe. The association will look after the well being of the child from the prenatal stage. Dr. Archibald Johnston Buist addressed the meeting.

**School Health Contests.**—A health contest between the schools of the county was inaugurated, February 6, for prizes of \$50, \$30 and \$20 offered by the chamber of commerce, for the school that shows the greatest improvement in twelve months. Dr. Eugene O. Chimene, Greenville County Health

Commission, gave an address on "What the Community Can Do to Promote Public Health Work."

#### SOUTH DAKOTA

**Personal.**—Dr. Dickey W. Craig, Sioux Falls, has been appointed physician of the state penitentiary, to succeed the late Dr. W. E. Winsett.—Dr. Clarence V. Auld, Plankinton, has been elected president of the Mitchell District Medical Society.—Dr. Finn Koren has resigned as chief of the staff of the Lutheran Hospital, Watertown, and will be succeeded by Dr. Andrew J. Paulson.

#### TENNESSEE

**Personal.**—Dr. Frank B. Bogart, Chattanooga, has been appointed head of the laboratory at Baroness Erlanger Hospital.

**Hospital News.**—A contract has been awarded for the erection of an institution for the feeble-minded at Nashville at a cost of \$210,000.—Contracts have been awarded for the new Jewish Hospital to be built at Memphis at a cost of \$750,000.

**Commission on Medical Education.**—The commission on medical education held its first annual session in the Meharry Auditorium, Nashville, in January, under the auspices of the National Medical Association, an organization of colored physicians, of which Dr. Henry M. Green, Knoxville, is president. More than fifty colleges and universities were represented at the meeting.

#### TEXAS

**New Society Presidents.**—Dr. Walter T. Brown, Wallis, was elected president of the Austin County Medical Society at the recent meeting. Dr. William E. Campbell, Elgin, has been elected president of the Bastrop County Medical Society. Dr. Thaddeus K. Jones, Henrietta, is the newly elected president of the Clay County Medical Society, and Dr. James E. Morris, Madisonville, of the Madison County Medical Society.

**Federal Representatives to Attend Medical Meeting.**—At the meeting of the Texas State Medical Association, to be held in El Paso in May, representatives of the bureaus of entomology, biology survey and plant industry of the U. S. Department of Agriculture will be present and deliver addresses on the ravages of the fly, rodents, predatory animals and insects and their relation to plant and animal life.

#### WASHINGTON

**Personal.**—The mayor has appointed Dr. James A. MacLachlan city health officer of Dayton, to succeed the late Dr. John M. Miller.

**Hospital News.**—The Fairhaven Hotel, Bellingham, built at a cost of \$300,000, has been purchased by a corporation and will be converted into the Yoghurt Sanatorium, Inc. The building is five stories high with 100 rooms and contains the original furniture. Dr. Andrew Jefferson Nelson, Seattle, will be in charge of the institution.—The Anacortes Hospital has been purchased by five physicians of the city and will be managed by them under the name of the Anacortes Physicians, Inc.—The new Normal School Hospital, Cheney, was opened, January 13.—The Kulshan Hospital, Sumas, was completely destroyed by fire in December. A new brick building will be erected in the spring.

#### WISCONSIN

**Banquet for Physician.**—At the Douglas County Medical Association's annual banquet, held February 10, at Superior, under the presidency of Dr. Thomas H. Shastid, Dr. William E. Ground was the guest of honor. The dinner was in celebration of Dr. Ground's sixtieth birthday and the completion of thirty years' of practice in Superior. Members of the association presented Dr. Ground with a ruby platinum stick pin. Dr. Patrick G. McGill was toastmaster.

#### CANADA

**Hospital News.**—Dr. John Christie has resigned as superintendent of the Ocean Falls Hospital, B. C., and will be succeeded by Dr. Bennett, Vancouver.

**Skeletons for Hospital.**—Thirty-three skeletons of Eskimos, from the Mackenzie River area, have been sent to Dalhousie University, Halifax, N. S., where they will be measured and



studied for the exact ethnological status of Eskimos for the Canadian government, by Dr. John Cameron. The skeletons were collected by the Arctic exploration expedition sent out by the government, which has spent five years studying the habits, language and characteristics of the Eskimo tribes.

#### GENERAL

**National Academy of Sciences.**—The annual meeting of the society will be held at the United States National Museum, Washington, D. C., April 24-26.

**Tri-State Medical Meeting.**—The twenty-fourth annual session of the Tri-State Medical Association of the Carolinas and Virginia was held, February 22-23, at Norfolk, Va., under the presidency of Dr. William W. Fennell, Rock Hill, S. C.

**Eugenics Research Association.**—The annual meeting of the association will be held, June 10, at Cold Spring Harbor, Long Island, N. Y., under the presidency of Dr. Lewellys F. Barker, Baltimore, who will deliver an address on the subject of "Heredity and the Endocrine Glands."

**Sir Thomas Lewis to Deliver Noble Wiley Jones Lectures.**—Sir Thomas Lewis, an English authority on the heart, author of "The Mechanism and Graphic Registration of Heart Beat" and several other books on the subject, will this year deliver the Noble Wiley Jones Lectures under the auspices of the Medical School of the University of Oregon. The dates will be May 15 to 19, inclusive. The first and second lectures will deal with "Auricular Fibrillation," the third and fourth with "Quinidin," and the fifth lecture will be on the subject of "Digitalis."

**Archives of Occupational Therapy.**—This periodical, the first number of which has just appeared, is intended to serve as a medium of publication for papers on occupational therapy. It is the official organ of the American Occupational Therapy Association, and will publish proceedings. Book reviews, abstracts and a general bibliography of occupational therapy complete the contents. The journal is edited by Dr. William R. Dunton and an editorial board. The periodical will be issued bimonthly, one volume per year, 500 pages constituting a volume.

**Tuberculosis Schools for Physicians.**—It has been announced that tuberculosis schools for medical officers in soldiers' hospitals and examining stations, which were established more than a year ago, by the U. S. Public Health Service, have trained several hundred service physicians, who have qualified in making special examinations of the chest and in reporting thereon with accuracy satisfactory to requirements of the rating board of the Veterans' Bureau. In this way, traveling expenses and the inconvenience and hazard to tuberculous veterans in going long distances to chest specialists has more than balanced the cost of the tuition.

**Favorable Report on Anthrax Prevention Measure.**—The House committee on interstate and foreign commerce has made a favorable report to the House recommending the passage of the bill now before congress, preventing the transportation in interstate commerce of shaving brushes containing horsehair. The bill also prohibits the importation into this country of such articles. The design of the measure, introduced more than two years ago at the suggestion of the U. S. Public Health Service, is to prevent the spread of anthrax through contaminated shaving brushes. The House is expected to take a vote on the measure in the near future.

**Personal.**—It has been announced by the secretary of the Rockefeller Foundation that Prof. Vernon Lyman Kellogg, zoologist, secretary of the National Research Council, Washington, D. C., and John W. Davis, attorney, New York City, formerly ambassador to Great Britain, have been elected trustees of the Rockefeller Foundation. Professor Kellogg served for many years as professor of entomology at the University of Kansas, Kansas City, Mo., and at Leland Stanford Junior University, San Francisco. During the war he was associated with Mr. Hoover in relief work in Belgium and later in the general child feeding program in central Europe.

**Influenza in the United States.**—A comparison of the number of cases of influenza reported for the first six weeks of 1922 with the number reported for a similar period during 1921 and 1920 shows that there is a greater amount of influenza this year than last year, but the present situation is not at all comparable to what conditions were in the great epidemic of 1919-1920. For the first six weeks of 1922,

there were reported, in twenty-four states, 28,075 cases; for 1921, in twenty-two states, there were 4,143 cases, and for 1920, in twenty-three states, 477,289 cases. The figures as to the individual states are published in *Public Health Reports* for February 17.

**Appropriation to Enforce Sheppard-Towner Act.**—In the appropriation bill of the Department of Commerce for the coming fiscal year \$1,240,000 has been included, to be used for the promotion of the welfare and hygiene of maternity and infancy. This sum is to cover the provisions and carry out the purposes of the maternity bill that passed the last session of Congress. The money is to be dispensed by the chief of the Children's Bureau. The Department of Commerce appropriation measure also carried appropriations for the operation of the Children's Bureau and the Women's Bureau, as well as substantial sums for the repair and remodeling of the immigration station at Ellis Island, N. Y.

**Information on Maternal Welfare.**—A joint committee of the American Gynecological Society and the American Child Hygiene Association, appointed to consider problems on maternal welfare, has issued a report as to what the committee's functions will include. In the main they concern the elaboration of a complete scheme of maternal welfare with such departments as preservation of life and health of the mother; increase in the number of fruitful pregnancies; better facilities for the care of the unmarried mother; definition of the relationship of such work to other health and welfare activities; establishment of agencies of well qualified men to advise with governmental agencies, and particularly more intimate cooperation with pediatricians. The committee is anxious to hear from physicians along these lines, and those who wish copies of the report may secure them by writing to the chairman, Dr. F. L. Adair, 730 LaSalle Building, Minneapolis, Minn.

#### LATIN AMERICA

**Memorial to Dr. Elisha Kent Kane.**—A memorial was unveiled, February 16, at Havana, to Dr. Elisha Kent Kane, Arctic explorer, who died there seventy-five years ago.

**Change of Editor.**—Admiral Dr. Calmon Bulcão has ceased to be one of the editors of the *Revista de Medicina e Higiene Militar*, of Rio de Janeiro, because of his retirement from active duty. Rear Admiral Dr. Flavio de Souza Mendes, of the Medical Corps of the Brazilian navy, has taken his place.

**Personal.**—Dr. A. Benchetrit, of Venezuela, has been in Hawaii studying the use of chaulmoogra oil in the treatment of leprosy.—Dr. J. F. Recalde has been appointed by the Paraguayan government to take the two months' course in malaria and hookworm disease at the Public Health Institute established by the Rockefeller Institute in S. Paulo, Brazil.—Dr. F. Rojas, of Ecuador, has come to New York to take a position in the bacteriologic laboratories of the Rockefeller Foundation.

#### FOREIGN

**French Medical Congress.**—The French Congress on Internal Medicine meets this year at Paris in October.

**Gift to University.**—It is announced from Brussels that a legacy of \$100,000 has been donated to Louvain University, Belgium, for the erection of a special building for cancer research.

**Red Cross Publications.**—The *Elements of Hygiene* and *Combattes et évitez la tuberculose* will be translated into Bulgarian by the Bulgarian Red Cross, and will contain illustrations.

**Belgian Red Cross.**—The Belgian Red Cross has recently donated 50,000 Belgian francs to the League of Red Cross Societies for relief work in Russia, under Dr. Nansen, to be used for the purchase of rye.

**Honor for Madame Curie.**—Madame Marie Sklodowski Curie was elected a member of the French Academy of Medicine, February 7. By her election Madame Curie becomes the first woman academician.

**Silvanus Thompson Memorial Lecture.**—At a special meeting of the Roentgen Ray Society, to be held, March 21, in London, the fifth Silvanus Thompson Memorial Lecture will be delivered by Sir Oliver J. Lodge, F.R.S.

**History of Medicine in Belgium.**—The Royal Society of Archeology of Brussels organized a section of the history of medicine at a recent meeting of the society. Dr. Mélis was



elected president, and Dr. Muls, Brussels, secretary, of the Association.

**Medical Society of London.**—Dr. Henri Hartmann, professor of clinical surgery and surgeon to the Hotel Dieu Hospital, Paris, gave an address on inflammatory strictures of the rectum, at a recent meeting of the society. The lecture was in English and the discussion in French.

**Italian Prize Goes to Holland.**—It is announced from Bologna that the Umberto I prize offered by the Rizzoli Orthopedic Institute has been awarded to Dr. Murk Jansen of Leyden for the works he offered in competition. The committee of awards consisted of Professors Novaro, Dalla Vedova and V. Putti.

**Ophthalmological Society of the United Kingdom.**—The annual congress of the society will be held, May 11-13, in London, when the Edward Nettleship prize will be presented. Dr. T. M. Legge, medical inspector of factories, will discuss industrial diseases of the eye, miners' nystagmus and glass-blowers' cataract.

**An International Medical Congress.**—Professor Henschen of Sweden is calling on the profession in Sweden to organize a truly international medical congress to be held at Stockholm, as a neutral meeting place for all nations. The preparatory organization is already under way, the *Deutsche medizinische Wochenschrift* is informed.

**Investigation of Protozoological Diseases.**—Prof. J. Gordon Thompson, lecturer at the London School of Tropical Medicine, London, England, sailed, January 5, to Rhodesia, for a six months' investigation of protozoological diseases, at the invitation of British South Africa. He will give special attention to the etiology of blackwater fever.

**Red Cross in Poland.**—It has been announced that a section of the Polish Red Cross has been organized in the republic created by the Soviet between Lake Baikal and the Pacific Ocean, which, under great difficulties, is accomplishing useful work among the 40,000 Poles in Siberia, Manchuria and Mongolia. A Pasteur institute has also been created under the supervision of the Polish Red Cross.

**Tribute to the Pioneers in Antitoxic Serum Treatment.**—The conference on international serum standards, held at London in December, with Professor Madsen of the State Serum Institute at Copenhagen in the chair, sent a telegram of greeting to Roux at Paris and to Kitasato at Tokyo, and also to the widow of E. von Behring at Marburg, and to the widow of Ehrlich at Frankfurt, as a tribute to their deceased husbands.

**Italian Congress of Medical Radiology.**—The fourth congress of the Società Italiana di Radiologia Medica will be held in Bologna, May 9-11, at the Orthopedic Institute Rizzoli, under the presidency of Prof. Aristide Busi. In connection with the congress, an exhibition of radiologic apparatus will be held. For further information in regard to the congress, apply to Dr. Alberto Possati, secretary, Villa Verde, Bologna, Italy.

**Compulsory Insurance Against Sickness in Germany.**—The *Deutsche medizinische Wochenschrift* relates that 720 local social insurance societies have now a fund of 503 millions of marks. In 1914 one group of 2,783 local societies of this kind and another group of 9,854 societies paid, respectively, 19.2 and 20.6 per cent. for medical aid, out of their total expenditures. In the 720 groups first mentioned, last year only 11 per cent. of their total expenditures was paid to physicians.

**Personal.**—The Finland Medical Association has elected Prof. T. Axenfeld of Freiburg an honorary member.—The Rinecker prize, a medal and 1,000 marks, has been awarded by the University of Würzburg to Dr. F. Hofmeister, professor emeritus for physiologic chemistry at that institution.—A memorial tablet has been placed on the wall of the house occupied 1866-1869 by Konrad Roentgen, while a student at Zurich. The initiative in the matter was taken by the Swiss Roentgen Society.

**Appropriation for Further Study of Friedmann's Remedy for Tuberculosis.**—The budget of the ministry for science, etc., in Germany contains an item of 800,000 marks for research on the Friedmann remedy. The *Deutsche medizinische Wochenschrift* protested against setting aside such a comparatively large sum for the committee's work in this line. The Prussian landtag decided the same, and the terms of the appropriation were changed to read for research on

tuberculosis. Lubarsch is the chairman of the committee appointed to study the Friedmann remedy.

**Octocentenary of Hospital.**—Preliminary plans for the celebration of the eight-hundredth anniversary of the founding of St. Bartholomew's Hospital, London, England, have been started. The hospital was founded on its present site by Rahere, in 1123, and received its first charter from King Henry I of England. The Prince of Wales is president of the hospital, and will attend the celebration. All universities are invited to send representatives. The lord mayor of London is chairman of the committee.

**Antivenereal Disease Consulting Dispensaries.**—A Berlin exchange relates that there were 164 of these *beratungsstellen* in 1920, and there were 184,551 consultations given, an increase of 80 per cent. over the previous year. Of the 86,456 applicants in 1920, 29,116 of the 54,547 men had syphilis, and 1,533 had both syphilis and gonorrhea. Of the 30,256 women, 19,364 had syphilis, and 1,196 both syphilis and gonorrhea. Of the 1,633 children, 1,067 had syphilis and 5 both syphilis and gonorrhea, 496 gonorrhea alone. The total expense was 1,110,721 marks in 1919 and 2,880,831 in 1921.

**Medical Research Council.**—It has been announced by the medical research council of England that its total resources have been reduced and that it must omit the prosecution of researches which would have indubitable scientific value toward the advancement of preventive or curative medicine. The medical research council, in cooperation with the ministry of health, the board of health for Scotland and the ministry of health for Ireland, was formed for the investigation of tuberculosis, nutritional diseases, food poisoning and dental decay, and the treatment of venereal disease, or rheumatism and allied diseases, and of mental disorders.

**The Quakers' Relief for German Children to Be Suspended.**—The *Deutsche medizinische Wochenschrift* states that after two years of its indefatigable and blessed work to aid the children of Germany, the Friends Relief organization is giving up this task in Germany, to concentrate its efforts elsewhere. Our exchange adds that the work is to be continued, on the same scale, by other foreign relief organizations. About 600,000 children and mothers are being given this supplementary food daily, and the continuance of this to July is already guaranteed. The expense is being borne entirely now by the German-Americans who founded the so-called Three Million Dollar Fund.

**Appeal for Assistance for Professional Men and Women of Vienna.**—Information recently received from Vienna by the Friends Relief Mission indicates that the winter has been severe and that assistance is badly needed by the professional men and women of Austria. Gifts of clothing are particularly desired, as this is the most pressing general requirement. Most of these people are still receiving money which will provide a minimum amount of food for the family but leaves nothing to spend on clothing. Clothing for the summer, particularly underclothing, is a great necessity. Those desiring to contribute may send material to the American Friends' Service Committee, 20 South Twelfth Street, Philadelphia.

**Industrial Accident Congress.**—Our Spanish exchanges state that the First Medical Congress on Accidents to Workmen recently closed its sessions at Zaragoza. The minister of labor and the rector of the university presided, and among the resolutions adopted were some to the effect that hernia should be regarded as entitling to two months' wages or an operation at the expense of the employer; that the workman should be given the choice between a needed operation and the loss of his indemnity; also that diseases contracted in the hospital as a complication of the accident or contagion entitle to compensation, as likewise death from the operation. Strict measures against malingering, and vocational training for the disabled were also advocated.

#### Deaths in Other Countries

Dr. E. Rosenbaum of Frankfurt on the Main.—Dr. J. Boas of Berlin, aged 90.—Dr. E. Paixão of Petropolis, Brazil.—Dr. Adolfo Mujica of Buenos Aires, member of the Argentine senate and appointed minister of agriculture in 1911, after his resignation from the chair of botany in the school of pharmacy of the University of Buenos Aires.—The *Crónica Médico-Quirúrgica* of Havana reports the deaths of Dr. Ramon Blanco Castañeda and Dr. J. Fernández Llebrez of Havana, and of Dr. J. de la C. Comoglio and Dr. Lucas La Guardia.



## Government Services

### Veterans' Bureau Takes Over Health Service Dispensaries

The U. S. Veterans' Bureau this week formally took possession of the U. S. Public Health Service dispensaries and outpatient facilities in twenty-nine cities throughout the country. Both the medical service and the medical staff of the U. S. Veterans' Bureau have been increased as a result of this action. In addition to the relinquishment of the dispensaries by the U. S. Public Health Service, equipment and personnel will also be transferred.

### Reports of the Surgeon Generals

Following the gradual reduction of war activities, including demobilization of troops, the work of the offices of the surgeon generals of various public services has been gradually returning to normal status.

#### SURGEON GENERAL OF THE ARMY

The report of the Surgeon General of the Army analyzes the personnel of the department and explains its relation with the newly formed Veterans' Bureau. Special attention is called to the poor quality of recruits now being examined

made in rural sanitation. A large section of the report deals with the relation of the U. S. Public Health Service to the War Risk Insurance Bureau and the Veterans' Bureau. The surgeon general points out that every effort should be made during the coming year to abandon as rapidly as possible unsatisfactory hospitals, to improve existing plants and as far as possible to consolidate hospitals now operated by the service. He reiterates his belief that the U. S. Public Health Service has met the emergency in the care of veterans of the World War in as "efficient manner as it was humanly possible under the circumstances to do."

### Legislation Governing Pay of Army, Navy and Public Health Service Officers

The Joint Congressional Committee that has been at work for several weeks drafting the bill to readjust the pay of officers in the army, the navy and the Public Health Service has agreed on the terms of this legislation. In drafting the bill, the committee considered the questions involved from three essential fundamental points: (1) a plan on which pay would be given according to rank and length of service; (2) the effect on living conditions of the individual officer with respect to rank and length of service; (3) the effect on the army, the navy and the Public Health Service during the next fifteen and thirty years.

#### GRADUATED SCALE OF ALLOWANCE

Surgeons in U. S. Public Health Service, Twenty Years' Service  
Committee Plan

Present Compensation	1922 Cost of Living	1914 Cost of Living, Standard	1908 Pay
\$3,000 Base pay	\$3,000 Base pay	\$3,000 Base pay	\$3,000 Base pay
1,000 Longevity pay	900 Longevity pay	900 Longevity pay	1,000 Longevity pay
840 Bonus act of May 5, 1920	657 Subsistence	398 Subsistence	976 Commutation
976 Commutation	1,200 Quarters	708 Quarters	
\$5,816 Total	\$5,757 Total	\$5,006 Total	\$4,976 Total
Passed Assistant Surgeons, Ten Years' Service			
\$2,400 Base pay	\$2,400 Base pay	\$2,400 Base pay	\$2,400 Base pay
480 Longevity pay	360 Longevity pay	360 Longevity pay	480 Longevity pay
720 Bonus act of May 5, 1920	438 Subsistence	265 Subsistence	801 Commutation
801 Commutation	960 Quarters	567 Quarters	
\$4,401 Total	\$4,158 Total	\$3,592 Total	\$3,681 Total
Passed Assistant Surgeons, Six Years' Service			
\$2,400 Base pay	\$2,400 Base pay	\$2,400 Base pay	\$2,400 Base pay
240 Longevity pay	240 Longevity pay	240 Longevity pay	240 Longevity pay
720 Bonus act of May 5, 1920	438 Subsistence	265 Subsistence	801 Commutation
801 Commutation	960 Quarters	567 Quarters	
\$4,161 Total	\$4,038 Total	\$3,472 Total	\$3,441 Total
Assistant Surgeon			
\$2,000 Base pay	\$2,000 Base pay	\$2,000 Base pay	\$2,000 Base pay
600 Longevity pay	438 Subsistence	265 Subsistence	624 Subsistence
624 Commutation	720 Quarters	425 Quarters	
\$3,224 Total	\$3,158 Total	\$2,690 Total	\$2,624 Total

for military service, especially the enlistment of many men of immature age. Some of the particularly notable features discussed under health of the army are the slight reappearance of epidemic influenza and a pronounced epidemic of dengue among white troops in the Philippines. Rates for venereal disease are tending to show marked decrease.

#### SURGEON GENERAL OF THE NAVY

The Navy Department has adopted a policy of retrenchment, but cooperation with the Veterans' Bureau has required that hospital establishments continue to be maintained almost up to wartime status. Attention is called to the fact that the navy has had difficulty in securing acquisitions to the commissioned personnel. Special efforts are now being made to supply educational advantages for medical officers. In general, the work is tending to return to the routine which existed previous to the war.

#### SURGEON GENERAL OF UNITED STATES PUBLIC HEALTH SERVICE

The outstanding feature of the work of the last year has been the improving of national and interstate quarantine measures. No serious epidemic has been introduced into the United States during the year. Special efforts have been

A brief analysis of the provisions for service pay appeared in this department, February 11.

An important provision of the bill is Section 5, which provides for a graduated scale of allowance for subsistence based on the cost of food and subsistence in the calendar year 1922 from statistical estimates furnished to the President by the Secretary of Labor. If the cost of food and subsistence in subsequent years should be reduced, the allowance for subsistence will be accordingly reduced by the terms of the bill. The application of this arrangement is shown in the accompanying table, which applies particularly to surgeons in the Public Health Service. The table shows comparatively the present compensation, the committee plan on the cost of subsistence for 1922 and 1914, and the service pay for the year 1908.

This proposed legislation has the approval of medical officers in the army, navy and Public Health Service. Those who have had long experience in the difficult problem of adjusting pay schedules are enthusiastic in their praise of the bill. Senator Wadsworth, chairman of the Joint Committee which drafted the measure, states that "it is the most scientifically drawn pay bill that the government ever has had." The measure will soon be reported to the Senate and House for final disposition.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Feb. 6, 1922.

#### The Influenza Epidemic

The influenza epidemic is on the decline. In London the deaths from the disease, which reached 551 in the week ending January 14, fell, in the weeks ending January 21 and 28, respectively, to 443 and 320. In 105 great towns of England, the decline has not yet begun, the figures for the three weeks mentioned being 1,262, 1,433 and 1,450. As far back as the beginning of November, a sharp rise in the mortality ascribed to heart disease and to bronchitis and bronchopneumonia occurred. At that time, the number of deaths ascribed to influenza was not abnormal for the time of year. About the middle of November, it showed a slight rise, but not until the last week of the year was the increase marked. It is, therefore, suggested that, at the beginning of November, influenza began to be prevalent in a mild form which was sufficient to kill only people with damaged hearts or bronchial trouble.

#### The Causation of Rickets

A report just issued by the Medical Research Committee on experimental rickets should serve as a warning against relying too much on experimental investigations of the problems of human disease. In 1919, the committee published a report on accessory food factors (vitamins), which definitely placed rickets among the deficiency diseases. This report was based largely on the experimental work of Dr. E. Mellanby on puppies. He concluded that rickets produced in them was due to lack in their food of an antirachitic factor which had a similar distribution to fat soluble A and was possibly identical with it. The present report gives the result of five years' research by Dr. Mellanby, who now confesses that a wider view must be taken of the causation. Recent investigations of deficiency diseases, such as beriberi and scurvy, appear to show that they are very limited in their etiology; but this does not hold for rickets. Indeed, Dr. Mellanby suggests that knowledge of the two former diseases would be greatly increased if other elements in the diet and the mode of life were investigated as well as the respective vitamins. Dr. Mellanby found that many of the food elements exert a potent influence on bone calcification and on growth, and that there is a great interplay among these substances. So close is the interrelation among dietetic elements that a condition which appears of prime importance at one time may sink into relative insignificance at another. He found that the following factors tend to prevent rickets in puppies: (1) plenty of calcium and phosphorus in the diet; (2) something associated with certain fats, probably identical with the fat soluble vitamin; (3) meat; (4) exercise. The following factors tend to produce rickets: (1) a deficiency of calcium and phosphorus in the diet; (2) a deficiency of fat containing the antirachitic vitamin; (3) excess of bread, other cereals or carbohydrates; (4) absence of meat; (5) excess of the protein moiety of caseinogen free from phosphorus calcium; (6) confinement. Of these conditions, probably the most common cause of rickets in children is a combination of relatively deficient antirachitic vitamin and an excessive amount of bread. In late or adolescent rickets, probably deficient calcium in the diet is also causative and possibly is the most important factor. Because of the interdependence of these dietetic factors, it is impossible to say what is the absolute amount of each necessary to produce the maximum result. It is a question of balance, and the greater the number of substances having

an antirachitic effect that are eaten, the less important are the remaining factors for the production of perfect bones. The most interesting of the actions is the calcification influence exerted by the antirachitic vitamin, which can be emphasized or antagonized by other conditions. If the diet contains a sufficiency of calcium and phosphorus, the presence of meat and the possibility of exercise makes a small amount of the antirachitic vitamin very effective. On the other hand, an excess of bread causing the animal to put on weight rapidly, combined with confinement or some special condition, such as altering the caseinogen-calcium balance, makes the antirachitic vitamin less effective. The aiding of and detracting from effectiveness by other dietetic constituents apply not only to the antirachitic vitamin, but also to other elements of diet, so that the so-called law of the minimum is inadequate to explain the problems of nutrition. The minimum of each substance for growth and perfect health varies with the amounts and kinds of other food elements eaten. The rôle of sunlight in the prevention of rickets, which was recently presented in *THE JOURNAL* (Jan. 21, 1922, p. 159), is not mentioned by Mellanby in this otherwise exhaustive investigation.

#### A Reward for the Discovery of a Cure for Cancer

Two wealthy men have each offered a large sum for the discovery of a cure for cancer, and this has led to correspondence on the subject in the lay press by prominent physicians. Sir William Herringham considers that the donors are actuated by the best motives, but that a safer offer was never made. Even if a cancer disappeared within the limit of time given, no one could say that it would not recur. Moreover, such offers are not the best means of stimulating discovery. Discoveries of this kind are hardly ever made by "direct frontal attack," but come, as it were, by chance, during methodical investigation into the nature of disease. Cancer has been one of the chief objects of pathologic research all over the world, as long as Sir William can remember, and \$10,000 or \$50,000 will not make pathologists work harder or give them more incentive. Discovery should be rewarded, though the just settlement of different claims must be difficult. Nearly always, the final discovery results from a large amount of work by different men. The sounder way to help discovery would be to assist the institutions already at work to carry out the expensive investigations which are nearly always hampered by lack of funds.

Sir Ronald Ross, on the other hand, supports the principle of such prizes. He points out that many subsidized laboratories and investigations have been in existence for many years. Though the work done has undoubtedly been good, the fact remains that numbers continue to die from cancer. After all, the men engaged in these researches are few compared to the 30,000 physicians of the country, many of whom could possibly join in the work. They do not, because they know that even if successful in making the most important discoveries, they will never receive any return for their labor and expenditure of time. Such prizes would bring a large number of volunteers who now cannot afford to do anything.

#### Compulsory Medical Examination of Schoolchildren

A point of considerable legal interest has just been settled. A father was fined for failing to comply with an order for the attendance of his daughter, aged 12 years, at an elementary school. On two occasions, presumably on the instruction of her father, she refused to submit to examination under an act which provides for medical inspection of the clothing and persons of children attending school and their cleansing if found verminous. The child was reported for insubordination and was expelled from the school. The father continued to send the girl to school, but she was



refused admittance. He was then summoned and convicted of noncompliance with the law which requires the attendance of children at school. An appeal was made to a higher court. The judges confirmed the conviction, ruling that a parent who sent his child to a school in circumstances in which he knew she would be refused admission had not caused the child to attend.

The Lowest Death Rate on Record

Provisional figures for the vital statistics of 1921 have just been issued. The death rate in England and Wales is the lowest on record and the infant mortality the lowest, except that of 1920. The birth rate is also the lowest recorded except that of the war years, 1915-1919.

FIGURES FOR 1921

	Birth Rate	Death Rate (Crude)	Deaths Under 1 Year per Thousand Births
England and Wales.....	22.4	12.1	83
Ninety-six great towns, including London* .....	23.5	12.3	87
One hundred and forty-eight smaller towns† .....	22.7	11.3	84
London .....	22.8	12.4	79

\* Populations over 50,000 at the 1911 census.  
† Populations from 20,000 to 50,000 at the 1911 census.

The death rate for England and Wales relates to the whole population, but that for London and the groups of towns to the civilian population only.

FIGURES FOR OTHER YEARS

	1871-1880	1911-1915	1917	1918	1919	1920	1921
Birth Rate:							
England and Wales	35.4	23.6	17.8	17.7	18.5	25.4	22.4
London.....	....	....	....	16.0	18.2	26.4	22.8
Death Rate:							
England and Wales	21.4	14.3	14.4*	17.6*	13.8*	12.4	12.1
London.....	....	....	15.7*	14.6*	13.6*	12.6	12.4
Infant Death Rate:							
England and Wales	149	110	96	97	89	80	83
London.....	....	108	104	108	85	76	79

\* Civilians only.

The low birth rate during the war was due, of course, to the conditions then prevalent. In 1919, however, the year of booming trade and returning soldiers, the number of marriages increased greatly, with the result that in 1920 the birth rate jumped to 25.4. It has now fallen to what may be regarded as a more normal figure—22.4. The rise in the death rate in 1918 was due to the influenza epidemic.

Lister's Ward to Be Demolished

The proposal of the managers of the Glasgow Royal Infirmary to demolish the little ward in which Lister discovered the use of antiseptics is the subject of strong criticism by Dr. Kennedy, professor of surgery at Glasgow University. He has seen letters from outstanding surgeons from all parts of the world, urging the retention of this building. It is the chief asset which makes the Royal Infirmary an object of extreme interest all the world over. Quite apart from its associations with the revolution of surgery, an appeal might be made to the purely commercial instincts, that, if the ward were established as a museum for Lister relics, it would bring to the Infirmary, from all parts of the world strangers who never would dream of visiting it for any other purpose. Meanwhile, the Lister Memorial Committee, its request for retaining the ward having been rejected, has decided not to follow the suggestion put forward by the Royal Infirmary that a statue or other ornamental memorial be placed in the grounds of the Royal Infirmary. The only reason why the memorial should be in the Royal Infirmary is that the actual ward is there, and if the ward is not to be used, then there is no purpose in selecting this site for the memorial. It has been decided to spend the money on the erection of a seated statue of Lister close to

that of his friend Lord Kelvin, the great scientist, in the Kelvingrove Park, in front of the university of which he was such an ornament. Professor Kennedy hopes, however, that wiser councils will prevail and that the Royal Infirmary managers will not throw away such a valuable asset as the Lister ward, and expose themselves to world-wide contempt for having committed an unparalleled act of vandalism.

PARIS

(From Our Regular Correspondent) Feb. 3, 1922.

A Corporative Federation of the Physicians of the Paris Region

The Fédération corporative des médecins de la région parisienne has just been established. The purpose of the federation is to create a bond of union between the various medical societies in the Paris region, with a view to consecrating the great moral force that it will derive from its mere establishment to the solution of the problems of public health and to the defense of the honor and interests of the medical profession in this region—or even of one of its members, if a question of general interest is at stake. The federation also proposes to take an interest in general questions affecting the medical profession, and, in order to render aid when and where needed, will endeavor to reach a definite understanding with the various medical societies in regard to the problems that are constantly arising. The medical societies affiliated with the federation will, however, preserve their complete autonomy and their absolute independence. In no case will the federation replace them, nor will it endeavor to impose on any society the decision of a majority; it leaves them perfect freedom of action as regards their goal and their particular interests.

If the idea of the federation had been carried out in the full spirit of the founders, it would have comprised all the physicians of Paris, not only the members of the various professional groups but also the so-called "independent" physicians, who hold themselves aloof from all medical affiliations. But, after a rather lively debate, which took place at a meeting of the committee that was appointed to draw up the constitution and by-laws, it was decided that, viewing the question as a whole, there was not much use in trying to attract the "independents," and that it was reasonable to suppose that, if they did not take the trouble to affiliate themselves with any of the professional groups, they would not be any more likely to interest themselves in the questions with which the federation would deal. Then, too, the Syndicat médical du département de la Seine raised serious objections to allowing the "independents" to become members of the federation, holding that it would seriously affect the recruiting of members to fill the ranks of the syndicates. So it was finally decided that the independent physicians should not be admitted to the federation but that the membership should be composed solely of delegates appointed by the various medical societies or professional groups, some of the most important of which are: the association of professors and associate professors of the Faculté de médecine; the corporative associations of the physicians, the surgeons, the obstetricians and the specialists of the hospitals of Paris; the various local medical societies of the arrondissements of Paris, and the Syndicat médical du département de la Seine. The various associations of medical students are also admitted to membership, but students are not entitled to vote, though they may take part in deliberations. The medical societies pay an annual assessment to the federation, the amount of which is fixed each year by the general assembly. For the first year, every member of a medical society who becomes a member of the federation will pay as annual dues the sum of 50 centimes and every association of students 20 francs.



### Prizes of the Academy of Medicine

As is well known, the Academy of Medicine has in its hands the awarding of numerous prizes, the conditions for the bestowal of which have been, for the most part, established by their founders and are at times rather difficult to fulfil. For example, the F.-J. Audiffred prize, which consists of 24,000 francs of income, was, according to the stipulations of the donor, to be bestowed on the person, without distinction as to nationality or profession, who, within a period of twenty-five years beginning with April 2, 1896, should have discovered a therapeutic or prophylactic remedy recognized as efficacious and sovereign in tuberculosis. The more modest prize of Baron Barbier (2,500 francs) will be awarded to the discoverer of effectual therapeutic remedies for the diseases that are recognized at the present time as most frequently incurable, such as hydrophobia, cancer, epilepsy, scrofula, typhoid, cholera, etc.

The academy holds the view, which seems justified, that, at the present time, it is very desirable and important to encourage scientific research by giving investigators material aid. It also urges persons who are contemplating establishing prizes to devote such gifts preferably to the creation of a foundation, which would bear their name, the purpose of which would be to facilitate research either along the line of a definite subject or in the field of medical science in general.

### Physicians Prohibited from Selling Morphin

Dr. Labat de Lambert has been summoned before the court of correction, charged with having dispensed several ampules of morphin to certain of his patients during the course of disintoxication treatment. In spite of his protest that he acted in good faith, a fine of 500 francs was imposed. This is the first instance in which this particular phase of the application of the law controlling the dispensing of narcotics has been brought before the courts.

### The Cleansing of Glassware in Restaurants

Dr. E. Briau recently presented to the Société de médecine publique an interesting communication on the cleansing of glassware in restaurants and other places where beverages are dispensed. What makes the problem rather difficult to solve is the practical impossibility of using hot water in cleansing glassware owing to the excessive loss from breakage, which with the increased cost of glass is an even greater factor than formerly; and the result has been that the demands of hygiene have been frequently disregarded for fear of undue expense arising from replacing broken glasses, etc. For similar reasons of economy, only a limited number of glasses, such as will barely suffice to serve the patronage, are put into use at one time. In certain establishments that are patronized by large numbers of people, it may happen that the same receptacle will serve as many as fifty or sixty persons during the course of the day or the evening. Under such circumstances, the only mode of cleansing commonly employed is rinsing in ordinary water. As regards beer glasses, they are not dried after being rinsed, for in order that the beer in the glass may present a good appearance it must be served in a moist glass or other receptacle. The fact that large beer glasses usually have a handle causes all right-handed persons to put their lips on precisely the same spot, and, since beer is more of a culture medium than it is an antiseptic, there is nothing to prevent the introduction of "free trade in germs" among the patrons of the establishment, whereby the mucous membranes of the mouth, pharynx and intestine may become infected. Dr. Briau became convinced by his investigations that the summary fashion in which glasses are rinsed in cold water is often of such character as to increase rather than diminish the chances of contagion. He proposes, therefore, that restaurants and other dis-

pensers of beverages be required to cleanse their glassware in two separate waters, the first to consist, in place of tepid water, of a strong solution of hydrochloric acid, which, without injuring the glassware, would destroy rapidly all the organic micro-organisms by which it might be contaminated. (The person in charge of this work should, of course, wear rubber gloves.) After being taken from the hydrochloric acid solution, the glassware should be thoroughly rinsed in running water in order that all traces of the acid may be removed. Unfortunately, there is, at the present time, no branch of the public service in France to which the carrying out of such regulations can be entrusted. The premises of restaurants are never inspected, and if occasionally they receive visits from labor inspectors, the latter are concerned only with the application of the eight-hour day to all employees. Dr. Briau proposes to the Société de médecine publique that all restaurants, cafés, etc., that are willing to carry out these regulations be given a special placard or emblem of some sort to indicate to the public that a given establishment complies with the regulations proposed and that its glassware is, therefore, clean and safe to use.

### Election of Madame Curie to the Academy of Medicine

At a meeting held February 7, the Academy of Medicine elected Madame Curie a "*membre libre*" in place of Prof. Edmond Perrier, deceased. There were sixty-four votes cast for Madame Curie out of a total of eighty. Fifteen ballots were turned in unmarked, which testifies to the tenacious resistance which certain members display toward the admission of women to the academy. It is, in fact, quite significant that Madame Curie is the first woman whom France has had the privilege of honoring as an academician.

### Death of Dr. Ambroise Monprofit

Dr. Ambroise Monprofit, professor of clinical surgery in the School of Medicine of Angers and surgeon to the hospitals of that city, also deputy of the department of Maine-et-Loire, died recently at the age of 65. He was the author of several works, chief among which are those on gastric surgery, gastro-enterostomy and surgical treatment of cirrhosis of the liver. After having served as deputy from 1910 to 1914, he was reelected to the same office in 1919.

## BELGIUM

(From Our Regular Correspondent)

Feb. 9, 1922.

### The Medical Congress in Brussels

To the entirely new undertaking that was launched by the *Bruelles médical* I have already made reference in this column. It was the purpose of the promoters of the enterprise to organize a congress of medicine, surgery and the various specialties, which should present an entirely different character from that which we have been accustomed to see in scientific meetings of this kind. The ideal that the organizers kept before them was a practical one, the idea being to banish all theoretical discussions and long presentations which consume so much time and which interest only a few who are already familiar with the subject. On the other hand, the plan was to show as much as possible and to permit those attending the congress to see as much as possible. The organizers carried out their plan in excellent fashion, and special thanks are due Dr. Beckers, who perhaps took on himself the heaviest part of the work.

The "*journées médicales*" recently held at Brussels were indeed the most conspicuous event in the medical life of Belgium during the recent months. They brought together more than 700 physicians, drawn from all parts of the country, which is certainly no inconsiderable number when it is borne in mind that it is almost a quarter of the Belgian



medical profession. It is the first time that such a meeting has taken place here and it was in all respects a brilliant success. I have mentioned in previous letters some of the subjects that were to be discussed, so I need only add a word to bring out the essentially practical character that this meeting assumed, owing to the skilful manner in which it was organized. Every physician was at liberty to attend the clinical, surgical or laboratory demonstrations just as he saw fit and as his tastes led him. The demonstrations of the most up-to-date methods were given by the best known and the most competent authorities, who, for this particular occasion, had generously opened to the visitors all their hospital services; and herein lies the newness of the event which marks a great forward movement for Belgium.

#### The Campaign Against Cocain

Since the war, the consumption of coca derivatives has been steadily increasing. It is quite generally asserted that this is due to the ease with which importations can be made from Germany, where the low value of the mark as compared with that of the franc is a favoring factor. In spite of the heavy judicial penalties to which traffickers in cocain render themselves liable, the traffic in the drug continues to progress in a disquieting manner. More stringent laws against the traffic in narcotic substances in general have also been recently passed, but fears are entertained lest, being aimed mainly at practicing physicians and professional pharmacists, they may prove entirely inadequate, as far as the main purpose for which they were enacted is concerned. Physicians are not permitted to procure narcotic drugs otherwise than from a pharmacist whose shop is open to the public. Any physician, veterinarian or dentist who procures, in a given year, more than 30 gm. (462 grains) of morphin in any form (morphin, morphin salts, opium and its preparations) or 10 gm. (154 grains) of cocain or of its salts, or 5 gm. (77 grains) of heroin or of its salts must, at the request by registered letter of the inspector of pharmacies, keep a register in which he shall record all receipts and expenditures of these drugs in the same manner as is required of pharmacists. Any physician or dentist who shall have prescribed or procured exceedingly large quantities of these drugs must be able to justify his use of them before the medical representative of the Commission médicale provinciale having jurisdiction. Any physician or dentist who shall have, without necessity, prescribed or administered these drugs in such a manner as to create, keep up or aggravate a morphin, heroin or cocain habit will become liable to judicial prosecution.

#### Health Insurance

The political press of this country is demanding in an insistent manner the passage of legislation that will provide insurance against industrial diseases. It is urged that the victims of disease should be granted benefits just as much as the victims of accident. During the war, Belgian miners suffering from nystagmus who had emigrated to other countries were relieved from mining work in Holland and in England, and even in Germany; but when they reentered their own country they could no longer claim this privilege. This condition of affairs is very regrettable and something must be done to improve matters. Above all, the number of those suffering from occupational diseases should be reduced to a minimum. Nothing furnishes a stronger argument in favor of prophylaxis than the results that have been attained in certain industries by earnest preventive measures thoroughly studied and well worked out, in illustration of which we need only to recall the efforts to stamp out ankylosomiasis in Belgium.

In anticipation of the passage of such a law, we should (1) awaken a greater interest of employers in the conserva-

tion of human lives, urging that prophylactic measures be introduced wherever possible and that, wherever feasible, toxic products be replaced by nontoxic; (2) demand the organization of a strict medical inspection of unhealthful industries, both as to the premises and the personnel, and (3) provide for the enlightenment of workmen on hygienic subjects, since many diseases would be avoided if the workmen knew how to protect themselves against them. These are some of the things that many politically influential personages are demanding by way of urgent reform.

#### Spa Under State Control

Spa, our beautiful watering place, will in the future have its affairs more definitely regulated than has been the case in recent years. After vicissitudes without number that have marked for many years the life of this city from the hydrologic standpoint, the Belgian government has taken over the control of its concerns, thus supplanting the communal administration of the past. The government will maintain and improve the bathing establishments and will conserve the natural resources of the springs. Spa thus becomes the property of the state and a national hydrologic station. The government, in assuming the enormous expense involved in the management of this station in keeping with the needs of a growing clientele, will give to the facilities of this resort a national character, the value of which cannot fail to be appreciated by all physicians. "Spa-Etat," as it is now called, is therefore sure to prosper and to serve as a blessing to the many patients for whom its waters are indicated.

#### MADRID

(From Our Regular Correspondent)

Jan. 30, 1922.

#### Roentgentherapy in Gynecology

Dr. Recasens, professor of gynecology in the Madrid Medical School, gave last year in the medical school of Paris a lecture on radiotherapy in cancer of the uterus. In his inaugural speech before the Real Academia Nacional de Medicina, he reviewed again his experience with roentgentherapy applied to gynecology. After considering the theoretical foundation of roentgen-ray therapy and dwelling on the technical details, he reviewed its development in Germany, England, France and the United States, countries which he has visited to study their progress along this line. He stated that a most interesting problem in gynecologic therapeutics was the roentgen-ray dosage to be administered in order to obtain the desired effect. Radiotherapists are divided into two groups, the one favoring radiations in one large field, the other radiations in several small fields. Recasens, who has tried both technics, leans to the latter. He recalled that Professor Friedrich seemed rather fearful for the possible results when one-third or one-fourth of the body was submitted to radiation, since the blood impoverishment thus produced implies a severe derangement for the organism, which is not compensated by the time saved.

He considered in detail the different applications of roentgen rays in gynecology, as follows:

#### UTERINE MYOMA

He has treated some myomas so large that they filled the whole abdomen and reached to the epigastrium. All have disappeared completely under the roentgen rays, although sometimes their disappearance has taken several years. When the phenomena due to compression are marked and there are disturbances in the renal circulation, Recasens prefers surgical treatment. When there is suppurative adnexitis or pus pockets that of themselves would require an operation, it seems logical to remove the myoma at the same time. In cases of carcinomatous or sarcomatous degeneration



of the myoma, he operates, irradiating subsequently if there is a possibility that malignant elements may remain. Basing his conclusions on hundreds of cases, Recasens thinks no abdomen should be opened for myoma of the uterus until roentgenotherapy has been tried. His experience permits him to insure curability in all cases in which the treatment is not contraindicated.

#### METROPATHIC HEMORRHAGES

The statement made in regard to the fibromyomatous growths might be applied also to metropathic hemorrhages, i. e., hemorrhagic processes which, while not due to actual uterine lesions, become serious on account of their size. In young women, hemorrhages from the ovary are rather frequent, being caused by salpingo-ovarian processes. It is known that an adnexal inflammation has widely varying effects on menstrual function, according to its intensity. When the inflammation is not intense, no destruction occurs in the ovigenetic layer in the ovary, but the increased circulation causes hemorrhages which may be profuse. In these cases, the roentgen ray may be used with undoubted advantages, especially if, after producing the temporal or permanent castration, diathermic currents are used.

#### OSTEOMALACIA

In this condition also roentgenotherapy is used with success. In osteomalacia, it is common to find an excess of function in the ovary or an insufficient function in antagonistic glands, such as the suprarenals and the thymus.

#### CASTRATION

Professor Friedrich's experience with many dozens of cases has shown him that roentgen-ray castration is followed by serious and lasting trouble.

#### CANCER OF THE UTERUS

Recasens divides this condition into four groups. He says that cases so limited as to make possible a cure by removing the uterus through the vagina or through a simple abdominal hysterectomy are scarce in Spain, not reaching 5 per cent. among the many dozens of cases seen by him. These cases make up his first group. The second group comprises cancers in the borderland of operability, i. e., cervical carcinomas with slight parametric lymphatic extensions. These constitute from 6 to 7 per cent of the total. The third group comprises absolutely inoperable cases, since the disease has already extended to neighboring organs. The fourth group is composed of cases in which, besides the local extension, the general manifestations suggest a quick and fatal termination. In the first group, Recasens favors radioactive treatment, since only once did he fail to obtain a permanent cure in this group of patients. In the second group also, he favors roentgen-ray treatment; the best operators have a mortality of 10, 12 and even 16 per cent. Among cured cases, only 50 per cent. survive after three years. In the third group, all authors advise roentgen ray and radium. In the fourth group, however, radiations might be the last stroke which would put an end to the patient's life. Recasens associates with radiotherapy, in the cases of cervical cancer, the application of a tube containing from 40 to 60 mg. of radium element. It is a fact that the number of permanent cures, i. e., those lasting over five years, in inoperable cases amounted only to 26 per cent., until a year ago, but, with the new methods of roentgenotherapy the percentage is improving, and it is expected 30 or even 35 per cent. cures, lasting over five years, will be secured.

#### CANCER OF THE BODY OF THE UTERUS

These cancers show such a slight operative mortality that Recasens prefers surgical removal to radiation when the circulatory condition does not contraindicate the operation.

#### CANCER OF THE BREAST

Recasens has obtained some remarkable cures by roentgen-ray radiation in carcinoma of the breast among women who refused to be operated on. Even so, his experience leads him in easily operable cases to advise surgery followed by roentgenotherapy, and the latter only in inoperable cases.

#### BERLIN

(From Our Regular Correspondent)

Jan. 20, 1921.

#### Injuries to Health from Hypnosis

Professor Siemerling, the psychiatrist of Kiel, referred in a recent lecture to the fact that injuries to health from hypnosis and suggestion are becoming of late extremely frequent. During the last three years, eight such cases have been observed in the *Nervenlinik* at Kiel. Three of the cases arose from attempts at hypnosis by hypnotists and magnetizers as performed for therapeutic purposes on patients with pronounced mental defects. In two cases judicial proceedings were instituted against the hypnotist. In establishing the degree of disability, it was assumed that considerable exacerbation of the condition had occurred owing to the hypnosis. It may, therefore, be definitely stated that hypnosis does not exert a therapeutic effect on patients with pronounced mental defects. In three of the cases, the fact that the patients had been actively connected with hypnotism and spiritualism was of great importance in a consideration of the origin of the psychic disturbances. In one case, a young man of 22, who had been previously in good health, developed a grave mental disorder with hallucinations and mental excitement as the result of his activities in the field of hypnosis, he having for a time endeavored to function as a hypnotist. His recovery was, however, complete. In another case, as the result of hypnotic experiments, an hysterical state of clouded consciousness was produced in a woman with a predisposition to hysteria. In a fifth case, hypnotic influences had brought about, as a suggestive effect, an hallucination of hearing. In all the foregoing cases, in the efforts to restore the normal mental condition, no hypnosis in the sense of a production of sleep had been employed, but only suggestion combined with hydrotherapeutic and electric treatment. Siemerling is cautious about committing himself in regard to the general value of hypnosis as a therapeutic remedy. Hypnotism offers in its methods and in its fundamental character no guarantee that it deserves to be preferred to other therapeutic methods. Experience does not seem as yet to offer sufficient justification for our taking up with hypnotism, a field in which exaggeration, deception and self-deception have free play. There is no subjective symptom that could not be implanted in the mind of a subject by hypnotic suggestion. In all cases of auditory hallucinations, especially when the sexual element plays a part, it is justifiable to ask whether hypnosis was necessary in order to attain the desired end. In view of the strong influence that can be exerted on a subject by a hypnotic state, it is quite out of place to employ hypnotism in order to secure evidence in judicial procedures. There are moral, medical and technical objections to making any such use of hypnotism.

#### Endogenous Psychoses in Relation to Posterity

Professor Rüdín of Munich, a psychiatrist and investigator in the science of heredity, published not long ago the results of his endeavors to throw light on the hereditary aspects of dementia praecox by examining the brothers and sisters of those suffering from this psychosis. Hoffmann, the Tübingen psychiatrist, pursuing a similar purpose, recently published a treatise setting forth the results of his researches on the descendants of dementia praecox patients, and it is



interesting to note that he confirms and develops further many of Rüdín's findings. The material for his investigations, which it is difficult to obtain, was placed at his disposal by the genealogic department of the Munich Institute of Psychiatric Research. Hoffmann found that 9 per cent. of the children of dementia praecox patients suffered from the same mental disorder. This fact, together with certain other findings, confirms Rüdín's assumption that dementia praecox is a hereditary disease of a recessive type having as its basis a dihybrid mode of inheritance. In manic-depressive insanity, as regards which Hoffmann's investigations were even more difficult on account of the many grades of this disorder, he found 31 per cent. of the children of patients with manic-depressive insanity also afflicted. Here, then, recessive inheritance is not to be considered, but, on the contrary, we must conclude that in all probability a dominant form of inheritance, in some form or other, must obtain. According to Hoffmann, the assumption of a dominant, sex-linked form of inheritance is not supported by the facts, in spite of the predominance of women among manic-depressive patients. Though his material is not abundant, Hoffmann considers the hereditary aspects of genuine epilepsy, also. So far as the restricted material allows of conclusions, it would seem that the hereditary aspects of epilepsy are much the same as those of dementia praecox. Hoffmann discusses also the hereditary manifestations of paranoid psychoses. In several cases of paraphrenia, paranoia and paranoid affections in the aged, he was able to demonstrate a hereditobiologic relationship with dementia praecox.

#### Anthropoid Apes

A few days ago, the director of our zoological garden, Professor Heck, gave a talk on the anthropoid apes which were brought to Berlin from the island of Teneriffe and to which I referred in a previous letter. In spite of the extraordinarily close relationship existing between the orang-utan, the gorilla and the chimpanzee, on the one hand, and human beings on the other, these anthropoid apes cannot be regarded, by any means, as ancestral types of man, but must be considered rather as submerged cousins of the more favored *Homo sapiens*. As Heck expressed himself, in a drastic though no less appropriate manner, the anthropoid apes stopped half way.

The heaviest gorilla brain is no heavier than that of a child, and weighs, at the most, one third that of an adult man. Whereas in man we find seventy distinct brain centers, in the anthropoid apes there are only twelve, the speech centers being entirely lacking, for which reason it is an absurdity to speak of the "ape language." Apes are, to be sure, able to give expression to certain utterances indicative of comfort or discomfort, satisfaction or dissatisfaction, but these are only what Darwin termed expressions of emotion and, at the best, can be regarded only as the first elementary step toward language formation. Whereas apes during the juvenile period show a certain resemblance to human beings, with increasing age an ever greater diversity can be noted. On the basis of anatomic findings and from comparisons with the skeleton of the Neanderthal man, Heck shows that the present-day apes cannot possibly be our ancestors. The anthropoid apes must, at a very early period, have branched off from an ancestral type common to man and owing to their arboreal habits got "stuck," as it were, thus failing to develop.

But if one wishes to become thoroughly familiar with the nature and character of apes, they must be studied also outside of a zoological garden, for here, owing to the great interest that they attract, they are likely to become "humanized" to a greater or less extent. They should be studied, if possible, in their natural surroundings.

## Marriages

FAIRFAX G. WRIGHT, Chambersburg, Pa., to Miss Ida A. Gillis of New Brunswick, Canada, at Harrisburg, Pa., December 27.

HOLLAND TODD GROUND, Virginia, Minn., to Miss Doris Edwards of Albert Lea, Minn., in January.

CHARLES WALLACE THOMAS, Milton, Ore., to Miss Lucile Wolf of Illinois, January 4, at Milton.

STEPHEN GREGORY MOLICA to Miss Fern Allmand of Ann Arbor, Mich., at Detroit, February 11.

CHARLES ALTON RUTHERFORD, Seattle, to Miss Blanche Libby of Los Angeles, recently.

EDGAR A. POLE, Hot Springs, Va., to Mrs. Alice Clarke of Charlottesville, Va., in January.

EDWIN POST MAYNARD, JR., to Miss Virginia Mollemhauer, both of Brooklyn, February 11.

WILLIAM MURRAY ENNIS to Miss Bland G. McGady, both of Brooklyn, February 21.

## Deaths

Otto Augustus Wall, St. Louis; Missouri Medical College, St. Louis, 1870; Bellevue Hospital Medical College, New York City, 1871; former professor of materia medica and therapy, Missouri Medical College, St. Louis; member of the St. Louis College of Pharmacy and the New York College of Pharmacists Association; professor of chemistry, Missouri Medical College, 1879-1882; at one time professor of materia medica and botany, St. Louis College of Pharmacy; vice president of the Convention for Revision of U. S. Pharmacopeia, 1900-1910; member of the Missouri Pharmaceutical Association and the American Pharmaceutical Association; author of "Companion to the U. S. Pharmacopeia" and a book on "Sex Worship," was found dead in bed from heart disease, February 13, aged 75.

Charles M. Wade, Sioux City, Iowa; Sioux City College of Medicine, 1898; formerly president of the Sioux Valley Medical Association; coroner of Woodbury County, 1908-1916; at one time instructor in mathematics at Morningside College; former professor of orthopedic and clinical surgery, Sioux City College of Medicine, and obstetrician to St. Joseph's Mercy Hospital, Sioux City; died, February 5, aged 53, from heart disease and cirrhosis of the liver.

Joseph Roberts Bryan, Philadelphia; University of Pennsylvania, Philadelphia, 1889; member of the Medical Society of the State of Pennsylvania; formerly member of the staffs of St. Vincent's and Misericordia hospitals; member of the Pathological Society of Philadelphia and the Philadelphia Pediatric Society; died, February 14, aged 57, at the Misericordia Hospital from complications following pleurisy.

John Bernard Voor, Louisville, Ky.; University of Louisville Medical Department, Louisville, 1913; member of the Kentucky State Medical Association; assistant director of the American Red Cross Commission in Poland; served during the World War, M. C., U. S. Army, died, February 14, aged 31, in Warsaw, from typhus contracted while on inspection duty at refugee camps in Baranow, Poland.

James Martin Peebles, Los Angeles; Philadelphia University of Medicine and Surgery, Philadelphia, 1876; also an author and pastor; member of the Indian Peace Commission, 1868; U. S. consul at Trebizond, Turkey, 1869; represented the U. S. Arbitration League at the International Peace Commission of Europe in Paris; died February 16, aged 99 years and 11 months.

Thomas Ellwood Conard <sup>⊕</sup> Philadelphia; Jefferson Medical College, Philadelphia, 1878; formerly assistant surgeon, Wills Eye Hospital and on the staff of the Pennsylvania Hospital, Philadelphia; member of the College of Physicians of Philadelphia and the Philadelphia County Medical Society; died suddenly, February 12, aged 74, from heart disease.

Alonzo Wyatt McNeal, National Soldiers Home, Tenn.; Lincoln Memorial University Medical Department, Knoxville, 1914; member of the Tennessee State Medical Association;

<sup>⊕</sup> Indicates "Fellow" of the American Medical Association.



served during the World War at the National Soldiers Home, Johnson City, Tenn., with the rank of captain; died recently, aged 36, at the Knoxville Hospital, from diabetes.

**James Hector Mackay** ☉ Houston, Texas; Hahnemann Medical College and Hospital of Chicago, 1884; member of the State Medical Association of Texas; formerly editor of the *Homeopathic Medical Journal* published at Omaha; at one time superintendent of the Norfolk State Hospital, Norfolk, Neb.; died in January, aged 56.

**Sewell Elliott Greenwood**, Templeton, Mass.; Medical School of Harvard University, Boston, 1877; member and at one time president of the Massachusetts Medical Society; for more than twenty years a member of the school committee; died, February 5, aged 68, at the Henry Heywood Memorial Hospital, Gardner, Mass.

**Clayton R. Truesdale**, Fremont, Ohio; Chicago Homeopathic Medical College, Chicago, 1891; member of the Ohio State Medical Association; county commissioner; former president of the Chamber of Commerce; on the board of the Memorial Hospital, where he died, February 7, aged 55, from cerebral hemorrhage.

**Benjamin Elisha Dawson**, Kansas City, Mo.; Medical College of Ohio (University of Cincinnati), Cincinnati, 1875; Eclectic Medical University, Kansas City, 1903; also a pastor; died recently at the private hospital of his son, Canadian, Texas, following an operation for obstruction of the hepatic duct, aged 69.

**Adelbert Blockford Gilliland**, Cottonwood, Calif.; Chattanooga Medical College, Chattanooga, Tenn., 1894; member of the Medical Society of the State of California; president of the Shasta County Medical Association; health officer of Cottonwood; died, January 26, aged 72, from carcinoma of the prostate.

**Dupuytren C. L. Mease**, Freeport, Ill.; Rush Medical College, Chicago, 1884; member of the Illinois State Medical Society; president of the Freeport Trust and Savings Bank and the Stephenson County Telephone Company; died, February 6, aged 60, at Fort Myers, Fla., from heart disease.

**Samuel Thompson Quick**, Fort Collins, Colo.; Eclectic Medical Institute, Cincinnati, 1879; member of the National Eclectic Medical Association; formerly president of the board of directors of the Fort Collins Hospital Association; died, February 13, aged 78, from angina pectoris.

**Charles Ellison Jamison**, Asbury Park, N. J.; University of Louisville, Medical Department, Louisville, Ky., 1911; member of the Medical Society of New Jersey; county physician; physician to the Neptune township public schools; died, February 8, aged 36, from pneumonia.

**Hannah M. Thompson**, Wilmington, Del.; Woman's Medical College of Pennsylvania, Philadelphia, 1883; formerly gynecologist at the dispensary of Delaware Hospital, and physician to the Girls' Reform School of Delaware; died, February 7, aged 74.

**William Edward Ely** ☉ Ochevedan, Iowa; University of Michigan, Ann Arbor, 1885; formerly president of the Osceola County Medical Society; founded and donated the Ochevedan Public Library; died, February 12, from gangrenous appendicitis, aged 60.

**Andrew D. Welker**, Gambier, Ohio; Louisville Medical College, Louisville, Ky., 1872; formerly on the Gambier board of education and the town council; at one time city health officer; died, February 7, following a long illness, aged 74.

**James H. Jarrett**, Towson, Md.; University of Maryland, Baltimore, 1852; veteran of the Civil War; member of the Medical and Chirurgical Faculty of Maryland; at one time member of the state legislature; died, February 12, aged 90.

**John Martin Bearden**, Springdale, Ark.; Barnes Medical College, St. Louis, 1900; member of the Arkansas Medical Society; city health officer; died, February 5, aged 44, from tetanus following the extraction of an infected tooth.

**Frederick Howard Plummer**, Chelsea, Mass.; Long Island College Hospital, Brooklyn, 1892; served during the World War, M. C., U. S. Army, with the rank of lieutenant; died suddenly, February 12, aged 57, from heart disease.

**Charles Henry Wallace**, Philadelphia; University of Pennsylvania, Philadelphia, 1886; member of the West Philadelphia Medical Association, and the Medical Club of Philadelphia; died, February 15, from pneumonia, aged 61.

**Charles Alexander Rhodes**, New York City; Medical Department of the University of the City of New York,

1884; visiting physician to St. Joseph's and St. Luke's Home; died, February 14, aged 67, from heart disease.

**William Carson**, Shelbyville, Mo.; St. Louis Medical College, St. Louis, 1868; member of the Missouri State Medical Association; formerly vice president of the Shelby County Medical Society; died, February 10, aged 76.

**David La Bau**, Victoria, B. C., Canada; College of Physicians and Surgeons in the City of New York, 1880; was found dead in his office, February 12, with a bullet wound in his head, presumably self inflicted.

**Charles E. Taft** ☉ Hartford, Conn.; Medical School of Harvard University, Boston, 1886; formerly on the staff of the Boston City Hospital and the Women's Hospital, New York; died, February 10, aged 58.

**William O. Langdon**, Hutchins, Texas; Missouri Medical College, St. Louis, 1870; former president of the medical and surgical staff at the Springfield Hospital, Springfield, Ill.; died, January 31, aged 73.

**McMorris Houston**, Joliet, Ill.; Hahnemann Medical College and Hospital of Chicago, 1884; formerly on the staff of the Silver Cross Hospital, where he died, February 6, aged 74, following an operation.

**Stephen Kelly**, New York City; Bellevue Hospital Medical College, New York City, 1871; formerly president of the Fifth National Bank, New York City; died, February 11, aged 74, from pneumonia.

**Varillas Glenn Birney**, Greene, Iowa; Medical Department of the University of Illinois, Chicago, 1903; served in the World War; died, February 7, aged 41, from diabetes, the result of being gassed.

**James N. Metcalf** ☉ Monticello, Minn.; University of Minnesota Medical School, Minneapolis, 1906; was killed, February 12, aged 42, when the sleigh in which he was driving was struck by a train.

**Ewing Van Darian Morris** ☉ Galesburg, Ill.; Rush Medical College, Chicago, 1884; president of the Galesburg Sanatorium; died, February 11, at St. Mary's Hospital, from pneumonia, aged 63.

**Clifford Summer Hiddleston** ☉ Akron, Ohio; Medical College of Ohio, Cincinnati, 1883; specialized in internal medicine; died, February 15, aged 61, from arteriosclerosis and chronic nephritis.

**James D. Norton**, Maryville, Tenn.; Tennessee Medical College, Knoxville, 1904; member of the Tennessee State Medical Association; died, February 5, after a lingering illness, aged 46.

**Robert William Forster** ☉ Lawrence, Mass.; Tufts College Medical School, Boston, 1900; member of the staff of the Lawrence General Hospital; died, February 7, aged 47, from pneumonia.

**Joseph Cyrus Davis**, Carlisle, Pa.; Jefferson Medical College, Philadelphia, 1875; former coroner of Cumberland County; physician to the Cumberland County Home; died, February 9.

**Edmund Lee Tompkins**, Fine Creek Mills, Va.; University of Virginia, Department of Medicine, Charlottesville, 1885; member of the Medical Society of Virginia; died recently, aged 59.

**Guy L. McCutcheon**, Buffalo, N. Y.; University of Buffalo, N. Y., 1896; member of the Medical Society of the State of New York; died, February 2, at Phoenix, Ariz., aged 49.

**John Wilborn Baird**, Henderson, Tenn.; Vanderbilt University Medical Department, Nashville, 1875; formerly county health officer; died, February 10, from pneumonia, aged 68.

**William Henry Myers** ☉ Sheldon, Iowa; Rush Medical College, Chicago, 1882; owner of the Myers Hospital; president of the board of education; died, February 8, aged 64.

**William A. Rice**, Louisa, Ky.; Louisville Medical College, Louisville, 1890; member of the Kentucky State Medical Association; died, February 7, from pneumonia, aged 62.

**Howard T. Irvine**, Austin, Texas; University of Manitoba Faculty of Medicine, Winnipeg, Canada, 1909; died, January 4, aged 38, at Rochester, Minn., from arteriosclerosis.

**Shelton Alvin Ramsey**, Drew, Miss. (license, Mississippi, 1909); died, February 5, at St. Joseph's Hospital, aged 32, from pneumonia, resulting from a gunshot wound.

**Andrew C. Fisher**, Emmerton, Va.; Medical College of Virginia, Richmond, 1885; member of the Medical Society of Virginia; died, February 7, from pneumonia.



Reuben Pearce Tye, Chickasha, Okla.; Kentucky School of Medicine, Louisville, 1886; formerly surgeon for the Rock Island Railroad; died, February 9, aged 70.

Frederick Robert Farthing, Boone, N. C.; Jefferson Medical College, Philadelphia, 1921; died, February 14, aged 27, from pneumonia, at St. Joseph's Hospital.

Trueman A. Beeman, Bancroft, Ont., Canada; Queen's University Faculty of Medicine, Kingston, Ont., 1887; died, February 9, aged 59, from heart disease.

Jules Baron, Herculaneum, Mo.; St. Louis Medical College, St. Louis, 1881; formerly coroner of St. Louis; died, February 14, aged 62, from heart disease.

Willis Harris Pope, Trinity, Texas; Dallas Medical College, Dallas, 1904; member of the State Medical Association of Texas; died, February 9, aged 63.

Whitney A. Taylor, Broadtop, Pa.; Eclectic Medical College of Pennsylvania, Philadelphia, 1879; died, January 31, from cerebral hemorrhage, aged 66.

Clinton D. Woodruff, Reed City, Mich.; Buffalo College of Rational Medicine, Buffalo, N. Y., 1881; veteran of the Civil War; died, February 9, aged 89.

Charles Henry Tindall ☉ Yuma, Ariz.; Chattanooga Medical College, Chattanooga, Tenn., 1905; aged 45, was recently killed in an automobile accident.

Christian Johnson ☉ Everett, Wash.; Washington University School of Medicine, Baltimore, 1874; died, January 2, following an operation, aged 68.

S. Ellen Rourke, Lincoln, Ill.; Keokuk Medical College, Iowa, 1896; formerly a school teacher; died, February 9, at St. Clara's Hospital, aged 55.

Jesse Franklin Stong, Barada, Neb.; Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, 1900; died recently, aged 47.

James William Flow, Kannapolis, N. C.; North Carolina Medical College, Charlotte, 1898; died, February 8, aged 44, from chronic nephritis.

Charles S. Vance, Cisco, Texas; College of Physicians and Surgeons, Baltimore, 1875; died, February 10, from acute indigestion, aged 74.

James M. Curran, Cross Roads, Pa.; Maryland Medical College, Baltimore, 1900; died, January 7, aged 60, from angina pectoris.

Albert J. Fraleigh, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1904; died, November 26, aged 46, from diabetes.

James H. West, Springfield, Ohio; University of Louisville, Ky., 1873; died, January 2, from cerebral hemorrhage, aged 83.

J. O. Clark, Downingtown, Ohio (license, Ohio, 1896); served two terms in the state legislature; died, February 4, aged 83.

Leland Walker, Washington, D. C.; Hahnemann Medical College and Hospital of Chicago, 1868; died, February 5, aged 96.

William H. Belt, Oswego, Kan.; University of Louisville, Louisville, Ky., 1870; died, February 5, aged 75, from pneumonia.

Addison J. Collver, Otterville, Ont., Canada; Victoria University Medical Department, Victoria, 1862; died, December 2.

John Andrew Hershey, Owen Sound, Ont., Canada; University of Toronto, Ont., 1892; died, November 21, aged 54.

Isaac W. Hewlings, Moorestown, N. J.; Jefferson Medical College, Philadelphia, 1869; died, February 8, aged 74.

Stephen S. Campbell, Memphis, Tenn.; Memphis Hospital Medical College, 1901; died, February 8, aged 58.

J. William Tibbels, Ranger, Texas; American Medical College, St. Louis, 1883; died, November 26, aged 71.

William L. Crowder, Oskaloosa, Iowa; Rush Medical College, Chicago, 1870; died, February 9, aged 81.

Thomas Stanley Orr, Hamilton, Ont., Canada; University of Toronto, 1908; died recently, aged 50.

**Correction.**—The report of the death of Dr. George H. Gorham, Boston, printed in the February 18, issue of THE JOURNAL is incorrect. It was an error in duplicating for Dr. George H. Gorham, Bellows Falls, Vt., who died, November 28, and whose notice appeared December 24.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### HALE'S EPILEPTIC RELIEF

"Hale's Epileptic Relief," "manufactured exclusively by" the "Dr. Hale Laboratories," 9 East Walker Street, New York City, has been brought to the attention of the public through the advertising pages of certain cheap weeklies. According to these advertisements, Hale's Epileptic Relief is "prescribed by the best New York specialists," it "cures fits and epilepsy," a "\$1.50 bottle" is sent free.

Those who answered the advertisements received a 4-ounce bottle of a brown liquid and a small package of tablets. They also received a form-letter from "Dr. Hale Laboratories," stating that "a bottle of Hale's Epileptic Relief, together with a sample box of Hale's Liver Tablets," was being sent. The stationery on which the form-letter was printed bore, in the upper left-hand corner, a picture of a substantial looking business block, seven stories high. According to the legend under this picture, this building constituted the "Laboratories and Offices" of the concern. A commercial agency reported that the proprietor of "Dr. Hale Laboratories" was apparently



Photographic reproduction of a typical advertisement of "Hale's Epileptic Relief."

one O. C. Hoyt who had desk room at 9 and 11 Walker Street, but who was never at his desk when the reporter of the agency called to see him.

In the first form-letter sent out to those who write for the free sample the concern says:

"We would be pleased at any time to have you visit us when you come to New York and go through our laboratories and offices."

In order to obtain a better idea of the equipment of this concern, the help of a resident of New York was enlisted who visited the "Laboratories and Offices" at 9 and 11 Walker Street. The visitor reported that at this address there was an old-fashioned building with freight and passenger entrance all in one. The entrance had no directory of the building, but there was a line of, perhaps, six metal mail-boxes; the freight lined up in front of these boxes made it impossible to see who or what they represented. The elevator man, in answer to an inquiry for the Hale Laboratories, took the visitor to the third floor. This was found to be a warehouse with cases and boxes piled high, but with no sign or lettering of any kind visible. The only person on the floor was a woman, who, when asked for the manager or person in charge, pointed to herself and said, "That's me!" When asked if the president or vice president was in, she replied that he was not, but that he might possibly be in the next afternoon. Asked the name of the president, the woman said "Hoyt."

One side of the floor of this warehouse-like place was partitioned off into offices. Outside of this partition was a small desk room, apart from the rest, to which the woman in charge motioned when she spoke about the "president." No other person was in sight and, in answer to the inquiry, the woman said she was alone in this place. In answer to

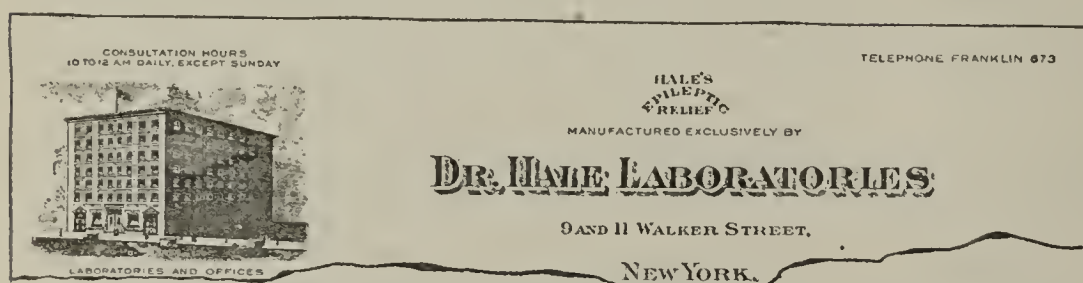


another inquiry, the woman stated that the concern manufactured an emulsion and an epilepsy cure.

So much for the difference between the mental picture conjured up by the advertising matter of the Dr. Hale Laboratories and the facts. The booklet sent out by this concern states that Hale's Epileptic Relief is the formula of a "well-known New York specialist in nervous disorders." A specimen bottle of Hale's Epileptic Relief (alcohol 7 per cent.) and some "Hale's Liver Tablets" were turned over to the Association's Laboratory with the request that the bromid content of the epilepsy nostrum be estimated. The Laboratory report follows:

#### CHEMICAL REPORT

"One bottle labeled 'Hale's Epileptic Relief' was submitted to the Chemical Laboratory for an estimation of the bromid content. The bottle contained about 4 fluidounces of a brown colored fluid, having an aromatic odor and a salty taste. Qualitative tests showed the presence of ammonium, potassium, sodium and bromids. Iodid was not found. Calculating from the quantitative haloid determinations, 100 c.c. of the liquid contains bromids equivalent to 20.73 grams of potassium bromid. Therefore each teaspoonful (one dose) contains



Photographic reproduction (reduced) of the letterhead of the "Dr. Hale Laboratories." Note the imposing picture of the alleged "Laboratories and Offices," and compare with the word picture given by an investigator.

essentially 13 grains of potassium bromid and each daily dose (4 teaspoonfuls) is equivalent to 52 grains of potassium bromid.

"Accompanying the bottle, was a small package of laxative pills. These were found to contain emodin-bearing (laxative) drugs—possibly aloes."

A bromid mixture; the usual combination of the mail-order epilepsy quack.

#### MORE MISBRANDED NOSTRUMS

##### Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

**Krause's Phosphorets.**—In June, 1920, the Norman Lichty Mfg. Co., of Des Moines, Iowa, shipped a quantity of "Krause's Phosphorets" to Chicago. The product was declared misbranded by the federal authorities. When analyzed by the chemists of the Bureau of Chemistry, the preparation was reported to consist essentially of ferrous (iron) carbonate, asafetida and traces of phosphorus. Among the claims that appeared on or in the trade package were:

"Will cure all diseases arising from a shattered condition of the nervous system, or the exhaustion of the vital energies of the brain from overwork, worry, dissipation, excesses or overindulgence of any kind . . . successful in the treatment of nervous debility, dizziness, despondency, paralysis, neurasthenia . . . ringing noises in the head, lack of energy or ambition, . . . muscular weakness, shortness of breath . . . pain in the back, loss of memory, indecision, sciatica, early decay, rheumatism, hysteria, wasting diseases, . . . restore the blood to its normal condition, throw off the impurities and overcome diseases infesting the system."

"They will . . . cure . . . spermatorrhea . . . drains of the prostatic fluid."

These claims were, naturally, declared false and fraudulent. In April, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9413; issued Oct. 24, 1921.]

**Binz Bronchi-Lyptus.**—In March, July and October, 1920, Edward G. Binz, Los Angeles, shipped to St. Louis a quantity of this product which the federal authorities declared misbranded. When analyzed by the Bureau of Chemistry the stuff was reported to consist of a solution containing essen-

tially oils of eucalyptus and peppermint, glycerin, sugar, gum acacia, alcohol and water. The stuff was labeled in such a way as to make the purchaser believe that the product was an efficient remedy for croup, whooping cough, sore throat and loss of voice, and palliative in tuberculosis coughs. These claims were declared false and fraudulent. In April, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9425; issued Oct. 24, 1921.]

**Dr. Goodwin's Herbal Compound.**—In February, 1920, Frank A. Goodwin, trading as "Dr. F. A. Goodwin," Chicago, shipped a quantity of this product from Illinois to Missouri. The Bureau of Chemistry reported that analysis of a sample of "Goodwin's Herbal Compound" showed it to consist of a light-brown mixture of powdered plant material containing chiefly senna, fennel, uva ursi (bear-berry) and unidentified plant extractives. Claims, on or in the trade packages, recommended the stuff as an effective treatment, remedy and cure for ailments, disorders and diseases of the stomach, liver, kidneys, nerves, bowels, bladder and the blood, etc. These claims were declared false and fraudulent. In April, 1921, Goodwin pleaded guilty and was fined \$100 and costs.—[Notice of Judgment No. 9462; issued Oct. 29, 1921.]

**Dubois Pefic Pills.**—A quantity of "Dubois Pefic Pills" consigned by W. J. Baumgartner of Detroit was shipped from Michigan to Washington in March, 1921. The federal chemists reported that analysis showed the pills to consist essentially of aloes, ferrous sulphate (copperas), calcium carbonate (chalk) and sugar. The stuff was declared misbranded because the pills were claimed to be "purely vegetable" which the analysis shows was an obvious falsehood. Furthermore, the pills were claimed to be a "reliable female tonic and regulator of menstrual disturbances and for relieving general female disorders," etc. These claims were declared false and fraudulent. In June, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9468; issued Oct. 29, 1921.]

**4-11-44 Capsules and Injection.**—In June, 1919, A. J. Benson, Pottsville, Pa., shipped a quantity of these products to Ohio. The federal chemists reported that examination of the "capsules" showed them to contain cubebs, copaiba and small amounts of magnesium oxid and alum. They were falsely and fraudulently labeled, in part:

"Causes No Stricture."

"Safe And Speedy Compound For Clap, Gonorrhea, Gleet Or Any Discharge From Urinary Organs Warranted A Sure Relief For Clap, No Matter How Long Standing, In a Few Days."

The chemists reported that the "Injection" was a solution of zinc sulphate and salt in water. This product was falsely and fraudulently labeled, in part:

"Nature's Marvelous Remedy which invariably relieves Clap, Gleet or any discharge from the Male Genital Organs. A Positive Relief from these Diseases in all stages."

In July, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9551; issued Dec. 10, 1921.]

**Metzger's Catarrh Remedy and Spede Oil.**—In April, 1919, and March, 1920, George Franklin Metzger, trading as the Metzger Manufacturing Company, Bethlehem, Pa., shipped a quantity of these two products into the state of Ohio.

The so-called "catarrh remedy" was reported by the Bureau of Chemistry to consist essentially of iodid, a mercuric compound, gentian, 43 per cent. of alcohol and water. It was falsely and fraudulently represented as an effective treatment, remedy and cure for catarrh of the nasal cavity, eye, ear, throat, stomach, bowels, bladder, lungs, womb, small intestines, etc.



"Spede Oil" was reported by the federal chemists to consist essentially of gasoline, oil of eucalyptus, methyl salicylate, menthol, camphor and ether. This product was falsely and fraudulently represented as an effective treatment, remedy and cure for gout, pleurisy, headache, lumbago, chilblains, frozen feet, weak ankles, hay-fever, itching piles, blood poisoning and a few other things. In June, 1921, Metzger entered a plea of nolo contendere and was fined \$10.—[*Notice of Judgment No. 9547; issued Nov. 24, 1921.*]

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## Correspondence

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### SCARCITY OF PHYSICIANS

*To the Editor:*—In THE JOURNAL, February 11, page 436, you state that there is no shortage of physicians in the United States but you lament the fact that there is a scarcity of physicians in rural communities. As a reason, the fact is given that young graduates would rather stay in the cities because of lack of diagnostic facilities in the average rural community. I have practiced medicine in a rural community all my life, and I believe I know enough of the psychology of the rural community to dispute this reason.

There are more than enough physicians to supply all rural demands who would gladly leave the city, were they assured a fair remuneration for their time. It is my opinion from personal experience that the only reason rural communities have no physicians is that the communities will not give the financial support necessary for a physician to exist and educate a family. There are other contributory causes, but the main cause is nonsupport. The encroachment of the physician from the larger town on that of the smaller place is an evil, but the people of the small community should not complain, because they have the remedy in their own hands. In one place I know of the people needed a physician very badly, but they could not get one to stay. About twenty-five of the most influential citizens contributed \$100 each, making a guarantee of \$2,500 a year if the physician would stay in town. They secured one, and then canvassed the community and were able to get every one in the community financially interested in the guarantee. It is wonderful how quickly the psychology of the situation changed. The guarantee was for a term of five years, and the physician informs me that he does an average business of \$300 a month and, his five years being about up, he has already had enough signers to guarantee his staying another five years.

All this propaganda which is being thrown to the public about certain diseases not being successfully handled and treated in rural communities by rural physicians is buncombe. Venereal disease can be diagnosed and treated just as successfully in a small village, or out in a country home for that matter, as it can in the largest city in the world, and is being just as successfully treated today in the country as it is by the most popular specialist in the city.

I do not wish to be considered a knocker against specialism, but against the methods which are being used to advertise the city physician at the expense of the physician who would rather practice in a rural community than in a city, but is deterred by this advertising, which belittles the intelligence of rural physicians as well as rural communities. Magazines and newspapers laud the equipment of certain physicians, and the public believes they are great physicians. When all the camouflage is removed we shall probably find that the real benefit is not therapeutic, except for its psychologic effect on the patient. Soon the country, or, as commonly called, rural physician finds that all his patients have gone to the city to get the advantages of the methods which are lauded. If many of our city brothers in the profession ran up against some of

the problems we of the country encounter almost every day, they would not be so free with their criticisms against the rural practitioner. The worst thing that can befall the medical profession is the passing of the rural physician.

T. H. LINE, M.D., Central City, Neb.

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### USE OF THE WORD "MORON"

*To the Editor:*—I was interested in your reply to the inquiry of Dr. Edward A. Foley (THE JOURNAL, Jan. 7, 1922, p. 59), who had requested information with regard to the derivation and use of the word "moron." The word did not come into use until 1910, when it was suggested by the American Association for the Study of the Feeble-minded. It is of interest to know, in this tercentenary of Molière, that the dramatist used the word as a name for one of his characters (the court fool) in the five act play, "La Princesse d'Elide," which was played in 1665 before Louis XIV in a series of entertainments that have had few equals since antiquity. In this play Molière enacted the rôle of Moron. I am under the impression that Molière coined the word and used it for the first time in the manner I have mentioned.

ROBERT W. GIBBES, M.D., Columbia, S. C.

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### SPIRITUALISM IN TREATMENT OF DISEASE

*To the Editor:*—A rather insidious propaganda for the use of spiritualism in the treatment of physical diseases has crept in among a certain class of unfortunate and neurotic members of my practice. The spiritualistic method of treatment does not completely exclude medical care, but I am somewhat alarmed at the tendency toward a morbid mental attitude of a few of my patients who are worthy of better things in life, but who happen to have been denied a type of liberal education which would have given them a better balance in meeting such problems of seeming interest and allurements.

A. B. SHOEMAKER, M.D., North Attleboro, Mass.

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### "THE EARLIEST MAN AND THE LATEST DISEASE"

*To the Editor:*—In the editorial comment on "The Earliest Man and the Latest Disease" (THE JOURNAL, Feb. 25, 1922, p. 586) you say: "There can surely be little justification in attributing dental caries and alveolar abscesses to modern civilization, overcooked foods or too much candy, in view of the testimony of our earliest known ancestor." In your comment, as well as that of others relative to the Rhodesian man, it appears that this skull "has many points of resemblance to or even identity with the skull of modern man." I think it is quite widely accepted that in the process of evolution those creatures that were able to adapt themselves to the changes which occurred in their environment survived, while those that were unable to adapt themselves became extinct.

In the case of the Rhodesian man, it would appear that his points of resemblance to modern man might be taken as an indication that he possessed sufficient intelligence and adaptability to survive up to and into an environment in which he acquired food habits and other modifications which tended to the breaking down of his natural immunity to caries of the teeth; while the Neanderthal man, although he may have lived in a later age, did not possess the intelligence necessary to the adoption of a more complex style of living, or the adaptability to survive the changes that took place in his surroundings.

Modern man first used his intelligence to invent civilization with all its complexities, including candy, refined sugar



and denaturized cereal foods, and then began to seek ways and means whereby he might repair his failing dentures, and thus modern dentistry was born. In former times, changes of environment were much slower than at present, and man was able to adapt himself fairly well; but during the last hundred years we have been going at such a rate that it seems questionable whether we shall be able to survive permanently, even with the development of modern medicine and dentistry.

In the practice of Orthodontia, I see evidence daily indicating that at present man is on the road to becoming a toothless race unless we can induce a return to a simpler manner of living—and that seems improbable, indeed.

L. H. WIRT, D.D.S., South Bend, Ind.

#### "ECHTMAN'S RHINOPULMONARY REFLEX"

*To the Editor:*—In regard to Echtman's rhinopulmonary reflex (*THE JOURNAL*, Feb. 11, 1922, p. 451), I wish to call attention to the fact that in an article which I published in the *Medical Review of Reviews* in October, 1914, under the title "What the General Practitioner Should Know in the Specialty of Ear, Nose and Throat," I said: "When an examination of the chest reveals bronchial breathing in a small area in the third and fourth interspace, nasal obstruction must be considered before pronouncing him or her tuberculous."

MAX LUBMAN, M.D., New York.

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### PHYSICIANS AND THE INCOME TAX

*To the Editor:*—Last summer I attended a congress of ophthalmology and did some work in Vienna. Kindly inform me whether or not I can deduct any part of this expense from my income tax.

C. L. LARSEN, M.D., St. Paul.

ANSWER.—Expenses incurred in graduate medical work are not deductible.

*To the Editor:*—1. Referring to the statement in *THE JOURNAL*, February 4, that "all persons whose net income for 1921 amounts to \$1,000 or over must file returns," is not this an error? 2. Also, page 374, under transportation you say: "If the car is sold, the price received is an addition to the physician's income for the year." This also seems in error. What is there about an automobile to class it as separate from other property?

CHARLES WENDELKEN, M.D., Corpus Christi, Texas.

ANSWER.—1. This question has already been answered several times in *THE JOURNAL*. An income tax return must be filed by every citizen whose gross income amounts to \$5,000, or whose net income amounts to \$1,000 if single or \$2,000 if married.

2. The rule regarding automobiles is the same as that governing real estate. A physician buys a car for a certain amount, which amount is regarded as an investment and not as an expense. He is entitled each year to deduct a certain amount for depreciation. The value of the car to the physician on his books at any time is the original cost to him, minus the amount of depreciation since the time of its purchase. If the physician sells the car for more than the book value of the car to him, then he has made a profit, which profit should be added to his income. If he sells the car for less than its book value, then he has lost money and the amount lost should be deducted.

Example: A physician buys a car in January, 1918, paying \$1,600 for it. In his income tax returns for 1918, 1919 and 1920 he charges off \$200 a year for depreciation, or \$600 in all. July 1, 1921, he sells the car, which has a book value to him at the time of sale of \$900 (\$1,600 original cost, minus \$700 depreciation). If he sells the car for more than

\$900, the difference between this amount and the selling price is a profit and should be added to his income. If he sells the car for less than \$900, he has lost money and can deduct the difference between \$900, the book value of the car, and the selling price.

#### INDICAN REACTION

*To the Editor:*—In making a test for indican by Obermeyer's reagent in a specimen of urine of a woman who was confined about three weeks ago and is now suffering from the grip, I am getting a red chloroform instead of the usual indican color. The urine is otherwise normal, chemically and microscopically. I have examined thousands of specimens of urine, but I never saw the color red instead of indican blue. Please explain the reaction, in *Queries and Minor Notes*.

L. G. WILLE, M.D., New Braunfels, Texas.

ANSWER.—In the decomposition of protein occurring in the intestinal canal, indol and skatol are found among the products of this bacterial cleavage. These substances are absorbed and oxidized in the blood to indoxyl and skatoxyl, which are then conjugated with sulphuric acid, forming indoxyl and skatoxyl sulphuric acids, after which they are excreted in the form of the potassium salts, indoxyl potassium sulphate (indican) and skatoxyl potassium sulphate. Hence, whenever the urine is tested for indican by Obermeyer's test, a certain amount of the skatoxyl compound which is always present will lead to the formation of a red coloration, although it does not ordinarily show up as it is obscured by the blue color of the indican, which is usually in excess. However, in some cases, for reasons not well understood, the skatoxyl potassium sulphate appears in the urine in excess of the indican, so that the Obermeyer test may give distinct red colorations of the chloroform instead of the usual blue. Just what pigment causes these red variations is doubtful, but it has received various names, as, for instance, indigo-red, skatoxyl-red, uro-rubin and uro-rhodin. Whatever it may be, it apparently has the same significance as does the excretion of an excess of indican. Furthermore, if the patient has been taking an iodid, its excretion in the urine will lead to a red coloration of the chloroform on the application of the Obermeyer test. To differentiate this coloration from that produced by an excess of skatoxyl potassium sulphate, add a small amount of a solution of sodium thiosulphate (hyposulphite) and shake. The red coloration due to the iodid will disappear, while that due to the conjugated skatoxyl potassium sulphate will be unaffected. It should also be borne in mind that certain drugs also give a violet or blue coloration to urine with Obermeyer's reagent, which invalidates the indican reaction.

#### COLLOSOLS — BRITISH COLLOIDS LIMITED

*To the Editor:*—You have before referred to the "Collosol" concern and products. They now advertise "Collosol" remedies for widely varying conditions, ranging from venereal troubles to ecarcinoma, rheumatoid arthritis, Hodgkin's disease, pyorrhea, tuberculosis, and the promotion of the growth of hair. I hand you herewith a booklet just received, wherein Sir Malcolm Morris, Mr. J. E. R. McDonagh, the latter's house surgeon and other advanced scientists extol the virtues of Collosol Argentum.

Are the preparations in question true colloidal suspensions? An original bottle of Collosol Sulphur recently purchased shows a heavy deposit and is evidently not a colloidal suspension, and dispensing chemists [druggists] tell me that this occurs with other "Collosols."

Do substances in the colloidal state possess, as alleged, some unique and mysterious therapeutic virtue not exhibited in ordinary solution or the "crystalloid" form?

Please do not mention my name.

—, London, England.

ANSWER.—"Collosols" is the trade name applied to certain alleged colloidal preparations of drugs made in the "Crookes Laboratories by British Colloids Limited," London. The Collosols are recommended for external, internal, intramuscular and intravenous administration. A few years ago, the Council on Pharmacy and Chemistry investigated the "Collosol" products. In common with the experience of our correspondent, several of the specimens submitted to the Council were found to contain precipitates and thus were not colloidal at all. True colloidal solutions should contain the active substances in a uniform microscopic suspension and be free from precipitates. Commenting on the presence of the precipitates, the Council pointed out that if "injected intravenously, as directed, death might result, making the physician morally, if not legally liable." In the cases in which the therapeutic claims for "Collosols" were examined, the claims were found to be either exceedingly improbable or exaggerated. Furthermore, the A. M. A. Chemical Laboratory found, on analysis, that "Collosol Cocain" contains only 40 per cent. of the claimed amount of cocain. This product seems to be no longer advertised.



In glancing through the "Collosols" advertising "literature," one is struck with the frequently recurring references to enthusiastic reports by Sir Malcolm Morris, K.C.V.O., F.R.C.S.E. This medical knight, who, we understand, has nominally retired from practice, during the last few years seems to have devoted his energies to the exploitation of "Collosols," and is reported to be one of the directors of the "Collosols" concern. The manufacturers of "Collosols" undoubtedly find such a distinguished proponent of their products of large commercial value.

The most recent addition to the "Collosol" collection sponsored by Sir Malcolm Morris is that of calcium. This time the published article (*British Medical Journal*, January 14) is by E. E. Prest, who, in his conclusion, expresses "thanks to Sir Malcolm Morris for the interest he has taken and the encouragement he has given me during this investigation"!

No scientific evidence has been presented to show that the therapeutic values of water soluble drugs are enhanced by administration in colloidal form. It is true that in the case of certain insoluble substances—such as metallic silver and its insoluble combinations—the fine state of subdivision inherent to the colloidal state may permit application for therapeutic measures and therefore may be of value. Previous discussions in THE JOURNAL on "Collosols" are:

Ferrivine, Intramine and Collosol Iodine, Sept. 8, 1917, p. 841.

Collosol Cocaine Not Admitted to N. N. R., April 12, 1919, p. 1094.

Collosol Manganese, Queries and Minor Notes, May 3, 1919, p. 1318.

Collosol Preparations, June 7, 1919, p. 1694.

Collosols: An Uncritical English Endorsement, editorial, Oct. 18, 1919, p. 1218.

Publication of the investigations of the Council on Pharmacy and Chemistry and the A. M. A. Chemical Laboratory in THE JOURNAL have apparently had an effect. The "Collosols" are not pushed in the United States today, although they are heavily advertised in the British Isles. As THE JOURNAL said, editorially, in discussing "Collosols," Oct. 18, 1919:

"Just so long as the English profession will not protect itself by creating a competent board to examine and judge proprietary medicines and to control methods of exploitation, just so long will such extravagant and even cruelly misleading claims continue to impede scientific progress in therapeutics."

#### WIDAL TEST—INTESTINAL AMEBAS

To the Editor:—1. Please describe the method of preparing and sterilizing suspensions of *Bacillus typhosus* to be used in making the Widal test.

2. Do Widal reactions made with permanent sterilized suspensions give as reliable results as obtained by using fresh, living organisms?

3. Please describe the method of examining for intestinal amebas—fresh method and method for permanent mount.

Please omit name and address if printed in Queries and Minor Notes.  
S. A. H.

ANSWER.—1. Cultures of the typhoid bacillus are made on agar slants, the twenty-four hour growth being then scraped off with the aid of a platinum needle and suspended in physiologic sodium chlorid solution. The bacilli in this suspension are then killed by heating for one hour at a temperature of 60 C., or by the addition of such bactericides as formaldehyd, phenol (carbolic acid) or thymol. The best method of preparing these suspensions is, perhaps, that of Hastings, which consists of a mixture of 5 c.c. of 5 per cent. phenol, 10 c.c. of glycerin, and 85 c.c. of 0.9 per cent. sodium chlorid solution, to which are added the organisms scraped from the surface of two twenty-four hour agar slant cultures of *Bacillus typhosus* (the bacilli being rubbed into the mixture with a spatula).

2. Widal reactions, made with the permanent sterilized suspensions of typhoid bacilli, give reliable results and have the advantage that the worker does not require an incubator, culture mediums or a microscope if he obtains his suspensions from a well equipped laboratory. Naturally, the macroscopic method must be employed with these killed suspensions, so that slight clumping of the bacilli may escape detection. When possible, the Widal test should be made with live active cultures rather than with the killed suspensions, as the reactions are sharper and, hence, have a tendency to be more reliable.

3. In examining the stool for amebas, one should be careful to obtain a proper type of stool. Such stools are thin and watery, containing mucus, blood and occasionally many pus cells. Portions of the mucus should be picked out and submitted to direct examination on a warm stage under a high magnification. If the stool is fresh and still warm, it is pos-

sible to obtain the characteristic "ameboid" motion. Musgrave and Clegg advise the administration of a saline cathartic and the later examination of the fluid portions of the stool for the amebas. Frequently, one may obtain better specimens for examination by examining mucus that is obtained with a rectal tube.

If one wishes to stain the preparation, the method of Darling gives good results. The dried smear is stained with Wright's stain in the usual way, followed with Giemsa's stain until the film has a purple cast. Then the slide is plunged into 60 per cent. alcohol to which from 10 to 20 drops of 10 per cent. ammonia have been added. Differentiation is continued in this way until the film has a violet color, when it is dried and examined. Donaldson advocates the use of a mixture of equal parts of (1) 5 per cent. aqueous solution of potassium iodid saturated with iodine, to which an equal volume of ether is added, and (2) a saturated aqueous solution of rubin S or of eosin. A loopful of the thin feces mixed with a few loopfuls of the foregoing mixture is placed on a glass slide and covered with a clean cover-glass.

#### FAT IN CALCIUM METABOLISM

To the Editor:—Please inform me through Queries and Minor Notes what rôle fat plays in calcium metabolism. Is it essential? Kindly omit my name.

MEDICUS, Texas.

ANSWER.—Several clinical researches have been published recently which bear more or less directly on the importance of fat in the absorption and metabolism of calcium by the body. Holt, Courtney and Fales, at the Rockefeller Institute, have shown that in infants the absorption of calcium varies with the intake, the fat content of the food being presumably the same in the thirty-three cases reported on. Findlay, Paton and Sharpe also found that the "utilization" (meaning the difference between the intake in the food and the excretion in the feces) "tends to vary directly with the supply in the food," whereas the last mentioned investigators state that an increase of milk fat does "not decrease the utilization of calcium in either normal or rachitic children," as asserted by some. Holt, Courtney and Fales state definitely that in infants the absorption of calcium varies with the amount of fat given, optimal absorption taking place when from 0.045 to 0.060 of calcium oxid was present in the food for every gram of fat with a total fat intake of not less than 4 gm. per kilogram. In children from 1 to 7 years of age, absorption of calcium was less dependent on the intake of fat of either animal or vegetable origin. No detailed account of the experiments was given which lead the authors to these conclusions. Telfer reports that an increase from 21.6 to 43.2 gm. of milk fat per day does not change the absorption of calcium in the body. For a more detailed account with bibliography, see:

Holt, L. E.; Courtney, A. M., and Fales, H. L.: Calcium Metabolism of Infants and Young Children, and the Relation of Calcium to the Fat Excretion in the Stools, *Am. J. Dis. Child.* **19**: 97 (Feb.) 1920; **19**: 201 (March) 1920.

Findlay, Leonard; Paton, D. N., and Sharpe, J. S.: Studies in Metabolism of Rickets, *Quart. J. Med.* **14**: 352 (July) 1921.

Telfer: *J. Physiol.* **54**: 105, 1920-1921.

**New York State Records Its Lowest Death Rate.**—The death rate of New York state for the year 1921 reached the new low level of 12.2 per thousand population, according to the statistics of the division of vital statistics of the state health department. For the year 1914 the rate was 14.7, and for 1920 it was 13.8. In terms of lives saved, the rate for 1921 means that approximately 16,000 more residents of the state are now living than would be the case if the death rate had not been reduced as indicated. New York City, with a death rate of 11.2, still retains its lead over the remainder of the state. In the up-state area, it is also of interest to note that the 1921 rate in cities was 12.6, as against 13.5 for the rural area. Commenting on these statistics, the health commissioner, Dr. Hermann M. Biggs, says: "Modern standards of public health administration in the state service and in the cities and other municipalities have unquestionably contributed in large measure to the gratifying result in the saving of lives, though it would be inaccurate not to take note of other great factors, such as the gradual improvement in living conditions and the general advance in education and intelligence. Broadly speaking, the reduction in death rate is a true index of progress in civilization."



Medical Education, Registration and  
Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, March 7. Sec., Dr. Harry C. De Vighne, Juneau.  
ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.  
CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.  
CONNECTICUT: New Haven, March 14. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.  
DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.  
HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.  
IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.  
IOWA: Des Moines, March 21-23. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.  
MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.  
MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.  
MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.  
MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEW HAMPSHIRE: Concord, March 9-10. Sec., Dr. Charles Duncan, Concord.  
NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.  
OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.  
RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.  
UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

Iowa November Examination

Dr. Rodney P. Fagen, secretary, Iowa State Board of Medical Examiners, reports the written examination held at Des Moines, Nov. 1-3, 1921. The examination covered 8 subjects and included 100 questions. An average of 75 per cent. was required to pass. Nine candidates were examined, all of whom passed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College.....	(1897)		89.1
University of Illinois.....	(1920) 87.3, (1921)* 89.9,		91.6
University of Louisville Medical Department.....	(1921)		86.6
Harvard University.....	(1902)		83.1
University of Minnesota.....	(1917)		91.3
St. Louis College of Physicians and Surgeons.....	(1910)		83.9
Cornell University.....	(1920)		87.8

Dr. Rodney P. Fagen, also reports that 34 candidates were licensed by reciprocity, Dec. 28, 1921. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery.....	(1911)		Illinois
College of Med. and Surg. (Physio-Medical) Chicago..	(1907)		Illinois
Hahnemann Medical College and Hospital, Chicago..	(1910)		Illinois
Loyola University.....	(1916, 2) Illinois,		Wyoming
Northwestern University.....	(1913)		Illinois
Rush Medical College.....	(1910)		Illinois
(1912) Minnesota, (1914), (1917) Illinois			
University of Illinois.....	(1915)		Wisconsin
(1916), (1919), (1920) Illinois			
University of Kansas School of Medicine.....	(1921)		Kansas
Louisville National Medical College.....	(1909)		Indiana
Detroit College of Medicine and Surgery.....	(1920)		Michigan
University of Michigan Homeopathic Medical School..	(1920)		Michigan
University of Minnesota.....	(1920)		Minnesota
St. Louis College of Physicians and Surgeons.....	(1903)		Missouri
St. Louis University School of Medicine..	(1919), (1920, 2)		Missouri
John A. Creighton Medical College.....	(1914)		Nebraska
University of Nebraska...	(1916), (1918), (1920, 2), (1921)		Nebraska
University of Cincinnati College of Medicine.....	(1920)		Ohio
Western Reserve University.....	(1912)		Ohio
University of Pennsylvania.....	(1898)		Penna.
University of West Tennessee.....	(1915)		N. Carolina

\* These candidates have finished the medical course and will obtain the M.D. degrees after they have completed a year's internship in a hospital.

Massachusetts November Examination

Dr. Walter P. Bowers, former secretary, Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Nov. 8-10, 1921. The examination covered 13 subjects and included 65 questions. An average of 75 per cent. was required to pass. Of the 48 candidates who took the physicians' and surgeons'

examination, 37, including 2 osteopaths, passed and 11, including 1 osteopath, failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Leland Stanford Junior University.....	(1917)		83.4
Yale University.....	(1907)		86.7
Loyola University.....	(1918)		77.2
Boston University.....	(1921)		75
College of Physicians and Surgeons, Boston.....	(1921)		75
Harvard Univ....	(1909) 81.7, (1919) 89.7, (1921) 79.5, 82.4, 84.5,		84.6
Middlesex College of Medicine and Surgery.....	(1920)		75,
(1921) 75, 76.8, 80.6, 84.5			
Tufts College Medical School.....	(1919) 79.7, (1920) 77.5, 78.1,		
(1921) 75.6, 79.1, 79.7, 81.2			
American Medical College.....	(1901)		75
St. Louis College of Physicians and Surgeons.....	(1921)		75
Hahnemann Med. College and Hosp. of Philadelphia...	(1920)		81.5
Medico-Chirurgical College of Philadelphia.....	(1902)		*
University of Pennsylvania.....	(1919)		77
Vanderbilt University.....	(1919)		80.3
University of Vermont.....	(1887) 75, (1914) 77.8, (1921)		81.3
Marquette University.....	(1917)		79.7
Royal College of Physicians and Surgeons, Ireland....	(1911)		89
University of St. Vladimira.....	(1904)†		76.7
Osteopaths.....			75, 75

College	FAILED	Year Grad.	Per Cent.
Kentucky School of Medicine.....	(1906)		72
University of Maryland.....	(1921)		71.6
College of Physicians and Surgeons, Boston.....	(1916)		69.8,
(1918) 73			
Middlesex College of Medicine and Surgery.....	(1918)		67.2,
(1919) 67.3, (1920) 72.6			
Laval University.....	(1903)		47.8
University of Geneva.....	(1915)†		61.6
Central Turkey College, Ottoman.....	(1919)†		54
Osteopath.....			69.3

\* No grade given.

† Graduation not verified.

Maryland December Examination

Dr. J. McP. Scott, secretary, Maryland State Board of Medical Examiners, reports the oral and written examination held at Baltimore, Dec. 13-16, 1921. The examination covered 9 subjects and included 90 questions. An average of 75 per cent. was required to pass. Of the 19 candidates examined, 16 passed and 3 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Howard University.....	(1920)		2
Johns Hopkins Univ..	(1917), (1919, 2), (1920, 3), (1921, 5)		11
Harvard University.....	(1919)		1
Jefferson Medical College.....	(1921)		1
University of Virginia.....	(1919)		1

College	FAILED	Year Grad.	Number
University of Maryland.....	(1917)		1
Medical College of Virginia.....	(1917)		1
University of Zurich.....	(1917)*		1

Dr. Scott also reports that from Sept. 29 to Dec. 16, 1921, 5 candidates were licensed by reciprocity. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University.....	(1915)		W. Virginia
Tulane University.....	(1919)		Mississippi
College of Physicians and Surgeons, Baltimore.....	(1914)		Dist. Colum.
Maryland Medical College.....	(1905)		Penna.
Medical College of the State of South Carolina.....	(1919)		W. Virginia

\* Graduation not verified.

Nebraska November Examination

Mr. H. H. Antles, secretary, department of public welfare, reports the written and practical examination held at Lincoln, Nov. 14-16, 1921. The examination covered 9 subjects and included 90 questions. An average of 70 per cent. was required to pass. Of the 7 candidates examined, 6 passed and 1 failed. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Bennett Medical College.....	(1912)		1
St. Louis College of Physicians and Surgeons.....	(1919)		1
John A. Creighton Medical College.....	(1915), (1921)		2
Cincinnati College of Medicine and Surgery.....	(1891)		1
Trinity Medical College.....	(1894)		1

College	FAILED	Year Grad.	Number
Lincoln Medical College.....	(1918)		1

Mr. Antles also reports that 16 candidates were licensed by reciprocity from Oct. 6 to Nov. 16, 1921. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists..	(1917) Washington,		California
American Medical Missionary College.....	(1900)		Wisconsin
Chicago Hospital College of Medicine.....	(1918)		Wyoming



Hahnemann Med. College and Hospital of Chicago..	(1920)	Illinois
Loyola University .....	(1918)	Wyoming
Northwestern University .....	(1908)	Illinois
Rush Medical College.....	(1917)	Illinois, Minnesota
State University of Iowa College of Med....	(1913), (1919)	Iowa
Tulane University.....	(1909)	Kansas
Harvard University .....	(1905)	New Jersey
University of Minnesota.....	(1906)	Minnesota
Central Medical College of St. Joseph.....	(1905)	Kansas
Meharry Medical College.....	(1918)	Tennessee

North Carolina December Meeting

Dr. Kemp P. B. Bonner, secretary, North Carolina State Board of Medical Examiners, reports that 18 candidates were licensed by reciprocity at the meeting held at Greensboro, Dec. 3, 1921. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Southern California.....		(1900)	California
Yale University .....		(1919)	Virginia
Georgetown University .....		(1911)	Dist. Colum.
Atlanta College of Physicians and Surgeons..	(1903),	(1912)	Georgia
Chicago College of Medicine and Surgery.....		(1915)	Illinois
Johns Hopkins University.....		(1917), (1918)	Maryland
College of Physicians and Surgeons, Baltimore.....		(1903)	S. Carolina
Long Island College Hospital.....		(1912)	New York
North Carolina Medical College.....		(1919)	Virginia
Miami Medical College.....		(1905)	Indiana
Starling Medical College.....		(1894)	R. Island
Jefferson Medical College.....		(1884)	Penna.
Woman's Medical College of Pennsylvania.....		(1889)	Mass.
Medical Coll. of the State of South Carolina..	(1901),	(1908)	S. Carolina
Medical College of Virginia.....		(1919)	Virginia

Virginia December Examination

Dr. J. W. Preston, secretary, Virginia State Board of Medical Examiners, reports the written examination held at Richmond, Dec. 13-16, 1921. The examination covered 8 subjects and included 80 questions. An average of 75 per cent. was required to pass. Of the 15 candidates examined, 14 passed and 1 failed. Six candidates were licensed by reciprocity. Three candidates were licensed on government credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
George Washington University.....		(1921)	86
Howard University .....		(1921)	87
University of Louisville Medical Department.....		(1921)	88.8
Tulane University .....		(1921)	84
University of Maryland.....		(1921)	87
Harvard University .....		(1921)	90
Cotner University .....		(1911)	79
Medical College of Virginia.....	(1918)	78, (1921)	79.8, 83
University of Virginia.....	(1919)	91.7, (1921)	91, 92
National University, Athens.....		(1906)*	85

FAILED			
Barnes Medical College.....		(1894)	66
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University.....		(1907)	Dist. Colum.
Johns Hopkins University.....		(1920)	Maryland
Lincoln Memorial University.....		(1913)	Tennessee
Jefferson Medical College.....	(1910)	Pennsylvania, (1920)	Tennessee
University of Pennsylvania.....		(1906)	N. Carolina

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Loyola University .....		(1916)	U. S. Navy
University of Louisville Medical Department.....		(1917)	U. S. Navy
University of Virginia.....		(1917)	U. S. Navy

\* Graduation not verified.

Ohio December Examination

Dr. H. M. Platter, secretary, Ohio State Medical Board, reports the oral, written and practical examination held at Columbus, Dec. 7-9, 1921. The examination covered 11 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 35 candidates examined, 30 passed and 5 failed. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University . . . . .		(1921)	89.9
University of Louisville Medical Dept.....		(1921)	76.1
Johns Hopkins University.....		(1921)	83.9, 86.8, 88.4
Harvard University . . . . .	(1916)	84.1, (1921)	87, 91.8
Eclectic Medical College.....		(1921)	75.1, 77.8
Western Reserve University.....	(1920)	85.8, (1921)	84.8, 86.1
Hahnemann Med. College and Hospital of Philadelphia..		(1921)	81.4
Jefferson Medical College.....	(1919)	81.8, (1921)	82.3, 87.6
University of Pennsylvania.....		(1921)	87.1
University of Pittsburgh.....		(1920)	88.5
Woman's Medical College of Pennsylvania.....		(1920)	89.9
Meharry Medical College.....	(1920)	76.4, 77.1, (1921)	75.8
Marquette University . . . . .		(1911)	76.2
McGill University . . . . .		(1921)	87.9

University of Budapest.....	(1909)*	84.7, (1917)*	75
University of Naples.....		(1914)*	77.2
University of Klausenberg.....		(1917)*	79.5
University of Zurich.....		(1911)*	75

FAILED

Howard University .....	(1920)	67.2
Loyola University .....	(1918)	71.7
Temple University .....	(1919)	72.4
Meharry Medical College.....	(1917)	67
University of Palermo.....	(1918)*	60.8

\* Graduation not verified.

Book Notices

X-RAYS AND RADIUM IN THE TREATMENT OF DISEASES OF THE SKIN. By George Miller MacKee, M.D., Assistant Professor of Dermatology and Syphilology, College of Physicians and Surgeons, Columbia University. Cloth. Price, \$9. Pp. 602, with 250 illustrations. New York: Lea & Febiger, 1921.

This work has been looked forward to with great anticipation, for MacKee has already written a new chapter in radiotherapy by establishing an indirect method of practically precise measurement of roentgen-ray exposures. The work which he has done in this is almost the only addition of certain value to radiotherapy in recent years. It has put the radiotherapy of at least skin diseases on a much more accurate footing than ever before. The book well justifies the expectations of it. It is thorough and complete. The most valuable parts are the chapters dealing with the physics and technic of roentgen-ray therapy, into which the author has gone with satisfactory fulness. In this part of the book he has given, first, a very careful statement of the physics of the subject which are fundamental to intelligent roentgen-ray therapy. He has then gone into the details of technic or roentgen-ray therapy, and in an equally satisfactory way. This part of the work contains much that is original, and gives the book a unique value. To this portion of it he has given almost exactly 50 per cent. of the book; and this large space is justified by the importance of the subjects. The second half of the volume is devoted to the consideration of therapeutic applications of radium and roentgen rays in various diseases. Here the author has considered the various diseases in which roentgen rays are useful, and has given a statement of the subject to which all conservative workers of experience in this field will subscribe in nearly all particulars. He has not given the therapeutic indications of roentgen rays and radium in a way that clearly shows why the agents are useful in those diseases in which experience has demonstrated their value. As these therapeutic indications have been analyzed in the past, and as their understanding is a matter of great importance to workers in this field, it seems regrettable that he has not seen fit to outline more clearly the reasons for the therapeutic uses. The book is excellently gotten up. Taking it all in all, it is an exceedingly valuable contribution to the subject. Dr. MacKee is to be congratulated on the work he has done in this field and the exposition of it that he has made. The book should be in the hands of all workers in roentgen-ray therapy.

OBSTETRICS AND GYNAECOLOGY. Edited by John S. Fairbairn, M.A., B.M., B.Ch., Obstetric Physician, St. Thomas's Hospital. Cloth. Price, \$20. Pp. 950, with 175 illustrations. New York: Oxford University Press, 1921.

This is practically a one volume system, edited by Dr. Fairbairn and contributed to by many British obstetricians and gynecologists of note. The book is printed two columns to a page, the page style resembling somewhat that of THE JOURNAL. The usual subjects are covered completely; among the unusual articles are those on "The Infant," and in the section on "Public Health, Social and Medicolegal." Here special sections are devoted to the rôle of obstetrics in preventive medicine, maternity and infant welfare centers, and industrial occupations and the health of women workers. As is well known, British practice differs in many details from that followed in America. Many of the authors have, however, appended to their articles bibliographic references to American contributions, and call attention to these variations. The volume is intended particularly for the general practitioner rather than for the medical student.



## Medicolegal

### Rights of State Above Those of Physician

(*Lawrence v. Briry et al. (Mass.), 132 N. E. R. 174*)

The Supreme Judicial Court of Massachusetts, in overruling exceptions to the dismissal of a petition for a writ of prohibition, says that the petitioner was duly licensed and registered as a practitioner in medicine, and that the defendants were the members of the board of registration in medicine. The board had summoned him before it to show cause why his certificate of registration should not be revoked for "gross misconduct in the practice of his profession," with specification of entering into an agreement on a designated date to perform or to attempt to perform an abortion on a person named. The petitioner contended that if guilty of that charge his certificate of registration could not be taken away because he had not been convicted of any crime. His main contention, however, was that Chapter 218 of the Statutes of 1917, under the authority of which the board was acting, was unconstitutional, and that the board was without jurisdiction to revoke his registration and license to practice medicine. The essential provisions of that chapter are that the board may, after a hearing, "revoke or cancel any certificate, registration, license or authority issued by the board if it appears that the holder . . . is guilty of deceit, malpractice, gross misconduct in the practice of his profession, or of any offense against the laws of the commonwealth relating thereto," such revocation or cancellation not to affect other punishment provided by law; that there shall be a hearing before the board at which the practitioner may appear with witnesses and counsel; that the board shall not defer action until the conviction of the person accused; and that the supreme judicial court may revise and reverse the order of the board on appropriate proceedings to that end.

The right to follow a legitimate calling for any lawful purpose is sacred and is protected both by the constitution of the United States and by that of Massachusetts. The right of a physician to toil in his profession, as well as the right of all other citizens to labor in their chosen work, is both liberty and property, partaking of the nature of each, and is guaranteed by constitutional mandate from unwarrantable interference. But this right with all its sanctity and safeguards is not absolute. It must yield to the paramount right of government to protect the public health by any rational means.

Soundness of moral fiber to insure the proper use of medical learning is as essential to the public health as medical learning itself. Mere intellectual power and scientific achievement without uprightness of character may be more harmful than ignorance. Highly trained intelligence combined with disregard of the fundamental virtues is a menace. A physician, however skilful, who is guilty of deceit, malpractice, or gross misconduct in the practice of his profession, even though not amounting to an offence against the criminal laws, well may be thought to be pernicious in relation to the health of the community. It is for the legislature to determine within reasonable limits, in the exercise of the police power, what the tests shall be for moral character sufficient to enable one to continue in the practice of medicine. The statute in this particular is not open to objection. The circumstance that the petitioner already had been registered and given a certificate to practice medicine gave him no immunity against future legislation of the nature embodied in Chapter 218. He had no vested right to prey on society by the exercise of deceit, malpractice, or gross misconduct in the practice of his profession. His license to practice constituted no contract of that nature.

There was nothing in the contention that the amendment of Chapter 218 by Section 296 of Chapter 257 of the Statutes of 1918 gave any protection to the petitioner. The validity of the statute is within the authority of numerous decisions, and the conclusion here reached is in harmony with that of numerous other state courts on a precisely similar point. No discussion is needed to show that the specification charged in

the notice was within the terms of the statute, and if found to be true would warrant, if it would not require, the revocation of the license to practice. The statute afforded every reasonable safeguard to protect the rights of the petitioner by requiring a hearing at which he might be present with witnesses and counsel, and providing also for hearing in court and revision and reversal of the finding of the board, if justice demanded such action.

### Not Liable for Using Roentgen-Ray Static Machine

(*Street v. Hodgson (Md.), 115 Atl. R. 27*)

The Court of Appeals of Maryland, in affirming a judgment in favor of the defendant physician, says that he was charged with negligence in the use of a roentgen-ray machine in treating the left leg of a patient for eczema. At the defendant's request, the jury was instructed that if the patient had suffered from eczema for several years, and had been treated by numerous physicians for that disease, which failed to yield permanently to such treatments, but got better and then worse at times, and in October, 1918, began treatment by the defendant, who used a roentgen-ray static machine, then, if the defendant employed the proper apparatus and the usual and ordinary methods, and in the treatment acted as a reasonably competent and skilful physician using ordinary care, the verdict must be for the defendant, notwithstanding that the leg got worse, so that, after treatment by several other physicians, it became necessary to amputate the leg, and the patient finally died, in September, 1920. Even if the jury believed from the evidence that the patient received from the roentgen-ray machine a burn on the leg, yet if the jury further believed that the defendant had the skill and knowledge of a reasonably competent physician using reasonable care in the use of such a machine in the treatment of such conditions, that, in his treatment of the leg, he used the care required of a skilful and competent physician, and that the method of treatment was proper, he was not liable for any injury due merely to an error of judgment on his part. The degree of care and skill to be exercised by the defendant was not the highest known to the medical profession, but that reasonable degree of care and skill which reasonably competent and skilful physicians ordinarily exercise in the treatment of their patients by roentgen ray from a static machine; and the burden of proof rested on the plaintiff to establish by preponderating evidence a want of such ordinary care and skill in the treatment of this patient. The jury could not infer from the fact alone that the leg was burned that the defendant failed to treat the patient with ordinary care and skill. A physician, in undertaking the treatment of a case by roentgen ray from a static machine, cannot be held to insure a good result or to benefit the patient. If the patient suffered from chronic squamous eczema and was treated as stated, making little or no improvement; and was then treated by another physician with the roentgen ray produced by a transformer machine, and subsequently developed pemphigus, and died thereof; and the jury could not find from a preponderance of the evidence which of said diseases or treatment caused the injury complained of, and the minds of the jurors were in equipoise on that question, the verdict must be for the defendant.

As it was a question of the safety of the machine, and not of its efficiency, and as there was no testimony that it was not safe when properly used, but, on the contrary, all the experts testified that it was all right, so far as safety was concerned, when used with proper safety devices, the defendant was not required to submit to the jury any issue involved in the exercise of care and knowledge in the selection of a machine. The instruction that the jury could not infer negligence from the fact alone that there was a burn still left the jury entirely free to say whether, in its opinion, it was negligence to use the static machine, as the defendant did, without a meter, and without protecting the leg; and whether the burn, assuming there was a burn, was due to the failure to use a meter and protection for the leg.

The precise question as to whether the jury was properly instructed that it could not infer negligence from the fact of the burn alone, or whether the maxim, *res ipsa loquitur*,



"the matter speaks for itself," applies to such an occurrence, has not been decided by this court, and in the few cases elsewhere in which it appears to have been decided the decisions are not harmonious. At any rate, in the absence of evidence from which, without speculating, the jury could draw a reasonable inference from the mere occurrence of such an accident, it should not be permitted to infer negligence from the occurrence alone.

#### Bonesetter a Practitioner of Medicine

(*Commonwealth v. Dragon (Mass.)*, 132 N. E. R. 356)

The Supreme Judicial Court of Massachusetts, in overruling exceptions in two cases against the defendant, says that on separate complaints he was found guilty of holding himself out as a practitioner of medicine, and of practicing medicine without being lawfully authorized so to do. The only questions raised by the exceptions were whether there was evidence justifying the jury in finding that he did so hold himself out and did practice in Ware. It appeared that a man named Lak, who lived in Ware, suffered a simple fracture of the tibia and fibula of his left leg, and for two days was under the care of a local physician. Then the defendant, who lived in another place, but was known in Ware, went to Ware to seek Lak relative to his injury. He examined the injured leg and found that it was fractured. He then set it. In doing this he used an external application of the consistency of cream, cotton, splints, cloth bandages and adhesive tape plaster. He told Lak that after forty days' rest the leg would be all right. He then, on request, examined Lak's ankle and knee and said that the ankle and the kneecap were out of joint. He remedied, or purported to remedy, these troubles, and left with the injured man a small bottle of the medicine which had been applied to his leg. In response to an inquiry by Lak, he said that he would be in town in about two weeks, that he had an office in a certain hotel, and that anybody could come and see him, and he could let Lak have more of the medicine. There was a second visit made, and the defendant was paid \$35 for the first one, and \$5 for the second. The defendant had been engaged in business for twenty-five years; had offices in three other places, and went to Ware, where he used a room in a hotel as an office. There was no evidence that he displayed any signs in Ware. He did not argue that the services rendered were casual or without the usual course of his calling, but stated the question of law involved to be: "Does a bonesetter require a license, under the Massachusetts law, as one who is engaged in the practice of medicine or surgery?" He supplemented this with the contention that, under Section 8 of Chapter 76 of the Revised Laws, there is a distinction between medicine and surgery and that the statute does not provide for the punishment of one who practices surgery unless the practice is under a false or an assumed name. But if the jury found that he, for hire, diagnosed Lak's injury and treated it in the manner described, his conviction of practicing medicine without registration was required by the statute. His conviction of the offense of holding himself out as a practitioner of medicine contrary to Section 8, as amended, was well warranted, if he had been engaged in the practice of bonesetting for 25 years in various places, had represented that he was qualified to perform such services, and had a room in Ware, which he said was his office, in which he transacted that business; and if he rendered the described services to Lak.

The statute under which these proceedings were instituted provides for the registration of physicians and surgeons. It does not permit their separate examination. The examinations for registration for all applicants must include anatomy and surgery, and are required to be "sufficiently thorough to test the applicant's fitness to practice medicine." The statute makes it a criminal offense not only for a person to hold himself out as a practitioner of medicine and to attempt to practice medicine in any of its branches, but to practice medicine and surgery under a false or assumed name or under a name other than that of which he is registered. The words "practitioner of medicine" and "practice of medicine in any of its branches," as used in the statute, include the practitioner and the practice of surgery. While the practice of medicine in a strict sense may be divided into various

branches, it includes the art of remedying the results of violence and accident by setting fractured bones. This result is within the reason of the Massachusetts decisions and is required by the statute notwithstanding both physicians and surgeons are referred to therein.

#### Carpenter Developing "Housemaid's Knee" an Accident

(*Standard Cabinet Co. v. Landgrave (Ind.)*, 132 N. E. R. 661)

The Appellate Court of Indiana, Division No. 2, holds that when a man who had been in the employ of a cabinet company for about 19 years as a carpenter was set to scraping and polishing floors in the home of the president of the company, which required him to work on his knees, and, after he had been doing it for six or seven days, developed bursitis or what is sometimes called "housemaid's knee," the finding of the industrial board that he received a personal injury by accident, arising out of and in the course of his employment, was justified. The court says that it need not consider whether such disease is or is not an occupational disease; for, if it be conceded that it is in the nature of such, compensation may nevertheless be allowed, if it is contracted under such conditions as to constitute an accidental injury, as found in this case.

## Society Proceedings

### COMING MEETINGS

Alabama, Medical Association of the State of, Birmingham, April 20-23.  
Conference on Medical Education, Hospitals and Public Health, American Medical Association, Chicago, March 6-10.  
Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.  
Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27.  
Nebraska State Medical Association, Omaha, April 24-27.  
New Mexico Medical Society, Gallup, April 28-29.  
New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.  
North Carolina, Medical Society of the State of, Winston-Salem, April 25-27.  
South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.  
Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.

### CHICAGO MEDICAL SOCIETY

Regular Meeting, held Feb. 15, 1922

The President, DR. JOHN S. NAGEL, in the Chair

#### Some Newer Phases of Vitamin Studies

DR. A. D. EMMETT, Chairman of the Nutritional Committee of the American Chemical Society, Detroit: There are more research laboratories and institutions working intensively, directly or indirectly, on vitamin studies at present than on any other one subject. Primarily, I believe that so much emphasis is being placed on this subject because of the tremendous impetus that was put on nutrition by the World War, when it was realized, as never before, that of basic and fundamental importance is nourishment in relation to health, vigor, disease and recuperation. The peculiar and unique place which nutrition occupies in the application of therapeutics today is being recognized more and more by the physician and surgeon, the dentist, the nurse and the dietitian.

A perfect food contains proteins, carbohydrates, fats, mineral salts and vitamins. The proteins must be of the right kind and must be adequate in order to supply the amino-acids. The mineral salts must be of the right kind and in proper ratio to one another. These must have the proper supply of calcium, magnesium, potassium, chlorin, phosphorus, etc. There is no definite chemical way of determining whether vitamins are present or absent in our diet, and the only way at present is to feed animals under definite conditions, to bring about in animals a definite pathologic condition, and in turn feed the animals, after they have been brought into that pathologic condition, with a certain preparation of foods



to see whether the animals can be restored back to normal. It is recognized that we must have three types of vitamins—A, B and C—and then we have a complete food. If we withhold vitamin A, we have an incomplete food. On the other hand, if we put back vitamin A and remove vitamin B, we have an incomplete food. If we withhold vitamin C, the food is incomplete, but if all three of the vitamins are given to the animal, it will grow normally. (Tables were presented showing the different vitamins used in feeding animals and birds, and how such diseases as beriberi, polyneuritis, xerophthalmia, keratomalacia, xerosis and rickets are produced by a lack of one or more of the vitamins in the diet. Live birds and animals were exhibited showing different stages of development of these diseases, and how by putting such animals and birds back on a diet consisting of the proper vitamins they are again restored to normal.)

The medical profession should give more attention in the future to diet and nutrition along with the therapeutic treatment of patients, bearing in mind that vitamins are only one of the factors to be considered.

#### DISCUSSION

DR. W. H. WELKER: I would call attention to the importance of educating the patient's appetite. I have tried to do a little of this in connection with some metabolic work I have done, and I have found it to be the most difficult type of education that one can undertake. There are many persons who live to eat, and unless the food they propose to eat meets with their ideas of taste and variety they are not inclined to eat it. With a patient it is a still more difficult proposition. McCollum has repeatedly stated that we have largely eliminated the accessory food factors from our diets through perverted appetites. That being the case, it is now the function of the medical profession to train back the appetite of people along normal channels.

Another thing that is necessary in discussing diets with patients is that they should have some idea of quantity. Lean or undernourished patients, when asked about the quantity of food they eat, say that they eat considerably more than the fat person in the family, and the obese individual is always ready to swear that he eats practically nothing, yet he keeps on gaining. With proper education of the appetite, and a content of reasonable quantity of accessory food substances, and with a rational quantity of the different basic foods, nutrition can be fairly well handled.

DR. A. J. CARLSON: One difficulty in isolating some of these deficiency symptoms supposed to be due to a lack of sufficient vitamins lies in the fact that most of these animals start to eat less and less, and some of the symptoms, like atrophy of the testicles, loss of weight and edema, can be duplicated in the same animals by starvation or the withdrawal of food, when a comparable loss of weight has been secured. Regarding the so-called fat soluble A, one has to go through very laborious and strenuous chemical processes to get that vitamin out from the foods, so that one can actually get a diet free from fat soluble A. For some animals, at any rate, there is enough fat soluble A in skimmed milk or protein precipitated from skimmed milk, and one must purify the casein again and again to get the vitamin out so as to produce the symptoms of deficiency of that particular vitamin. Xerophthalmia is not as clear cut as some authors would like to have it. For instance, very few investigators have succeeded in getting anywhere near 100 per cent. eye symptoms in a diet as free as possible from vitamin A. A diet may be given until the animal dies without the appearance of any eye symptoms. No one knows the exact composition of these vitamins, or how they work. It is known, however, that they will produce certain effects, direct or indirect. Under the circumstances, the proper course for the medical profession to pursue is not to encourage the giving of vitamins in pill form, but to go back to first principles and correct the diet.

DR. C. H. FARMER: Physicians should not be swept off of their feet by what I would term the vitamin infection. It is essential to take care of the general diet, and with the general diet take up the vitamins. There should be such selection of food that a sufficient amount of these vitamins may be

included. The proper selection of food is the function of the dietitian.

DR. J. J. MOORE: Many ailments can be produced by the lack of certain vitamins in the food. No one knows how much vitamin a human being needs. Apparently an infant needs very little more of the antiscorbutic vitamins than a small guinea-pig weighing 150 gm. (2,315 grains). While a guinea-pig may need 5 c.c. ( $1\frac{1}{3}$  fluidrams) of orange juice a day, a baby will get along nicely on 10 c.c. ( $2\frac{3}{4}$  fluidrams) of orange juice a day. To the three well known vitamins, vitamin D is now being put before the profession, and probably there will be suggested another vitamin for pellagra. I would urge a proper selection of diet rather than the taking of vitamins in the form of pills or capsules.

DR. JULIUS H. HESS: One of the strongest facts brought out in these studies in recent years is the result obtained by studying the effects of age on food and the oxidation of food. It has been my practice ever since certified milk has been adopted in Chicago to recommend it, and I think the strongest argument in favor of it is the result obtained by various observers. There is a rapid diminution of the vitamin content in all heated milk on standing for a given length of time. During the last few months there has been propaganda against certified milk in Chicago, and I believe it is worth while to try and keep this product on the market with that one idea in view. Short boiling of milk for a few hours before feeding is of great benefit as compared with the long aging of commercial pasteurization. This applies to the selection of other foods for infants and children. I have worked out the antiscorbutic content of the vitamin products on the market and can only substantiate what has been said. In feeding to guinea-pigs two or three times the amount of these products recommended for an infant, I have found that the guinea-pigs have all developed scurvy without exception.

DR. JOHN A. WESENER: I think that the term "food accessories," as suggested by McCollum, is far superior to vitamins, as little or nothing is definitely known about the chemistry of these vitamins, and what they really are is problematic. McCollum at one time denied the antiscorbutic element, and said that scurvy in guinea-pigs is due to constipation, and that when he gave these animals liquid petrolatum or phenolphthalein the scurvy disappeared. Again, McCollum believes that the lack or absence of vitamin A is the cause of rickets, but at present he has receded from that position, and further, that "fat soluble A is found in milk, and every one, if possible, should drink a quart of milk a day." The American race is not drinking enough milk. I do not think that vitamin A is the factor in the causation of rickets. The medical profession knows that a wholesome and complete ration does not prevent rickets. It requires more than this, namely, sunlight and good hygiene, plus lime and phosphorus. Cod liver oil seems to be almost a specific, but all the other factors just stated must be presented. According to McCollum, 50 per cent. of vitamin A is found in skimmed milk, and the other 50 per cent. is in the cream. Xerophthalmia is a disease which I believe is due to the lack of vitamin A in the food. It is well known by physicians and pathologists that starvation and an improperly balanced diet may bring about this condition, even in the presence of much vitamin A.

DR. A. D. EMMETT, Detroit: Investigators in this field should be reasonably conservative in drawing deductions. They should not make radical statements that this or that vitamin will accomplish this or that result. I am convinced that lack of fat soluble A will produce eye symptoms. If there is a lack of vitamin B, the animal will get symptoms different from those produced by a lack of soluble A; but if all three vitamins are used there will be perfect normal development. Scurvy is undoubtedly a dietary disease. According to Hess, tomato juice is quite active in the water soluble C factor, and if a reasonable amount of it is used in infants suffering from scurvy, it will correct the condition or prevent its further spread. Under certain conditions of malnutrition, and in the wasting diseases specifically, I believe there is a place for the proper use of vitamins in concentrated form, provided they have been tested out and are physiologically reacting.



# Current Medical Literature

## AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

### American Journal of Medical Sciences, Philadelphia

February, 1922, 163, No. 2

- Cause and Control of Dyspnea in Disease of Lungs. G. W. Norris, Philadelphia.—p. 157.
- \*Nature and Treatment of Chronic Nephrosis. A. E. Epstein, New York.—p. 167.
- \*Prevalence of Free Hydrochloric Acid in Cases of Carcinoma of Stomach. H. R. Hartman, Rochester, N. Y.—p. 186.
- \*Relation of Acromegaly to Thyroid Disease. J. M. Anders and H. L. Jameson, Philadelphia.—p. 190.
- \*Epileptoid or Fainting Attacks in Hypopituitarism. L. P. Clark, New York City.—p. 211.
- \*Urea Concentration Test. D. R. Black, Kansas City, Mo.—p. 218.
- Biliary Tract Disease. B. B. V. Lyon, H. J. Bartle and R. T. Ellison, Philadelphia.—p. 222.
- \*Diagnosis of Peritonitis and Peritoneal Transudates in Infants by Means of Abdominal Puncture with Capillary Tube. B. S. Denzer, New York.—p. 237.
- Pneumonia and Empyema in Children. E. Glenn-Ravdin, Philadelphia.—p. 246.
- \*Unknown Forms of Arteritis; Their Relation to Syphilitic Arteritis and Periarteritis Nodosa. F. Harbitz, Christiania, Norway.—p. 250.
- \*Postoperative Dietotherapy. W. T. Vaughan and N. H. Van Dyke, Richmond, Va.—p. 273.
- \*Addison's Disease; Case of Tuberculosis of Suprarenals. R. S. Keilty, Danville, Pa.—p. 282.

**Thyroid Therapy of Chronic Nephritis.**—In conformity with the view that chronic nephrosis is a metabolic disease related to a state of hypothyroidism, Epstein has used thyroid gland therapy in a number of cases resistant to usual treatment and with gratifying results. The effect of thyroid feeding in some cases of nephrosis was so striking that Epstein is convinced as to the relation of thyroid deficiency to this disease. The frequent occurrence of nephrosis in children and the usual gravity of the condition in such cases suggest the possibility of its being due to a deficiency of some factor in the food—possibly a vitamin. The diet proposed by Epstein consists in the feeding of a high protein, fat free, carbohydrate poor diet. The protein is to replace the protein lost by way of the urine so as to increase the osmotic force of the blood. The fat free carbohydrate poor part of the diet is to compel the body to utilize the protein as well as the lipoids which are present in the blood stream.

**Free Hydrochloric Acid in Stomach Cancer.**—Five hundred and fifty-one cases of stomach cancer are analyzed by Hartman with reference to the degree of acidity. In 51.85 per cent. of the pyloric lesions achlorhydria was present and the pyloric end of the stomach is not supposed to possess any acid forming cells that could be destroyed by a new growth. In 5.5 per cent. of the pyloric lesions the values were hyperacid. In the cardiac portion, the location of the acid forming cells, the achlorhydria was 61.54 per cent. and the hyperacid values 5.12 per cent. The location of the lesion apparently does not materially influence the degree of the acidity. Only 53.72 per cent. of the patients had achlorhydria; 15.78 per cent. had free hydrochloric acid in small amount. In 17.42 per cent. the gastric acidity was normal and 4.58 per cent. had hyperacid values. The sum of the last two figures shows that 21.95 per cent., or more than one case out of five, had normal or hyperacid values. About two out of five cases had a certain amount of free hydrochloric acid. The occasional marked difference between free and total acidity occurs particularly in pyloric lesions.

**Thyroid Function Affected in Acromegaly.**—Modifications of the function of the thyroid have been observed by Anders and Jameson in two cases of acromegaly. The use of thyroid extract in small doses has been remarkably effective for good. Not only has there been a marked subsidence of all of the myxedematous features, but the headaches, speech and nervous irritability have also been greatly relieved. The bony skeleton, however, has remained stationary. Literary studies have revealed an associated disturbance of the thyroid function in 33 per cent. of cases of acromegaly. Hypothyroidism is more commonly associated with acromegaly than hyper-

thyroidism, and those combined cases which manifest myxedematous features are decidedly improved as the result of the use of thyroid preparations.

**Epileptoid Attacks in Hypopituitarism.**—Clark asserts that there are a number of rapidly growing adolescents who have relatively benign fainting attacks which at first seemingly simulate larval forms of petit mal epilepsy. They are to be differentiated from this latter condition by the absence of the epileptic disorder. The syncopal states are but a part of the obscure clinical picture of dyspituitarism, in which there appears to be an excessive functioning of the anterior lobes of the pituitary gland. Coincident with the fainting attacks may be low blood pressure, slow pulse, vasomotor ataxia and a host of defective muscular and skeletal displacements. In the psychical sphere one may encounter not infrequently character delinquencies and slow mental development. The line of corrective treatment is physical plus the administration of specific glandular substance. Mild cases recover of their own accord by gradually restoring the glandular and physical balance, but they can be materially helped by proper direction and rest.

**Urea Concentration Test.**—Black's experience with this test leads him to believe that in high blood pressure cases beginning kidney dysfunction may be noted at an earlier date with this test than with the function tests commonly used.

**Abdominal Puncture Aids Diagnosis of Peritonitis.**—Five cases of peritonitis are presented by Denzer in which abdominal puncture and the capillary tube were of service in establishing the diagnosis. The same method has revealed free fluid in the peritoneal cavity of cases of rickets and marasmus. These observations on peritoneal inflammations and transudates are important because they indicate that a procedure which demonstrates minute amounts of fluid in the peritoneal cavity may be helpful in answering many questions of practical and experimental interest—the initial response of the peritoneum to infectious and other irritants, the question of peritoneal absorption and the therapeutic use of serums in pneumococcic infections.

**Unknown Forms of Arteritis.**—Harbitz considers periarteritis nodosa a definite disease due to a distinct virus. While the clinical picture may be variable, depending on the distribution of the lesions in the arteries, the lesion concerns a specific disease. Forms of true arteritis occur more frequently than is usually believed; they apparently differ etiologically, and they present anatomic appearances that make the differential diagnosis difficult, this being particularly true of the vascular changes in syphilis, periarteritis nodosa and also in tuberculosis.

**Postoperative Dietotherapy.**—The postoperative dietaries in use at St. Elizabeth's Hospital, Richmond, Va., and described by Vaughan and Van Dyke are made up on a basis of 2,000 calories with a protein intake slightly below 1 gm. per kilogram of average body weight. The feedings on all four diets are administered every two hours. The authors emphasize that in postoperative treatment the diet must be individualized. Every patient is a law unto himself. The patient's likes and dislikes should always be consulted and agreeable food substituted for that which is distasteful.

**Addison's Disease; Tuberculosis of Suprarenals.**—This report covers a case of Addison's disease presenting the characteristic clinical symptoms of progressive weakness associated with bronzing of the skin. Pathologically, the case presented a typical localized and focalized tuberculosis of both suprarenals with an arrested apical pulmonary tuberculosis of a probable unassociated nature. The direct smear from the suprarenal showed the presence of tubercle bacilli in large numbers. Animal inoculation with crushed material from the suprarenal produced experimental tuberculosis from which tubercle bacilli were obtained in culture.

### American Journal of Public Health, Chicago

February, 1922, 12, No. 2

- Work of League of Red Cross Societies Typhus Research Commission to Poland. F. W. Palfrey, Boston.—p. 87.
- Situation Abroad as Regards Typhus Fever and Other Epidemic Diseases and Possibility of Their Importation into United States. H. S. Cummings, Washington, D. C.—p. 91.



- European Health Conditions. C. E. A. Winslow, Geneva, Switzerland.—p. 94.
- Prevention of Tuberculosis Based on Relation of Tuberculosis in Infancy and Childhood to Tuberculosis in Adult Life. A. K. Krause, Baltimore.—p. 101.
- Prevention and Cure of Rickets by Sunlight. A. F. Hess, New York.—p. 104.
- Simplicity in Preparation of Blanks and Forms. C. H. Lerrigo, Topeka, Kans.—p. 116.
- Simple Method for Anerobic Cultivation in Petri Dishes. S. Morse and N. Kopeloff, New York.—p. 119.
- Report of the Committee on Bathing Places. G. W. Simons, Jr.—p. 121.
- Correlation of Stream Pollution Criteria from Studies of Naugatuck and Hockanum Rivers in Connecticut. J. F. Jackson, Hartford, Conn.—p. 124.
- Detroit's Experience with Undernourished School Children. G. T. Palmer, Detroit.—p. 134.
- First Report of Committee on Municipal Health Department Practice of American Public Health Association, November, 1921. L. I. Dublin.—p. 138.

### Boston Medical and Surgical Journal

Feb. 9, 1922, 186, No. 6

- \*Reconsideration of Dyspepsias. F. W. Palfrey, Boston.—p. 165.
- Aeration of Posterior Accessory Sinuses in Acute Optic Neuritis. L. E. White, Boston.—p. 172.
- \*Perforated Gastroduodenal Ulcers. Their Treatment. J. J. Hepburn, Boston.—p. 180.
- \*Stiff Fingers. F. J. Cotton and E. J. Sawyer, Boston.—p. 183.
- Aid Which the State Offers in Control of Tuberculosis Through Sanatoria and Consultation Clinics. E. R. Kelly, Boston.—p. 185.

**Dyspepsia.**—Palfrey points out the hitherto little recognized source of gastric distress existing in an abnormal valvelike action of the cardiac orifice which deserves further study. Patients complaining of sour stomach and heartburn not due to hypersecretion or to catarrhal or to alcoholic gastritis are frequently benefited by bile or bile salts when given in coatings which will not be dissolved in the stomach. Palfrey suggests that for medical progress clinicians should not depend solely on the fully developed teachings of laboratories and hospitals, but should constantly follow and ponder over the teachings of the medical sciences in relation to their own observations in practice with the hope of developing new practical methods.

**Treatment of Perforated Gastric Ulcer.**—Eight cases are cited by Hepburn in which the perforation was closed and a posterior gastro-enterostomy was done. The patients recovered. The interval between the occurrence of the rupture and the operation varied from three to thirty hours. In one case a cholecystectomy was also done. Hepburn urges the adoption of posterior gastro-enterostomy in the treatment of these cases.

**Treatment of Stiff Fingers.**—Twenty-four hour traction, by miniature winches or by pull of elastic bands, traction exerted in the line of deformity to produce a distraction of joint surfaces, with very gradual change of the line of pull toward flexion or toward extension as the case demands, Cotton and Sawyer claim, will so supplement ordinary physiotherapy methods or so displace them that stiff hands and fingers may possibly come to be rare and come to be regarded as perhaps a reflection on the treatment of the case rather than as the result of the "Act of God" clause under which surgeons perhaps, even like the express companies, are a little too much inclined to explain their losses.

### California State Journal of Medicine, San Francisco

February, 1922, 20, No. 2

- Operative Treatment of Strabismus. W. S. Franklin and W. D. Horner, San Francisco.—p. 39.
- Urologic Diagnosis. G. F. Farman, Santa Barbara, Calif.—p. 43.
- Tonsillectomy. J. W. Green, Vallejo, Calif.—p. 45.
- Inadequate Personality with Special Reference to Its Influence on Both Diagnosis and Treatment. R. Moore, Los Angeles.—p. 46.
- Specialist and His Obligation to Profession. G. G. Reinle, Oakland.—p. 48.
- Report of Work of Radium Department of University of California Hospital, Between April, 1920, and April, 1921. L. R. Taussig, San Francisco.—p. 50.
- Stricture of Urethra in Women. W. E. Stevens, San Francisco.—p. 51.
- Pre-Ataxic Gastric Crises of Tabes. C. Fishbaugh, Los Angeles.—p. 53.
- Gastro-enteroptosis. H. L. Hayes, Palo Alto.—p. 55.
- \*Ameba as Cause of Second Great Type of Chronic Arthritis. L. W. Ely, A. C. Reed and H. A. Wyckoff, San Francisco.—p. 59.

- Occurrence of Endamoeba Dysenteriae in Bone Lesions in Arthritis Deformans. C. A. Kofoed and O. Swezy, Berkeley.—p. 59.
- Fallacy of Usual Tests for Swimming Pools. J. W. Robinson, Los Angeles.—p. 60.

**Ameba Cause of Arthritis.**—By the second great type of arthritis Ely and his associates mean that form of arthritis hitherto described by the Germans as arthritis deformans, by the English as osteo-arthritis, by Goldthwait as hypertrophic arthritis by Nichols and Richardson as degenerative arthritis, and by other writers under various titles. This is the senile form of arthritis, the chronic rheumatism of the elderly. For want of a better name some writers have called it metabolic arthritis. Some time ago the conception of the relationship of ameba to this problem was suggested by Dr. J. V. Barrow of Los Angeles, who had been working with C. A. Kofoed, and who had found *Endamoeba histolytica* (sive dysenteriae) in the stools of one of Ely's patients. Since then the authors have pursued this line of investigation. A full report of their investigations will be published at a later date. Paraffin sections of the bone in the region of necrotic areas from this type of arthritis were cut, from 4 to 8 microns thick. Stained by the standard iron-hematoxylin method, the sections showed organisms identified as *Endamoeba histolytica*. These organisms were abundant in the region of necrotic areas in the marrow, but not actually in the necrotic areas. They were especially abundant in the immediate vicinity of the capillaries.

### Delaware State Medical Journal, Wilmington

October, November, December, 1921, 12, No. 4

- Edema Bullosum of Bladder. H. S. Miller, Wilmington.—p. 3.
- Roentgen-Ray as a Therapeutic Agent. I. Burns, Wilmington.—p. 4.
- \*Three Obstetrical Rarities. W. Wertenbaker, Wilmington.—p. 8.

**Abdominal Pregnancy with Live Child.**—Wertenbaker reports a case of abdominal pregnancy in which a live child was delivered one year ago. The child is still living and well. The second case was one of complete, premature separation of the placenta at the sixth month of pregnancy. The unusual feature in the third case lies in the fact that the second of twins, presenting by the vertex in occipitoposterior position, should remain impacted just within the pelvic brim for more than forty-eight hours without spontaneous rotation or expulsion, although the pains were quite vigorous.

### Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1922, 8, No. 7

- Early Diagnosis of Carcinoma of Cervix. W. M. Rowlett, Tampa.—p. 111.
- State Board of Health and Its Bureaus. G. A. Dame, Jacksonville.—p. 114.
- Suprarenal and Thyroid Insufficiency. A. J. Wood, St. Petersburg.—p. 119.
- Syphilis as Public Health Factor. J. D. Gable, Washington, D. C.—p. 123.

### Illinois Medical Journal, Oak Park

February, 1922, 41, No. 2

- Serious Menace and a Way Out. E. H. Ochsner, Chicago.—p. 81.
- Management of Fractures Near Joints. P. H. Kreuzer, Chicago.—p. 88.
- God Give Us Men. Maternity Bill. T. U. Sisson, Winona, Miss.—p. 93.
- Actinomycosis: Diagnosis and Treatment. P. A. White, Davenport, Ia.—p. 99.
- Use of Fluoroscope for Reducing Fractures. G. L. McWhorter, Chicago.—p. 102.
- Management of Abdominal Wall Infections. A. M. Miller, Danville, Ill.—p. 104.
- Common Error in Describing Composition of Human Semen. C. E. M. Fischer, Chicago.—p. 106.
- Chronic Infections. F. G. Dyas, Chicago.—p. 108.
- Systemic Infections Due to Oral Sepsis. C. E. Bentley, Chicago.—p. 110.
- Abnormalities of Mastoid with Especial Reference to Facial Nerve. C. W. Hawley, Chicago.—p. 116.
- Focal Infection with Especial Reference to Apices of Teeth. F. S. O'Hara, Springfield.—p. 118.
- Nose, Throat and Ear as Foci of Infection. M. W. Brucker, Chicago.—p. 120.
- Focal Infections from Surgical Standpoint. C. U. Collins, Peoria, Ill.—p. 123.
- Role of Focal Infections on Nervous System. C. B. King, Chicago.—p. 125.
- Such Things Cry Aloud for Investigation for Welfare of Our Great Country. L. D. Volk, Brooklyn.—p. 129.



## Indiana State Medical Association, Fort Wayne

January, 1922, 15, No. 1

- \*Bacteria Recovered Postmortem: Selective Localization and Focal Infection. A. R. Barnes and A. S. Giordano, Rochester, Minn.—p. 1.
- Trachoma or Folliculosis Among School Children. J. A. Stucky, Lexington, Ky.—p. 7.
- \*Case of Eclampsia with Forty-Two Convulsions. W. D. Gatch and W. D. Little, Indianapolis.—p. 13.
- Physician; Some Newer Tendencies in Preventive Medicine. F. B. Wynn, Indianapolis.—p. 15.

**Bacteria Recovered Postmortem.**—Bacteria recovered by Barnes and Giordano from various locations at necropsy, including foci of infection, exhibited selective localizing power in animals. This selective localizing power has been demonstrated in eleven of thirteen morbid conditions, comprising cases of nephritis, gastric ulcer, encephalitis and primary peritonitis. It is emphasized that the specialist may render an opinion concerning the pathology in a suspected focus of infection, but conclusions as to its importance and treatment are to be left in the hands of the internist. Careful control of the clinician's and specialist's judgment concerning foci by following up their cases and, if possible, supplementing their knowledge by bacteriologic study and animal experimentation will endow their opinions with the greatest value. Early discoveries of foci and their removal yield the most satisfactory results. Long continued insult may result in irreparable damage or a self-perpetuating process in a given structure. In such cases a guarded prognosis must be given, although the patient should be given the benefit of a possible cure.

**Eclampsia with Forty-Two Convulsions.**—A woman, aged 30, near the middle of the ninth month of her second pregnancy had five convulsions within seven hours. Each convulsion had been more severe than the preceding one and the intervals between were successively shorter. Six weeks prior to admission to hospital she had had an attack of influenza which had been followed by a marked albuminuria. At the age of 10 and again at 12 she had had a facial paralysis of the right side, of the lower neuron type. As a child she had been obese but had become thin at the establishment of catamenia at 14. The acute attack was ushered in by a suddenly developing headache, epigastric pain and blurred vision, followed by the convulsions. Pelvic examination revealed a cervix which was undilated and rigid. Cesarean section was considered preferable to any method of vaginal delivery. A living baby was obtained, but respirations were initiated only after considerable difficulty. Phlebotomy was resorted to after some hours had elapsed and more convulsions had occurred. In all 1,200 c.c. of blood was withdrawn. In order to replenish the blood volume, 625 c.c. of whole blood was given, from the husband, by the Kimpton-Brown method. Subsequent to the cesarean section there were no convulsions for two hours, during which time the patient roused sufficiently to inquire about the baby. Beginning after two hours and continuing for thirty hours there were thirty-seven convulsions. In the last two hours of the period there were rapidly recurring seizures of from one to three minutes' duration, with intervals of from four to six minutes of coma. Once during this time the rectal temperature rose to 107.3 F. It was combated by means of ice packs and ice enemas. After the cessation of the convulsions there was profound coma for forty-eight hours, followed by a gradual recovery of mental and muscular powers. Aphasia, which was present at first, gradually cleared, although slowly. A paralysis of the right arm and leg changed to a weakness, and finally there was complete restoration of function. The patient was discharged on the fortieth day after admission. The child is vigorous and healthy. The mother's mind was not recovered completely. At the present time, two and one-half years after the illness, her mentality is about that of a child of 12 or 14.

## Johns Hopkins Hospital Bulletin, Baltimore

February, 1922, 33, No. 372

- \*Immunologic Reactions of Bence-Jones Proteins. I. Differences Between Bence-Jones Proteins and Human Serum Proteins. S. Baynes-Jones and D. W. Wilson, Baltimore.—p. 37.
- \*Yaws: Analysis of 1046 Cases in Dominican Republic. W. L. Moss and G. H. Bigelow, Cambridge, Mass.—p. 43.
- \*Studies on Case of Chronic Acid Nephritis. R. H. Major, Detroit, Mich.—p. 56.

Adaptation of Bacteria to Growth on Human Mucous Membranes with Special Reference to Throat Flora of Infants. A. L. Bloomfield, Baltimore.—p. 61.

- \*Dermoid Cysts of Ovary. Report of Four Cases. K. H. Martzloff, Baltimore.—p. 66.

**Immunologic Reactions of Bence-Jones Proteins.**—A crystalline Bence-Jones protein was used by Jones and Wilson for immunologic studies. By crystallization it could be freed from possible traces of serum proteins and thus permitted the use of a purified preparation to obviate the confused results which vitiate many immunologic experiments. Its quality as an antigen was easily established, and the reactions dependent on its antibodies were unequivocal. In contrast to this, the noncrystalline preparations of Bence-Jones proteins, precipitated from the urine by fractionation with salts or heat, gave the "cross" reactions usually obtained with mixed antigens. Comparisons between the Bence-Jones proteins of normal human serum were made by the use of precipitin, complement fixation and anaphylactic reactions. The precipitin reactions were extended by the method of the absorption of antibodies and the anaphylactic reactions were submitted to analysis by the Schultz-Dale method of the graphic record of the contraction of smooth muscle. The results of all these experiments were in accord, and allow the following conclusions to be drawn: (1) The crystalline Bence-Jones protein acts as a single antigen. (2) The noncrystalline preparation of Bence-Jones proteins, isolated from the urine by salting-out or other precipitation methods, contain traces of serum proteins. (3) The Bence-Jones proteins are immunologically different from the proteins of normal human serum. (4) These differences between proteins from the same animal are further evidence in support of the conception that the specificity of proteins is not dependent upon their biologic origin, but due to their chemical constitution.

**Yaws.**—At the request of the military government of the Dominican Republic the School of Tropical Medicine, Harvard University, sent a commission consisting of Drs. A. W. Sellards, W. L. Moss and G. H. Bigelow to Santo Domingo during the summer of 1920 to study yaws. The results of the observations made are herewith presented in abstract.

**Pathology of Chronic Acid Nephritis.**—In the case of chronic acid nephritis studied by Major the kidney lesion present was that of a pure tubular nephritis. No edema was noted clinically and no anasarca or ascites was present at necropsy. No symptoms of uremia were present, and the patient during the greater part of his illness felt comparatively well. The urine output following a temporary depression was high, but the urine itself was of low specific gravity and the excretion of nitrogen, chlorids, phosphate, creatinin, uric acid and urea was markedly diminished. Glycosuria appeared from time to time but it bore no apparent relationship to the amounts of blood sugar present. The study of blood chemistry showed very high values for urea, inorganic phosphates, amino-acids and creatinin and values higher than normal for uric acid. Determinations of the carbon dioxide content of the blood plasma showed definite evidence of acidosis which responded promptly to alkali therapy.

**Dermoid Cysts of Ovary.**—The four cases reported by Martzloff were: (1) A small dermoid cyst accidentally discovered by needling an enlarged ovary. (2) A large dermoid of the left ovary; a small dermoid cyst of the right ovary. (3) A dermoid cyst in the wall of a large multilocular ovarian cystadenoma. (4) A spinal cell carcinoma developing in a dermoid cyst of the ovary.

## Journal of Infectious Diseases, Chicago

February, 1922, 30, No. 2

- Metabolism of B. Welchii, Vibrio Septique, B. Fallax, B. Tertius, B. Tetani, B. Pseudo-Tetani, B. Botulinus, B. Bifermentans, B. Oedematis, B. Aerofoetidus, B. Sporogenes, B. Histolyticus and B. Putrificus. Studies in Bacterial Metabolism, XLIV-LV. A. I. Kendall, A. F. Day and A. W. Walker, Chicago.—p. 141.
- Significance and Quantitative Measurement of Nitrogenous Metabolism of Bacteria. Studies in Bacterial Metabolism, LVII. A. I. Kendall, Chicago.—p. 211.
- Nitrogenous Metabolism of B. Dysenteriae (Shiga) Bacillus Typhosus, B. Paratyphosus Alpha and B. Paratyphosus Beta. Studies in Bacterial Metabolism LVIII-LXI. A. I. Kendall and R. C. Haner, Chicago.—p. 225.



- Nitrogenous Metabolism of *Bacillus Coli*. Studies in Bacterial Metabolism. LXII. A. I. Kendall and R. S. Bly, Chicago.—p. 237.
- Nitrogenous Metabolism of Schmitz *Bacillus*. Studies in Bacterial Metabolism LXIII. A. I. Kendall, R. C. Haner and R. S. Bly, Chicago.—p. 245.
- Nitrogenous Metabolism of *Bacillus Alkaescentis*. Studies in Bacterial Metabolism LXIV. A. I. Kendall and A. A. Day, Chicago.—p. 248.
- Nitrogenous Metabolism of *Bacillus Proteus*. Studies in Bacterial Metabolism LXV. A. I. Kendall, H. C. Cheetham and C. S. Hamilton.—p. 249.

### Kentucky Medical Journal, Bowling Green

February, 1922, 20, No. 2

- Federal Care of Veterans of World War. M. Board, Louisville.—p. 89.
- Tuberculosis of Spine. R. T. Pirtle, Louisville.—p. 93.
- Progress of Preventive Medicine. W. J. Shelton, Mayfield.—p. 99.
- Gunshot Wound of Abdomen Followed by Sulphuric Abscess: Continued Report. C. Farmer, Louisville.—p. 104.
- Pellagra. B. E. Giannini, Kenner.—p. 105.
- Urethral Obstruction: Urinary Retention and Extravasation. Case Report. O. Grant, Louisville.—p. 110.
- Treatment of Acute Mastoiditis. D. M. Griffith, Owensboro.—p. 111.
- Indications for Simple Mastoid Operation. H. G. Reynolds, Paducah.—p. 113.
- New Uses for Endoscopy. C. E. Purcell, Paducah.—p. 118.
- Associated Diseases of Eye and Nasal Accessory Sinuses. C. DeWeese, Lexington.—p. 121.
- Chicken Bone in Rectum. Case Report. B. C. Frazier, Louisville.—p. 124.
- Diagnosis and Treatment of Diphtheria. J. F. Dunn, Arlington.—p. 124.
- Neurosyphilis: Case Report. S. G. Dabney, Louisville.—p. 126.
- Blood Pressure. B. S. Rutherford, Bowling Green.—p. 126.
- Radiation in Pelvic Disease. D. Y. Keith, Louisville.—p. 128.
- Medical Science and Medical Societies. E. Barr, Owensboro.—p. 131.
- Diagnosis of Peripheral Nerve Injuries: Preliminary Report on Course of Recovery and End Results. C. C. Coleman, Richmond, Va.—p. 132.
- Vital Statistics and Medicine. S. R. Roberts, Atlanta, Ga.—p. 138.

### Medical and Chirurgical Faculty of Maryland Bulletin, Baltimore

December, 1921, 14, No. 3

- Electrochemical Theory of Normal and Certain Pathologic Processes with Clinical Applications. G. W. Crile.—p. 21.

### Medical Record, New York

Feb. 11, 1922, 101, No. 6

- Chronic Arthritis. L. W. Ely, San Francisco.—p. 223.
- Treatment of Cases of Ulcerative Colitis. A. Bassler, New York.—p. 227.
- Synergistic Analgesia; Its Administration in Operative Gynecology. J. M. Rector, Jersey City, N. J.—p. 230.
- Use and Abuse of Local Support, Also Motor Reduction in Human Readjustment or Orthokinetics. J. M. Taylor, Philadelphia.—p. 232.
- Recent Fractures of Nose; How to Diagnose and Treat Them. W. W. Carter, New York.—p. 237.
- \*Endocrine Aspect of Female Sterility. A. Jacoby, New York.—p. 239.
- Antecedent Function of Tonsil. J. A. Hagemann, Pittsburgh.—p. 241.

**Endocrine Aspect of Female Sterility.**—It is apparent that the chief factor in the production of sterility is a dysfunction of the ovary. A careful examination of the individual will usually reveal the gland or glands responsible for or participating in the ovarian deficiency, which are usually the pituitary, thyroid and suprarenals. The dysfunction of one or the other or several of these glands produces conditions which make it impossible to carry through the entire sequence of pregnancy from ovulation to embedding and growth of the ovum. That these conditions may be improved by the use of the proper gland extracts is certain. Cases are cited by Jacoby to call attention to a large class of cases which heretofore were either dilated or curetted or subjected to mutilating operations on the cervix, or else were put off in the hope that nature would ultimately effect the desired result. Every case of sterility in which gross pathologic conditions can be excluded warrants a careful study of the individual with a view to determining any malfunction of the endocrine system and the use of the indicated extracts for prolonged periods. In this way many a sterile female may become fecund, a result gratifying alike to patient and physician and a distinct asset to humanity.

### New Jersey Medical Society Journal, Newark

February, 1922, 19, No. 2

- Importance of Careful Diastolic Blood Pressure Observations in Cardio-renal Diseases; Report of Cases. C. L. Andrews, Atlantic City.—p. 33.
- Coordination Need for Future Progress in Public Health. C. V. Crasster, Newark.—p. 39.

- Lincoln and His Relations to Doctors. E. W. Markens, Newark.—p. 44.
- False Cults. W. G. Bailey, Camden.—p. 47.
- \*Familial Epistaxis with and Without Skin Lesions. H. I. Goldstein, Camden, N. J.—p. 50.
- Case of Uterine Inversion. M. A. Swiney, Bayonne, N. J.—p. 51.

**Familial Epistaxis.**—Goldstein adds three cases of familial epistaxis to those previously reported. A father, son and daughter were affected. The father's past history is negative, except that he has had frequent attacks of nose bleed for many years. In the past three or four years he has been complaining of severe headaches, particularly a left hemi-crania. He had several telangiectatic lesions, one or two on the neck and about thirty-five or forty pigmented spots, dark brown in color, scattered over the neck, trunk and arms. The daughter, aged 8, had thirty-seven small brownish spots scattered over the trunk, neck and legs. One small telangiectatic spot about two inches below the right ear on the side of the neck and one at exactly the same distance below the left ear. Numerous very fine dilated capillaries (arborescent and spiderlike) were present over both cheeks, and a few dilated capillaries were seen over the left nasal ala. One dilated capillary was visible over the sternal end of the right clavicle and one over the right shoulder. There were some visible capillaries over the space between the left scapular spine and vertebrae. The son, aged 6, had a pale pink nevus on the back of the neck, a "birthmark" over the middle of the back and twenty-eight brownish spots scattered over the body, resembling dark pigmented freckles. There was one area of dilated capillaries over the left cheek.

### Southwestern Medicine, Phoenix, Ariz.

February, 1922, 6, No. 2

- Cardiac Irregularities. E. A. Newton, Los Angeles.—p. 39.
- \*Unusual Lung Infections. G. B. Gilbert, Colorado Springs, Colo.—p. 43.
- Radiation in Pelvic Cancer. A. Soiland, Los Angeles.—p. 47.
- Tuberculosis Patient; As a Surgical Risk. G. E. Yount, Prescott, Ariz.—p. 49.
- Problems in Antituberculosis Work. C. O. Giese, Colorado Springs, Colo.—p. 56.
- \*Diaphragm in Physical Diagnosis. E. A. Duncan, El Paso, Tex.—p. 62.
- Treatment of Syphilis. C. S. Vivian, Phoenix, Ariz.—p. 66.
- Protective Medical Measures. Z. Causey and J. F. Martin.—p. 69.

**Aspergillosis and Blastomycosis of Lung.**—Gilbert reports cases of aspergillosis, blastomycosis, streptothricosis and syphilis of the lung.

**Signs of Inflammation of Diaphragm.**—Exclusion of diaphragmatic inflammation Duncan states is necessary in the diagnosis of acute surgical diseases of the abdomen. Pain in the diaphragm or its serous coats is referred to the neck when the central portion of the dome is involved, and to the lower thorax when the irritation is at the outer diaphragmatic margin.

### Surgery, Gynecology and Obstetrics, Chicago

February, 1922, 34, No. 2

- Synovial Membrane Tumors of Joints. F. W. Hartman, Temple, Texas.—p. 161.
- Carcinoma of Prostate. B. S. Barringer, New York.—p. 168.
- Medical Education. J. B. Deaver, Philadelphia.—p. 177.
- Closure of Abdomen without Drainage after Cholecystectomy and Cholecystotomy. H. M. Richter, Chicago.—p. 180.
- Relative Merits of "Ideal Cholecystotomy," Cholecystectomy and Cholecystostomy. A. M. Willia, Richmond, Va.—p. 183.
- Thyrototoxicosis. J. M. Blackford, Seattle, Wash.—p. 185.
- \*Histology and Mortality in Tumor of Bladder. A. J. School, Rochester, Minn.—p. 189.
- Dilatation of Colon Simulating Hirschsprung's Disease. J. A. H. Magoun, Rochester, Minn.—p. 198.
- Multiple Primary Carcinoma of Pylorus and of Ectopic Gallbladder. M. A. Rubin, Stockholm, Sweden.—p. 201.
- Ureteral Stricture in Female. M. N. Wynne, Minneapolis.—p. 208.
- \*Tuberculous Appendicitis: Report of Case. A. H. Noehren and T. Mueller, Buffalo.—p. 215.
- Abdominal Surgeon of Future. T. S. Cullen, Baltimore.—p. 217.
- \*Thrombosis of Oviducal Segment of Utero-Ovarian Artery. Review of Literature. F. D. Smythe, Memphis.—p. 220.
- Insufficiency (Eventration) of Diaphragm. W. Lerche, St. Paul.—p. 224.
- \*Choice of Operation in Inguinal Hernia. P. G. Skillern, Philadelphia.—p. 230.
- \*Familial Occurrence of Undescended Testes. B. C. Corbus and V. J. O'Connor, Chicago.—p. 237.
- \*Carcinoma of Bladder with Bone Metastases. H. L. Kretschmer, Chicago.—p. 241.
- \*Sarcosporidiosis Involving Bone. S. M. Cone, Baltimore.—p. 247.



- \*Umbilical Cord. J. P. Gardiner, Toledo, Ohio.—p. 252.  
Rupture of Uterus During First Stage of Labor. W. C. Swayne, Bristol, England.—p. 257.  
Technic of Operations on Thyroid. G. W. Crile and W. E. Lower, Cleveland.—p. 258.  
\*Closure of Large Hernial Defects in Upper Abdomen. R. E. Farr, Minneapolis.—p. 264.  
Treatment of Fracture of Neck of Femur with Abduction Traction Splint. L. S. Kemo, Canton, Mass.—p. 266.  
Electrical Breast Pump. B. Van Hoosen, Chicago.—p. 268.  
\*Traumatic Synovitis of Knee Joint: Its Treatment. R. F. Metcalfe, Fort Sam Houston, Texas.—p. 271.  
Treatment of Pregnancy Complicated by Valvular Heart Disease. N. S. Heaney, Chicago.—p. 272.

**Tumors of Bladder.**—Two hundred and sixteen cases of bladder tumor are analyzed by Scholl. Of 168 epithelial tumors removed at operation three were benign papillomas. The three patients are alive on an average of five years after operation. There were seventy-one malignant papillomas and ninety-four solid carcinomas. Forty-five of the patients with malignant papilloma are alive on an average of three years and three months since their operation in contrast to twenty-seven of the patients with solid carcinoma who are alive on an average of two years and three months. The incidence of recurrence following operation on patients for solid carcinoma is much greater than that for malignant papilloma. Squamous cell carcinomas of the bladder are extremely malignant and rapidly fatal. Adenocarcinomas are about as severely malignant as papillomas. Simple angiomas of the bladder may grow very large. Generally myomas occur in young persons. Sarcoma is probably the rarest and most malignant of vesical tumors. It occurs in middle aged persons, metastasizes extensively, and has a tendency to recur rapidly. The one sarcoma in the series was seen at an inoperable stage.

**Tuberculous Appendicitis.**—In the case reported by Noehren and Mueller the absence of temperature elevation and the feeling of a mass were of interest. Both are characteristic of the hyperplastic type of tuberculosis although even in this there is usually some afternoon temperature. With the pulmonary lesion, the normal temperature, the mass, the absence of rigidity and the chronicity of the condition, the diagnosis ought to be made with a reasonable amount of confidence.

**Thrombosis of Oviducal Segment of Utero-Ovarian Artery.**—The symptoms in Smythe's case led to a preoperative diagnosis of ectopic pregnancy, left tube, with rupture or abortion. On entering the peritoneal cavity it was observed that the cavity was entirely free from blood. The uterus was larger and more vascular than normal. The right tube and ovary were normal. The left tube was three times its normal size, was greatly congested and very red. The fimbriated extremity was closed though the ostium was not sealed by adhesions. The left broad ligament was edematous and very much thickened. The left ovary was about the size of a hen's egg, prolapsed and lying very close to the uterus, on the left side. The left tube and ovary with a good portion of the upper part of the broad ligament was removed. Section of the ovarian artery, beginning in the thick portion of the broad ligament, showed a blood clot, which could be traced throughout the entire length of artery contained in the specimen. The clot was fairly hard and apparently partially organized.

**Operation for Inguinal Hernia.**—The essential features of the operation practiced by Skillern are free exposure and thorough cleaning of Poupart's ligament, Gimbernat's ligament, the triangular fascia, the pubic head of the rectus enclosed in the linea semilunaris, the linea semilunaris itself and the aponeurosis extending laterally from it; firm reconstruction obtained by developing a finger-like cylinder of the musculo-aponeurotic tissue just mesial to and above the thinned out conjoined tendon and internal oblique muscle fibers, suturing this cylinder to Gimbernat's and Poupart's ligaments from the pubic bone to beyond the internal ring, fastening the lower flap of external oblique aponeurosis down on the cylinder and the upper flap down on the lower, thus imbricating the two flaps and taking the strain away from the first row of sutures; bringing the cord out somewhat lateral to the internal ring, preventing constriction of it and transposing it to the surface of the imbricated external oblique flaps; and finally obliteration of dead spaces by suturing the edges of the fibrous deep layer of the superficial

fascia to each other and down on the imbricated external oblique aponeurosis. The postural method advocated by Lyle, which relieves tension both during and after the operation, should be practiced.

**Familial Undescended Testes.**—The cases of six brothers with testicular anomalies are reported by Corbus and O'Connor. Father and mother were normal in every way. One sister is normal; a second sister gives evidence of endocrine disturbance of sex character.

**Carcinoma of Bladder with Bone Metastases.**—Three of Kretschmer's five cases showed that bone metastases can occur relatively early. Cystoscopic examination showed tumors that were relatively small and that from the cystoscopic appearance were ideal cases for wide resections. These three cases further demonstrated clearly the necessity for careful roentgen-ray studies of all cases of carcinoma of the bladder for the presence or absence of bone metastases before the patient is subjected to an extensive operation, since the uselessness of operating in such cases is apparent. The same statement is true if a course of radium treatment is decided on. Necropsies were performed in three of these cases and metastases were found in the skin, in the glands in the perivesical fat, in the bony pelvis; in the ribs; in the mesenteric, retroperitoneal, inguinal and tracheobronchial glands, in the spine and in the liver.

**Sarcosporidiosis Involving Bone.**—A painless swelling of the right thigh and left humerus was found to be caused by a sarcosporidium. The bone tumors proved to be bone cysts containing many sarcosporidia. Cone reproduced the disease experimentally in animals. He describes the parasite in all of its forms from the round, oval, sickle-shaped, nucleated and nonnucleated, granular or hyaline sporozoites to the elongated or round and oval sporocysts containing sporozoites. The chambered form first described by Miescher was also seen. In Cone's case the involvement was primarily in muscle, the bone being secondarily invaded. It would appear that the invasion was from the popliteal region as there was no bone remaining between the popliteal vessels and the cyst. It would appear that the bone destruction was similar to what occurred in Virchow and Kanzow's case, being due to direct pressure and action of the parasite's growth. There is no evidence of purulent involvement of bone or soft parts.

**Umbilical Cord.**—The literature on this subject was analyzed by Gardiner and his conclusions are based on 35,712 cases. The average length of the normal umbilical cord is 55 cm. Any cord under 32 cm. is an absolutely short cord and any cord over 32 cm. and under the average length is a relatively short cord. In a vertex presentation, the placental insertion of the cord must not be farther than 5 cm. above the superior strait in order that the fetus be born without traction on the umbilical cord, and the cord must be 32 cm. in length. In a breech presentation, in order that the fetus be born without traction on the umbilical cord, the cord must be 55 cm. in length. In a vertex presentation with a loop of the cord about the neck, in order that the fetus be born without traction of the umbilical cord, the cord must be 76.50 cm. in length. In a vertex presentation with a coil of the cord about the neck, in order that the fetus be born without traction on the umbilical cord, the cord must be 93.50 cm. in length. In a breech presentation with a loop of the cord about the neck, the loop becomes a spiral and very little needs to be added to the length of the cord. In a breech presentation with a coil of the cord about the neck, in order that the fetus be born without traction on the umbilical cord, the cord must be 101.50 cm. in length. The etiology of the coiling of the cord is not yet known but it is generally accepted that excessive liquor amnii, a long cord, a small sized fetus and the activity of the fetus are factors which make for coiling of the cord. There is a coiled cord in every 5.5 births.

**Closure of Large Abdominal Defects.**—A flap composed of pectoral fascia and a considerable amount of muscle has been used by Farr to effect a perfect closure of an abdominal defect.

**Treatment of Traumatic Synovitis of Knee Joint.**—Forty-eight hours after the injury Metcalfe aspirates the knee joint until no more serum or blood is obtained. The leg is then



put in extension, on the inclined plane. In nine or ten days, the extension is removed, and the patient is allowed to get up and to start walking. In a large majority of cases, this ends his treatment. He is returned to duty by the end of the thirteenth or fourteenth day and does not come back on account of further swelling of the knee.

### FOREIGN

Titles marked with an asterisk (\*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

#### British Journal of Surgery, Bristol

January, 1922, 9, No. 35

- Tube Skin Flap in Plastic Surgery. H. P. Pickerill and J. R. White.—p. 321.  
 Tube Flap and Tube Graft in Facial Surgery. H. P. Pickerill.—p. 321.  
 Use of Tube Pedicled Skin Graft in Surgery of Limbs. J. F. White.—p. 326.  
 \*Surgical Pathology of Hypernephroma: Origin and Symptomatology. H. W. S. Wright.—p. 338.  
 \*Pseudocoxalgia. H. Platt.—p. 366.  
 Nonunion of Fractures. H. J. Waring and E. T. C. Milligan.—p. 408.  
 Carcinoma of Jejunum and Ileum. Report of Cases. R. Johnson.—p. 422.  
 \*Ligation of Innominate Artery for Innominate Aneurysm. C. Ballance.—p. 438.  
 Radical Cure of Inguinal Hernia in Children; Embryonic Rests Found Associated with Sacs. A. MacLennan.—p. 445.  
 Restoration of Nose by Transplantation of Skin from Forehead in 1881. T. P. Teale.—p. 449.  
 Gastric Crises of Tabes Dorsalis: Surgical Treatment. R. C. Shawe.—p. 458.  
 Case of Multiple Pulsating Bone Tumors. J. R. White.—p. 458.  
 Circulus Vitiosus for Fourteen Years after Gastro-Enterostomy. W. G. Spencer.—p. 462.  
 Torsion of Gallbladder. H. Lett.—p. 464.  
 Torsion of Hydatid of Morgagni. G. H. Colt.—p. 464.  
 Congenital Stricture of Anus Persisting into Adult Life: Acquired Megalocolon. G. Robertson.—p. 465.  
 Chronic Duodenal Ileus. P. Lockhardt-Mummery.—p. 467.

**Hypernephroma.**—Wright's paper represents part of a research into the pathology of tumors arising in the renal cortex of man and animals. Thirteen cases were investigated. By far the commonest initial symptom was hematuria. In eleven out of these thirteen cases it ushered in the disease. The hematuria is of two kinds. In some cases it is due to chronic interstitial nephritis caused by the pressure of the slowly advancing growth. It is not very profuse in amount, and it is intimately mixed with the urine. It is probably caused by venous congestion, pressure of the advancing growth blocking the smaller veins and leaving the lumen of the arteries intact. The second type of hematuria is much more profuse and is also associated with the passage of clots and renal colic. It is due to direct involvement of the pelvis by the growth, or to the invasion of one of the larger veins in the renal cortex. The next most common symptom is pain. In some form or other it occurred in eight of the thirteen cases. It may be divided into three types: (1) renal aching caused by distention of the pelvis, common to all renal conditions in which blockage of the outlet occurs; (2) renal colic associated with the passage of clots down the ureter, and (3) acute attacks of pain in the kidney, the result of a large hemorrhage into the growth. Colic in varying grades of severity occurred in five of the thirteen cases. Other patients had severe pain which was probably due to the passage of blood down the ureter, but it did not amount to true colic. Retention and difficulty of micturition occurred four times in this series. Frequency of micturition was twice mentioned. A tumor was palpable in ten cases. In diagnosis cystoscopy is of the greatest value. It rarely reveals any abnormality in the bladder, but blood can be seen coming from the affected kidney if the examination is made during an attack. The author has found that the indigocarmin test, in addition to the urea test, is one of the most useful for estimating the function of a single kidney. Two c.c. of a 0.4 per cent. solution of indigocarmin is injected into a vein. It should appear from the ureteric orifice of a normal kidney within ten minutes of the injection. The results of treatment are not very encouraging. Wright puts forward the view that the appearance usually labeled hypernephroma is a product of the malignant change of renaltubules, and forms one of the ways in which they react to a neoplastic stimulus.

**Pseudocoxalgia.**—Pseudocoxalgia, or osteochondritis deformans juvenilis coxae, is regarded by Platt as a definite entity representing the reaction of the metaphyseal region of the upper end of the femur to the stimulus of an infective agent of attenuated virulence. The condition is comparable with the one seen solely in adolescents, and which represents the reaction of the hip joint to an infective agent of a similar type. The whole cycle of radiographic changes is peculiar to pseudocoxalgia alone. They precede and outlast the clinical phenomena. The final picture is dominated by the deformation of the head of the femur, which is enlarged and flattened. The acetabulum in its final form can no longer contain the whole of the expanded head. Deformation of the head of the femur with flattening and expansion is seen also in conditions distinct from pseudocoxalgia during childhood. There is no evidence to show that in these conditions the typical structural osseous changes of pseudocoxalgia have preceded the stage of flattening. At certain stages the clinical and radiographic pictures of the two groups of affections may show considerable resemblance. This applies particularly to cases of primary tuberculous osteomyelitis of the femoral neck. In the conditions known as tarsal scaphoiditis (Köhler's disease), and apophysitis of the tibial tubercle (Osgood-Schlatter disease), bony changes parallel to those in pseudocoxalgia are found. Conservative treatment directed toward the elimination weight bearing has no proved influence on the train of morbid changes, but its application is indicated during the stage of prominent symptoms. Operative treatment directed toward the removal of the dominant lesion has no present place in the therapeutics of this disease.

**Ligation of Innominate Artery.**—Ballance emphasizes that there are cases of innominate aneurysm which are suitable for proximal ligation, and that these can be diagnosed with the means at present at our disposal. Distal ligation causes the aneurysm to become a diverticulum of the aorta, and so increases the pressure within it, and should not be done when proximal ligation is possible. The presence of the aneurysm necessitates removal of a part of the sternum in order to gain a free and clear exposure of the vessel below the aneurysm. The ligation of the innominate may be accomplished safely and surely if the ligatures are tied in a stay-knot without rupturing the coats.

#### British Medical Journal, London

Feb. 4, 1922, 1, No. 3188

- \*Some Aspects of Abdominal Emergencies of Childhood. J. Fraser.—p. 173.  
 \*Fats in Relation to Genesis of Goiter. R. McCarrison.—p. 178.  
 \*Recognition of Aortic Incompetence. E. M. Brockbank.—p. 181.  
 \*Treatment by Rest of Acute Infection of Knee Joint. J. O'Connor.—p. 182.  
 \*Case of Jejuno-colic Fistula Following Gastro-Enterostomy. C. Frankau.—p. 184.  
 \*Serologic Investigation of Oriental Sore. W. H. McKinstry.—p. 185.  
 Treatment of Rat Bite Fever with Novarsenobillon. N. Briggs.—p. 185.  
 Arthritis Deformans as Deficiency Disease. G. C. Belcher.—p. 186.  
 Resuscitation After Apparent Death. A. H. Southam.—p. 186.  
 Intractable Vomiting Due to Cerebral Syphilis. R. H. Hodges.—p. 187.

**Abdominal Emergencies of Childhood.**—The common clinical conditions which Fraser discusses here as constituting the "acute abdominal emergencies of childhood" are: acute appendicitis, pneumococcal peritonitis, intussusception, acute intestinal obstruction, volvulus and strangulated hernia.

**Fats as Cause of Goiter.**—The facts brought forward by McCarrison as bearing on the problem of the genesis of goiter, indicate that the composition of the food has an important bearing on it; that the food must be considered both in relation to its content of available iodine and in relation to its content of fats; that the thyroid may enlarge not only from insufficient intake of iodine (a comparatively rare occurrence), but from relative insufficiency of iodine consequent on the presence of an excess of certain edible fats or of free fatty acid (oleic) in the digestive tract; that the food must be considered in relation not only to the normal processes of digestion but in relation to abnormal processes that may arise from the introduction of bacteria into the digestive tube; and that variations in histologic types of goiter may result from variations in the composition of a goiter inducing food. They provide, too, a new point of view



from which to consider the genesis of simple goiter, of sporadic goiter, and of exophthalmic goiter.

**Diagnosis of Aortic Incompetence.**—When a heart is enlarged, and beating regularly, or fairly regularly, and at a moderate rate, and there is no increase of blood pressure, Brockbank asserts aortic valvular disease must be suspected and auscultatory evidence sought for, not only over the aortic cartilage but also down the left border of the sternum, and especially over the tricuspid region of the precordia where the earliest evidence of aortic incompetence is most likely to be found.

**Rest in Treatment of Infected Knee Joint.**—O'Connor protests against any form of movement in acute septic arthritis until the microbic fight has terminated. This period may be recognized by the cessation of discharge, pain, tenderness, fever and accelerated pulse; then, and not until then, he advocates encouraging the patients to move the knee joint, gently, once or twice daily, and gradually to increase the number and extension of same.

**Jejunocolic Fistula Following Gastro-Enterostomy.**—Frankau cites the case of a man on whom a gastro-enterostomy was performed in 1914. The ulcer healed, but a persistence of, or a recrudescence of, the abnormality of the gastric juice caused the formation of a second ulcer. The second ulcer healed after complete diversion of the stream of gastric contents by division of the pylorus; but as a result of this proceeding, and in spite of dietetic and medical treatment, a jejunal ulcer formed from the same causative factor, aided by a dietetic error. The jejunal ulcer was of an acute type. No symptoms of jejunal ulceration were noted until the fistula was established.

**Wassermann Reaction Absent in Oriental Sore.**—The blood Wassermann test was made by McKinstry in twenty-eight cases of oriental sore and only one case gave a positive reaction. This case had points of clinical interest which helped to establish the fact that a positive Wassermann reaction is practically never found in oriental sore without concomitant syphilis.

### Dublin Journal of Medical Science

January, 1922, 4, No. 23

\*Occurrence of Urea in Nature. E. A. Werner.—p. 577.

\*Unusual Case of Mikulicz Disease. T. G. Moorhead.—p. 595.

Case of Spinal Caries and Compression Myelitis: Lateral Sclerosis. J. Moore.—p. 598.

Case of Gumma of Liver. V. M. Synge.—p. 603.

**Occurrence of Urea in Nature.**—Werner asserts that cyanic acid must be formed in the liver, otherwise urea would not be found there. The presence of urea is to him the most convincing evidence that cyanic acid was its precursor. The formation of cyanic acid by oxidation of carbon compounds in the presence of ammonia is referred to in connection with urea formation in plants, but it is pointed out that cyanates and cyanic acid are very resistant to further oxidation. In view of the facts presented it seems reasonable to Werner to conclude that cyanic acid is the final product of the oxidation of the cleavage products of the proteins in the body. The reciprocal action of animal and plant life in relation to carbonic acid and carbon assimilation is well recognized. From carbon dioxide and water plants build up complex carbohydrates from which animals derive energy in oxidizing them to the two simple substances from which they were formed. Similarly plants absorb ammonia which is oxidized in the presence of the carbohydrates to cyanic acid, which is used in the building up of protein matter. Animals, by hydrolytic and oxidation changes, break down proteins to cyanic acid and ammonia, which are excreted as urea, from which plants again derive the necessary material to continue the cycle of changes.

**Case of Mikulicz Disease.**—Moorhead records a case in which the early history was unusual. The patient was a man, aged 48, who at 37 began to have persistent sore throat. After six years he also developed dysphagia. The tonsils were enormously enlarged. The tonsils were removed. The structure of the tonsil (follicular structure) had entirely disappeared. It was a lymphoma. A year later he became

deaf and had difficulty with nasal breathing because of an obstruction in the nose. A month later he began to observe the development of lumps all over his body.

### International Journal of Psycho-Analysis, London

September-December, 1921, 2, Part 3/4

A Man's Unconscious Phantasy of Pregnancy in Guise of Traumatic Hysteria. M. J. Eisler, Budapest.—p. 255.

On Technic of Child-Analysis. H. von Hug-Hellmuth, Vienna.—p. 287.

Anal-Erotic Factor in Religion, Philosophy and Character of Hindus. O. Berkeley-Hill, Ranchi, India.—p. 306.

Significance of Psychoanalysis in History of Science. J. S. Van Teslaar, Brookline, Mass.—p. 339.

Anal-Erotic Character Traits in Shylock. I. H. Coriat, Boston, Mass.—p. 354.

Psycho-Analysis and Psychiatry. A. Starcke, den Dolder, Holland.—p. 361.

Birth of Hero Myth from Kashmir. M. R. C. MacWatters, Lucknow, India.—p. 416.

Persons in Dreams Disguised as Themselves. E. Jones, London.—p. 420.

An Unanalyzed Case. Anal Erotism, Occupation and Illness. J. Rickman, London.—p. 424.

Some Remarks on a Dream. A. Stern, New York.—p. 427.

Example of Displacement of Original Affect Upon Play. M. K. Isham, New York.—p. 430.

Two Confinement Dreams of a Pregnant Woman. J. Marcinowski, Heilbrunn.—p. 432.

### Journal of Tropical Medicine and Hygiene, London

Jan. 16, 1922, 25, No. 2

Plague as Public Health Problem in City of Bangkok. R. W. Mendelson.—p. 13.

Bilharzia Infection in Pool, River and Lagoon. F. G. Cawston.—p. 16.

\*Cure of Malaria. V. S. Hodson.—p. 18.

**Place of Natural Resistance in Cure of Malaria.**—Hodson comments on the almost universal reliance placed on quinin as the one and only means of effectively treating malaria and the almost complete absence of reference to the natural resistance of the human body, and to the fact that no real attempt is made to use this powerful factor in the prevention and cure of malaria. That this factor exists and is of the greatest value is obvious to any one who has lived in unhealthy areas where natives have no chance of getting quinin and yet enjoy a high degree of health. This factor is also clearly exceedingly variable, and increases and decreases in the same individual according to circumstances. Having these facts in view, Hodson has gradually worked out a system of treatment for malaria which gives excellent results. On the admission of a malaria patient he administers an intramuscular injection of quinin, 15 grains, and gives a purge. The intramuscular injection is repeated on the second and third days, and is then stopped for four days, during which time any intestinal parasites which lend themselves to medical treatment are dealt with, and bilharzia treatment with tartar emetic is begun, but not before the temperature is normal. In an average case of an Englishman or an individual foreign to the Sudan, Hodson gives injections on three consecutive days, or 20 grains a day by the mouth, in two doses, after food, on four consecutive days. The full treatment is continued for four weeks, commencing the administration of quinin on the same day of the week as long as treatment lasts. After four weeks' treatment the dosage is reduced to two days for injections and three days by the mouth, and after two weeks, this dosage is again reduced to one day injection, and two days' oral treatment for a further three weeks. This generally completes the treatment in an average case, but should the spleen persist or should any recurrence of fever occur, the course is modified to suit the circumstances of the case. The exciting causes of relapses and recurrences Hodson says are: Fatigue, excess, exposure, or concomitant infection by intestinal or other parasite. The treatment for relapses occurring during treatment varies, but, speaking generally, the patient is put on extra quinin for the week of the relapse and resumes the ordinary treatment the next week. When the relapse occurs after treatment has ceased Hodson gives a modified course, which is considerably shorter than the original period of treatment.

### Medical Journal of Australia, Sydney

Jan. 7, 1922, 1, No. 1

Series of Cases Closely Resembling Typhus Fever. F. S. Hone.—p. 1.

Pregnancy and Pyosalpinx. H. H. Schlink.—p. 13.



**Encéphale, Paris**December, 1921, **16**, No. 10

- \*Amaurotic Idiocy. G. Marinesco.—p. 561. Conc'n.  
 \*Visual Aura with Brain Lesion. Roger and Reboul-Lachaux.—p. 573.  
 \*Law of Symbolism in General Psychiatry. Hesnard.—p. 579.  
 \*Neurosyphilis Simulating Dementia Praecox. C. I. Urechia and N. Rusdea (Cluj, Roumania).—p. 587.  
 \*Chronic Mania. J. Hamel and P. Vernet.—p. 596. Conc'n.  
 Mental Disturbance in Trigeminal Neuralgia. H. Fauvel.—p. 601.  
 Henschen's Views on Aphasia and Acalculia. André-Thomas.—p. 605.

**Amaurotic Idiocy.**—Marinesco concludes this study of the pathologic histology and pathogenesis of amaurotic idiocy with four plates which apparently sustain his assumption that pathologic changes in the intracellular ferments are responsible for the disease. The cell nucleus seems to be intact. The familial character is explained by the diastasic activity of the mitochondria.

**Visual Aura.**—The epileptic seizures in the case described are preceded by a brief period of blue vision in the blind area of the visual field, the man of 45 having long had right homonymous hemianopia. These visual auras sometimes occurred as equivalents for seizures. The mechanism is discussed.

**Symbolism in General Psychiatry.**—Hesnard remarks that as the psychanalysis school is extending the conception of symbolism in a rather unwarranted manner, it is important to estimate the actual scientific import of symbolism in psychopathies, which he proceeds to explain.

**Schizophrenoid Cerebral Syphilis.**—Urechia and Rusdea cite authorities and their own experience to confirm that the symptoms of dementia praecox may be observed in the course of syphilitic disease of the brain and general paresis. These schizophrenoid symptoms may be transient or durable. In one case, from onset to death, the clinical picture was that of dementia praecox through the entire six year course. Cases are known up to twenty years' duration, and lumbar puncture or necropsy first cleared up the diagnosis. In some of the cases both the Wassermann reaction and the spinal fluid findings became negative during a stationary phase. Catatonia is evidently the result of a certain injury of a certain part of the brain, but the morbid agent causing the injury need not always be the same.

**Chronic Mania.**—Hamel and Vernet here conclude their study of chronic mania. There is usually a history of acute mania, but they emphasize the rarity of this outcome of acute mania. In the Maréville asylum, with 1,650 patients, there were only eight cases in all of this type.

**Journal de Chirurgie, Paris**July, 1921, **18**, No. 1

- Fractures of Neck of Femur and Coxa Vara in Children and Adolescents. R. Bloch.—p. 1.  
 Technic for Entero-Anastomosis. R. Toupet.—p. 41.

August, 1921, **18**, No. 2

- \*Research on Autoplastics. L. Imbert.—p. 113.  
 \*Access to Left Hypochondrium. H. Constantini.—p. 130.

**Autoplastic Operations.**—Imbert discusses the mechanism of the circulation in the different layers of the skin, and shows how best to avoid interfering with this circulation. His illustrations of various ingenious methods of autoplastic and homoplastic operations include one in which a pedunculated flap from the leg of one young man was sutured to cover the stump of the right leg in another. This temporary parabiosis was perfectly tolerated, for twenty days, but the flap did not heal in place, probably from the devitalized condition of the tissues in the limb after amputation.

**Thoraco-Abdominal Incision for Access to Left Hypochondrium.**—Constantini gives an illustrated description of a method for what he calls *laparo-thoraco-phrénotomie* which is extrapleural and does not entail pneumothorax, while allowing ample access.

September, 1921, **18**, No. 3

- \*Congenital Luxation of the Patella. A. Mouchet and J. Durand.—p. 225.  
 \*Anterior Balanic and Penile Hypospadias. J. Madier.—p. 234.

**Congenital Luxation of the Patella.**—Mouchet and Durand refer to complete and irreducible luxation of the patella, and

report successful operative treatment in a bilateral case in a boy of 10. They reconstructed the patella apparatus by transplanting inward the anterior tuberosity of the tibia, after having drawn the patella apparatus through a buttonhole in the anterior capsule of the knee.

**Hypospadias.**—Madier relates that the Beck-von Hacker operation was applied in 15 of 17 cases of hypospadias in the last year. The outcome was perfect in all but 2; in one of these a minute, negligible fistula was left. The other was a partial failure, urine escaping through the fistula. The technic is illustrated.

October, 1921, **18**, No. 4

- Surgery of the Tonsils. G. D. de Lamothe.—p. 337.  
 Malignant Branchiomas. C. Lenormant.—p. 358.

November, 1921, **18**, No. 5

- Anatomy and Surgery of the Parathyroids. H. Lorin.—p. 449.  
 \*Juvenile Deforming Osteochondritis of the Hip Joint. M. Lance, J. Andrieu and F. Cappelle.—p. 471.

**Deforming Osteochondritis of the Hip Joint in Children and Adolescents.**—Seventeen cases are described, with fifty-four illustrations. The fact that inherited syphilis was beyond question in such a large proportion suggests that this is more than a casual coincidence. Other infections may be incriminated in some cases. When syphilis is suspected, vigorous specific treatment may modify the prognosis materially. Complete restitution was realized by this means in some of the cases described. Others, not receiving this treatment in time, were crippled for life.

**Journal de Médecine de Bordeaux**Dec. 10, 1921, **92**, No. 18

- Diagnosis of Cancer of the Lung. Creyx.—p. 545.  
 Large Foreign Bodies in Knee. F. Villar.—p. 549.  
 Syphilis and Procreation. M. Favreau.—p. 551.  
 \*The Question of Compulsory Insurance Against Sickness. H. Vergier.—p. 561.  
 Treatment of Chronic Enteritis. J. Carles.—p. 566.

Dec. 25, 1921, **92**, No. 19

- Herpes Zoster and Pseudotumor of Trunk. L. Charron.—p. 588.  
 Tuberculosis plus Cancer in Gland. Duvergey and Jeanneney.—p. 589.  
 Volvulus of Sigmoid Loop. Loubat.—p. 590.  
 Secondary Subacute Endocarditis with Old Mitral Defect. Creyx and C. Massias.—p. 592.  
 Sterilization of Infected Teeth. Cavalié and Marchive.—p. 594.

**Compulsory Insurance Against Sickness.**—See news item on page 591.

**Paris Médical, Paris**Dec. 17, 1921, **11**, No. 51

- \*Some Rare Endocrine Disturbances. J. C. Mussio-Fournier.—p. 477.  
 \*Scoliosis a Medical Affection. Joland.—p. 481.  
 Tetany in Typhoid in a Child. Delater.—p. 484.

**Rare Forms of Endocrine Derangement.**—The essentially variable character of the disturbances, simulating widely diverse affections, was the main feature of Mussio-Fournier's two cases and of eight reported to him by others. In one, the almost kaleidoscopic clinical picture from the age of 12 to 47 can be explained by fleeting congestion at various points, of endocrine origin, and predominantly from defective thyroid functioning, although the amenorrhea pointed to the ovaries, and certain other symptoms—which subsided under epinephrin—indicated participation of the suprarenals. In the second case, thyroid treatment was given, and at once all the symptoms subsided and have not returned. In Hutinel's case, edema developed at the menopause of a previously healthy active woman, tending to leanness rather than obesity. The edema was followed by hemiplegia. After six months of this, tentative thyroid treatment cured at once the hemiplegia, edema and menorrhagia. In his first case, at different times the woman presented swelling and pain in the femur, tibia, humerus and ribs, sometimes on one side and then on the other. These foci were extremely painful, and an operation was performed on several occasions, with absolutely negative findings, nothing being discovered but a focus of congestion.

**Scoliosis a Medical Pathologic Condition.**—Joland emphasizes that the strain of puberty, rapid growth and school fatigue are liable to entail conditions in the spine which may progress to irremediable scoliosis, but if taken in time will



yield to repose and hygiene, without necessity for orthopedic measures, which do actual harm during this phase. He says, "When the curvature straightens out as the trunk is bent, when suspension straightens the spine, or certain movements or attitudes have this effect, it is a crime to immobilize in a cast." This should be reserved for inveterate scoliosis which has resumed a rapid course after having been arrested for a time. Such cases are rare, and even then the cast should be merely for support. Correction of the curvature must not be expected of it; for this we must rely on the muscles, strengthened and trained.

Dec. 24, 1921, **11**, No. 52

- \*Craniotabes in Infants. A. B. Marfan.—p. 493.
- Uremia in Typhus. Benhamou et al.—p. 501.
- Hydrothorax in Tuberculous Painter. S. Bloch and Mallet.—p. 503.
- Indications for Tonsillectomy. Fréderescu-Riou.—p. 505.

**Craniotabes.**—Marfan explains that true craniotabes is of rachitic origin, as a rule, but it is the manifestation of a very early rachitis, beginning during intra-uterine existence or before the age of 3 months. At all ages, he adds, syphilis is the most common cause of rachitis. Rachitis of syphilitic origin is distinguished by its early onset, by the predilection of the lesions for the bones of the skull, and by the accompanying anemia and frequent chronic enlargement of the spleen. Rachitis with much deformity of bones is nearly always of syphilitic origin. When of other origin, the rachitis usually spares the skull and settles on ribs and epiphyses. With craniotabes, it is important to change the position of the infant's head, not letting it lie too long on one side or the back of the head. It may be wise to use a pillow with a hole in the center to avoid pressure on the occipital and parietal bones. The discovery of craniotabes calls for search for the cause and specific treatment. The time is past when it can be regarded as merely a sign of delayed ossification.

### Presse Médicale, Paris

Jan. 11, 1922, **30**, No. 3

- Nature of Movements in Chorea. André-Thomas.—p. 25.
- \*Artificial Collaterals. E. Kramarenko and N. Dobrovolskaia.—p. 27.

**Artificial Collaterals.**—After resection or ligation of a large artery, the flow of blood can be reestablished by providing artificial collaterals. By utilizing some artery or arteries near by, the nourishment of the new collateral is insured. Dobrovolskaia has published different methods for adapting a small artery to fit to a large one. By slitting the smaller one for a short distance on each side, the edges of the stump flare apart and this allows them to be sutured, forming a much larger circumference than the lumen of the small vessel would allow otherwise. Another method is to use an artery that bifurcates, cutting it a little distance below the bifurcation and then slitting the crotch across from side to side. This provides an extensive margin, large enough to fit over the mouth of quite a large artery stump. The illustrations show the technic for this, and also for utilizing branches of the artery above and below the gap, shifting the branches from a centrifugal course to a lengthwise course parallel to the artery. A collateral can be formed of a small artery turned upward to join a descending branch. The artificial collaterals may enlarge later.

Jan. 14, 1922, **30**, No. 4

- Supernumerary Passages in Fallopian Tube. Jayle and Halpérine.—p. 33.
- Incomplete Diagnosis of Scalp Disease. R. Sabouraud.—p. 34.
- \*Coxa Plana. F. Calot and H. Colleu.—p. 35.
- \*Standardization of Wassermann Test. L. Bory.—p. 38.
- \*Phenobarbital in Treatment of Epilepsy. L. Cheinisse.—p. 42.

**Coxa Plana.**—Calot and Colleu explain that the pathologic condition described by Legg, Calvé and Perthes, and known as juvenile osteochondritis or coxa plana, is in reality a transient phase of congenital subluxation of the hip joint. This congenital malformation of the hip joint is responsible likewise for certain cases of arthritis deformans of the hip joint, and certain other forms of hip joint disease in adolescents and adults. All these apparently widely diverse affections are related to each other the same as the chrysalis, the cocoon and the butterfly. The congenital pathogenesis explains logically a whole series of apparently conflicting phenomena.

**Standardization of Wassermann Test.**—Bory says that there are so many variables in the Bordet-Wassermann reaction that its actual standardization is not practicable.

**Recent Publications on Phenobarbital.**—Cheinisse quotes Ducosté's warning that phenobarbital, while it acts well on the convulsive element of epilepsy, strikes too strongly. It arrests the seizures, but it also checks the normal play of the nerve centers. It is liable to entail a physical and mental torpor, which is a decided drawback to the use of the drug. Ducosté wards this off by giving with it very minute doses of belladonna or caffeine. Golla has recently related that in thirty-six of 125 epileptics no benefit was derived from the phenobarbital, or the epilepsy was aggravated. Salomon has recently reported a death in status epilepticus six days after sudden suspension of the phenobarbital treatment, which had been given for four months with considerable improvement. The man then refused to continue it, as he ascribed certain intestinal symptoms to it. The seizures returned the day after the suspension.

### Progrès Médical, Paris

Dec. 10, 1921, **36**, No. 50

- The Amniotic Fluid. H. Vignes.—p. 577.
- Acute Rhinitis. H. Bourgeois.—p. 578.
- Vaquez' Treatise on Heart Diseases. A. Clerc.—p. 583.

### Revue de Chirurgie, Paris

1921, **59**, No. 9-10

- \*Deformity of the Knee from Disease. L. Bérard.—p. 503.
- \*Metastatic Goiter. Idem and C. Dunet.—p. 521.
- \*Blocking the Plexus for Thyroid Operations. P. Santy and D. Bizot.—p. 546.
- \*Pain in Knee with Hip Joint Disease. G. Aigrot.—p. 555.

**Correction of Vicious Ankylosis of Knee.**—Bérard reviews the ultimate outcome after operative measures in eight cases of deformity of the knee from a tuberculous process in childhood. All were past the period of active growth at the time he operated, that is, over 16. In twenty-five years of experience he has never encountered a case of the complete cure of a tuberculous process in the knee, after the age of 16, under conservative measures alone, even long courses of heliotherapy. If immobilization and heliotherapy do not show distinct improvement in four or six months, it is useless to continue with this, although it is an excellent preparation for the operation that should then follow. In operating, if the ankylosis is not complete, the technic should be the same as for an active process, but with confirmed ankylosis the wedge to be cut out can be calculated from radiographs, as he shows in his illustrations. He ligates the vessels as he reaches them, applies a staple on each side, and leaves the plaster splint unmolested for forty-five days. A plaster dressing is then kept on for two months as the patient begins to walk with crutches. He removes the metal staples after three or four months, under a few drops of ethyl chlorid, although they can be left indefinitely. A shoe with a high sole and metal bar reaching half way up the thigh is worn for a year as a precautionary measure, but most of his patients discarded it by the sixth month. The simplicity and the perfection of this technic commend it. Two of his patients are doing the hard work on a farm without mishap. The amount of shortening was proportional to the extent of the primary lesion and the age at which it had developed.

**Metastatic Goiter.**—Bérard and Dunet summarize from the literature and their own experience a total of twenty-nine cases in which an apparently simple goiter induced metastasis in other organs. Their analysis of this material demonstrates, they assert, that the goiter was of a malignant nature in all. Serial sections of the primary growth will reveal this. There is no such thing as metastasis of a benign goiter, they reiterate.

**Regional Anesthesia for Operations on the Thyroid.**—Santy and Bizot describe their technic for bilateral paravertebral anesthesia of the cervical plexus and brachial plexus, which allows thyroidectomy or resection of a cancer of the esophagus with comparative ease and dispatch. In some of the cases cited the patient probably would not have been able to stand any other method of anesthesia. Their cooperation during the operation also facilitated matters.



**Pain in the Knee with Ankylosis of Hip Joint.**—Aigrot has seen the gonalgia develop early or late with hip joint disease, and even after ankylosis has been long established. Traction and overstrain are responsible for tardy gonalgia. Immobilization until the pains disappear, sparing the limb afterward, and wearing an orthopedic appliance may be advisable.

### Revue de Médecine, Paris

November, 1921, **38**, No. 11

Acquired Displacement of the Heart. L. Bard.—p. 511.  
Cerebellar and Vestibular Syndromes. J. Levy-Valensi.—p. 524. Cont'd.

December, 1921, **38**, No. 12

\*Origin of Urobilinuria. M. Brulé and H. Garban.—p. 583.

**Urobilinuria.**—Brulé and Garban discuss the various theories proposed to explain the pathogenesis of urobilinuria. Their own research has demonstrated a number of facts which contradict the intestine-liver theory.

### Revue Médicale de la Suisse Romande, Geneva

December, 1921, **41**, No. 12

\*Treatment of Hairy Nevi. C. du Bois.—p. 769.  
\*Multiple Primary Carcinomas. A. Renaud.—p. 773.  
Tardy Mortality of Epidemic Encephalitis. A. Repond.—p. 783.  
Gangrenous Stomatitis of Leukemic Origin. M. Alikhan.—p. 785.  
Absence of Internal Genitals in Woman. A. Starobinsky.—p. 790.  
\*Medical Ethics. Muret.—p. 792.  
Cocain Poisoning and Prophylaxis. C. Julliard.—p. 806.

**Treatment of Hairy Nevi.**—Du Bois' illustrations before and after show the practically complete cure of an extensive dark colored nevus, mostly covered with extremely heavy hairs, the nevus covering the area from the eyebrow nearly to the nostril of the girl of 17. He first destroyed the hairs and the hypertrophied follicles by electrolysis, and then the pigmentation nearly all disappeared under repeated applications of carbon dioxide snow. Local anesthesia with ethyl chlorid or injection of cocain could not be used, as it modified too much the anatomic arrangement. He was able to reduce the painfulness of the procedures by vigorous preliminary massage with a salve containing equal parts of menthol, phenol and cocaine, with a little epinephrin. No other treatment, radiotherapy, physical or chemical cauterization has ever given such good results as in this case, in his experience. The eyebrow is still abnormally heavy but the young woman wears her hair low on that side to conceal this, as she does not care to allow further electrolysis. The follicles in these hairy nevi are always exceptionally deeply embedded. The skin is also unusually thick, and the nevus is liable to spread and grow darker in color at puberty. Hence he advises the excision, early, of small hairy nevi.

**Multiple Primary Carcinomas.**—In Renaud's case an ulcer rodens of one temple had developed in the course of five or six years on a patch of senile keratosis. Then came a rapid carcinomatous growth on the other temple. They were of different malignant structure. He queries why multiple cancer is so rare. None of the prevailing cancer theories throw any light on this question.

**Medical Ethics.**—This is a lecture to undergraduates on medical deontology.

### Schweizerische medizinische Wochenschrift, Basel

Jan. 12, 1922, **52**, No. 2

\*Indications for Hastening Delivery. H. Guggisberg.—p. 25.  
The Oscillatograph. A. Jaquet.—p. 29.  
Pathology of the Respiration. R. Staehelin.—p. 30. Conc'n.  
Tests of Functional Capacity of Stomach. E. Fricker.—p. 38.  
Obstetric Presentation of Twins. R. Schnyder.—p. 40.

**Fetal Indications for Operative Hastening of Delivery.**—Guggisberg declares that the fetal heart sounds are practically the sole criterion. Where the heart sounds can be heard regularly, 120 to 140 per minute, in the pauses between the labor contractions up to the final extraction, there is no danger for the life of the fetus in the overwhelming majority of the cases. Acceleration, regardless of its extent, shows some slight discomfort of the fetus, but is not a sign of danger. Preparations should be made ready to operate at any moment if the number drops to 120-100, and the operation should follow at once if the heart sounds drop below 100 during several pauses between contractions.

### Annali d'Igiene, Rome

October, 1921, **31**, No. 10

Study on Avitaminosis. G. Guerrini.—p. 597.  
Sodium Fluorid for Sterilization of Organ Extracts. U. Paranhos (S. Paulo, Brazil).—p. 620.  
Reliability of Intra-Eyelid Test for Echinococcosis in Cattle. A. Lanfranchi, L. Sani and I. Altara.—p. 624.  
Collodion Sacs in Microbiology. L. Verney.—p. 626.

### Archivio Italiano di Chirurgia, Bologna

December, 1921, **4**, No. 5

\*Echinococcus Disease in Cyrenaica. A. Mei.—p. 455.  
\*Lesions of Semilunar Cartilages of Knee. G. Pinardi.—p. 487.  
\*Cholelithotomy for Gallstones. A. Vecchi.—p. 511.  
\*Tumor of Lumbar-Sacral Skeleton. L. Gobbi.—p. 519.  
\*Pyuria and Hematuria of Obscure Origin. M. Bufalini.—p. 540.

**Echinococcus Disease.**—Mei's experience with echinococcus cysts among the Bedouin tribes of northern Africa has convinced him of the advantages of marsupialization of the cyst when it is large. He has been successful with this, as he describes, with the cyst in the orbit, spleen or lung as well as in the liver. The operation is completed at one sitting, under local anesthesia.

**Injury of Semilunar Cartilages of the Knee.**—Pinardi's patient had been lame for three years after a fall injuring the knee, which had been painful since. The operation revealed a transverse fracture of the internal semilunar cartilage although roentgenoscopy had been negative. The rapidity and extent of the effusion at the time of the fracture, the subcutaneous extravasated blood, the cracking sound at the moment of the accident, and the constant tender point in the joint might have aided in the diagnosis, as the ability to use the limb at all excluded fracture of a long bone. Another aid in diagnosis was the way in which the joint suddenly became blocked at times, after an unusually long step; and only a certain passive movement always restored function to it. The woman has been free from all disturbances during the fifteen months since excision of the fractured cartilage.

**Gallstone Obstruction of Common Bile Duct.**—Vecchi watches over the case for a few days, and then, if no improvement is evident, he operates at once and drains the biliary passages. He never waits longer than from four to eight days from the beginning of the colic attack. The four cases described in detail confirm the advantages of thus temporizing at first.

**Sarcoma in Sacral Region.**—Gobbi reports a case of what seemed to be Pott's disease in the fourth and fifth lumbar vertebrae in a patient 17 years old. The first symptoms had been noted a few months after a fall injuring the lower part of the back. The lesion proved to be a primary sarcoma with an unusually slow course, over two years. There were no functional disturbances but pain was severe and spread down into the right leg. Gobbi lists the cases on record of malignant tumors in vertebrae and reviews the operative cases. He regarded his case as inoperable but Potel has reported 22 per cent. cured of thirty-two cases of vertebral sarcoma; Stursberg 6 per cent. of twenty-two vertebral tumors, and Péan and Carle one case each.

**Differentiation of Pyuria-Hematuria.**—Bufalini reports a case of tuberculous papillitis with miliary pyelitis, and gives photomicrograms of the kidney after its removal. He also summarizes eight cases from the literature in which the tuberculous process was likewise limited to one papilla. He is inclined to accept that this is the initial form of ordinary renal tuberculosis.

### Policlinico, Rome

Dec. 1, 1921, **28**, Medical Section No. 12

\*Parkinsonism from Epidemic Encephalitis. L. de Lisi.—p. 505. Conc'n.  
Cinchonin in Treatment of Malaria. S. Silvestri.—p. 529.  
The Blood Platelets and Their Origin. R. Marchesini.—p. 546. Reply.  
A. Perroncito.—p. 548.

**Parkinsonism After Epidemic Encephalitis.**—De Lisi tabulates the findings in eleven cases of symptomatic paralysis agitans, the age ranging from 13 to 39. In all the course has been very slow but inexorably progressive, and a tendency to catatonia is pronounced in nearly all. The encephalitis had run its course in 1918, 1919 or 1920, and the parkinsonian



symptoms did not appear until after an interval of health. The speech resembles that in Wilson's disease.

Dec. 15, 1921, 28, Surgical Section No. 12

- \*Congenital Elevation of Scapula. M. Salaghi.—p. 521.
- \*Pseudarthrosis. F. Putzu.—p. 528.
- \*Pedunculated Bone Grafts. L. G. Gazzotti.—p. 548.
- Intermittent Hydronephrosis. G. Cavina.—p. 556.

**Congenital Elevation of the Scapula.**—In the case described by Salaghi developmental deficiencies of ribs were responsible for Sprengel's deformity. He explains how to treat the resulting displacement of the spine by manual correction to untwist the spine.

**Pseudarthrosis.**—Putzu applied in eighteen cases of traumatic pseudarthrosis of the arm either a bone implant, or he merely reconstructed the bone shaft, or, when the traumatic injury was recent, and there was no bone or soft parts interposed between the fragments, he assumed that operative measures were not required. The results were excellent in all but one although there had been long suppuration in each case.

**Fibula to Replace Tibia.**—The shaft of the fibula was divided at the upper end and this end was implanted in the spongiosa of the upper stump of the tibia, after the tibia shaft had been resected. After allowing ample time for the upper end of the fibula to heal in place and become well nourished, then the lower end of the fibula shaft was divided and this lower end implanted in the lower stump of the tibia in the same way. The implant was thus pedunculated.

### Rivista di Clinica Pediatrica, Florence

September, 1921, 19, No. 9

- \*Radiotherapy of Hypertrophied Thymus. L. M. Spolverini.—p. 513.
- \*Angiotrophoneurotic Form of Purpura. G. Frontali.—p. 525.

**Hypertrophy of the Thymus.**—Spolverini reports that all were cured in the four cases of thymus asthma in which he applied the roentgen rays. The patients were infants from 2 to 7 months old. The hypertrophied thymus seems to be exceptionally susceptible to the roentgen rays. The dose each time was about 2½ H units with a 2 mm. aluminum filter. The exposures should be repeated about once a week until the symptoms from compression disappear.

**Abdominal Purpura.**—Frontali reports the results of various tests applied in a case of purpura in a girl of 7. The blood platelets were in normal numbers, but angioneurotic edema and symmetrical gangrene formed part of the clinical picture, an actual angiotrophoneurosis. The circumscribed and fleeting edema was preceded by local pain and sensation of pressure. The first manifestations of the disease had been in the abdomen, pain, diarrhea and tenesmus. The fourth day the purpura developed, the waves of punctate hemorrhage returning after two day intervals, and some of the confluent patches suppurating, with sloughing off of tissue. Aphthous stomatitis and tonsillitis also formed part of the clinical picture, with persistent recurring abdominal pains and diarrhea, and multiple gangrene as the final stage before convalescence set in, with final complete recovery. Pilocarpin brought back the abdominal symptoms after they had entirely subsided for more than a week, which confirmed that irritation of the abdominal autonomic nervous system was responsible for them. The whole disease lasted from November into March. There was no fever until the stage of suppuration was reached, from secondary infection. The symmetry of the multiple gangrene, its predilection for elbows and knees, and the integrity of the heart, are among the arguments against an infectious origin. Bacteriologic tests were constantly negative in skin and blood; the ulcerative stomatitis was evidently the work of secondary infection.

### Semana Médica, Buenos Aires

Nov. 3, 1921, 28, No. 44

- \*Edema from Congenital Grooves. M. Sussini and F. Bazán.—p. 577.
- \*Calculus Reflex Anuria. J. Salleras.—p. 579.
- Action of Roentgen Rays on Cancer Cells. C. Heuser.—p. 583.
- "Tuberculosis in State of Cordoba." G. Bermaun.—p. 586.
- Thyrotomy for Extraction of Scrap of Egg Shell. A. M. Cavazzutti.—p. 591.
- Ferrán's Treatment of Tuberculosis; Twenty-Six Cases. A. Helguera.—p. 592.
- Influenzal Pneumonia in Infant. González and Basavilbaso.—p. 595.

**Edema of Feet from Congenital Grooves.**—The 3 months' infant had deep grooves at ankles and toes, and both feet were swollen almost round. At the sixth month, the fibrous tissue forming the groove on one foot was resected but not much benefit was derived. Sussini and Bazán now propose to cut out more of the fibrous tissue, resecting a piece like a segment of a melon. This, they think, will allow better circulation in the foot.

**Calculus Reflex Anuria.**—Salleras advises to pass three suture threads through the kidney to draw the tissues up to obliterate the cavity left by removal of the calculus. Neglect to do this was responsible for recurring hematuria in a case described. He had to open the kidney again to remove the clot that had formed in the cavity. After convalescing from this second operation, an unsuspected calculus in the other kidney entailed tardy fatal reflex anuria.

### Archiv für Gynäkologie, Berlin

Nov. 29, 1921, 115, No. 2

- \*Cyclic Genital Processes in Mammalian Females. O. Zietschmann.—p. 201.
- \*Radium Dosage. R. Zander.—p. 253.
- \*Eclampsia. H. Zacherl.—p. 264.
- \*Sudden Natural Death in Pregnancy and Childbed. H. Katz.—p. 283.
- \*Hemolytic Bacteria in the Prognosis. F. Kirstein.—p. 313.
- Passive Immunization of New-Born Against Diphtheria. Id.—p. 326.
- Ovarian Folliculoma. B. Aschner.—p. 350.
- Case of Zinc Chlorid Caustic Action in Vagina. H. Fuch.—p. 383.
- Defective Osteogenesis. H. Baumm.—p. 385.
- Epithelial Nodules in Uterine Glands. R. Meyer.—p. 394.
- Clinical and Necropsy Findings in *Holoacardius Eumorphus*. W. Strakosch and H. E. Anders.—p. 408.

**Cyclic Genital Functioning in Mammals.**—Zietschmann compares the cyclic processes of rutting and menstruation, and discusses the comparative functioning of the genital apparatus in mammals and human beings. He gives nearly five pages of bibliographic titles, set solid.

**Radium Dosage.**—Zander uses the softened rubber mass of the dentists to pack around the radium tube. A cold douche hardens it, and it holds the radium immovable in the desired position as long as needed.

**Eclampsia.**—Zacherl reports 2 cases of eclampsia without convulsions but with the characteristic findings in the organs at necropsy. There were no symptoms until the terminal phase. In fact, it seems, he remarks, that the gravest changes may be found in the cases without convulsions. The diagnosis of eclampsia had not been made during life. There have been 188 cases of eclampsia among the 32,700 obstetric cases at the Graz maternity, a proportion of 0.57 per cent., and 20.7 per cent. of the eclampsia women died. In 18 cases the eclampsia developed after the women were in the hospital. Only 3 died before delivery, and the interval after delivery ranged from one hour to one day in all but 8. The mortality has dropped from 21 to 12 per cent. since 1903-1910, and the mortality of the children from 43.66 to 27.06 per cent. This confirms that the treatment applied is in the right direction, namely, warding off all irritating factors; general anesthesia for all interventions; venesection plus infusion of saline; prophylactic sedatives by the Stroganoff system, and hastening delivery with gentle measures.

**Sudden Natural Death in Pregnancy and Childbirth.**—Katz classifies his 95 medicolegal cases in four groups: those from fatal internal disease (22); eclampsia (30, including 2 fatal cases early in the pregnancy); hemorrhage or embolism at delivery (24), and thrombosis in the puerperium (19). Meningitis proved responsible for the death in one case; the conditions in the genital sphere were apparently normal.

**Hemolytic Micro-Organisms in Parturients.**—Kirstein regards tests of the hemolytic properties of the bacteria found in the case as an important gage of their virulence. He means in particular the hemolytic action on the patient's own blood corpuscles. If her erythrocytes are resistant, or if the bacteria are not strongly hemolytic, all is well as a rule. In three series with hemolytic bacteria 46 per cent., 68.7 per cent. and 92.4 per cent. developed fever, the series including 11, 16 and 53 women. In the corresponding series with nonhemolytic bacteria, the percentages were 12, 12.1 and 0.32, the groups containing 424, 390 and 1,251 women.



**Archiv für klinische Chirurgie, Berlin**

Nov. 24, 1921, 118. A. Bier Festschrift. First Third

- \*Causal Treatment of Gastric Ulcer. V. Schmieden.—p. 1.
- Stasis in Gallbladder. Idem and C. Rhode.—p. 14.
- \*Bile Peritonitis without Perforation. C. Ritter.—p. 54.
- Idiopathic Cyst in Common Bile Duct. Schürholz.—p. 91.
- \*Surgery of Hard Gastric Ulcer. R. Hölscher.—p. 96.
- \*Localization of Ulcer in Digestive Tract. W. Block.—p. 114.
- \*Suspension of Stomach to Rib. Klapp and Riess.—p. 125.
- \*Inflammatory Tumors in Intestines. W. Körte.—p. 138.
- \*Permanent Subcutaneous Drainage for Ascites. F. Erkes.—p. 164.
- \*Congenital Atrophy of One Kidney. O. Rumpel.—p. 173.
- \*Obstruction of Ureter by Mesenteric Cyst. E. Valentin.—p. 189.
- \*Displacement of Ureter. E. Joseph.—p. 194.
- \*The Skull Bones and the Brain. Tilmann.—p. 201.
- \*Reconstruction of Urethra. V. Hacker.—p. 209.
- \*Reinforcing of Suture for Bladder Fistula. W. Rübsamen.—p. 220.
- \*Congenital Torticollis. J. Fränkel.—p. 228.
- \*Amputation Stumps in Children. C. Deutschländer.—p. 253.
- Surgical Treatment of Prognathism. R. Krueger.—p. 261.

**Causal Treatment of Gastric Ulcer.**—Schmieden's endorsement of resection by steps has already been mentioned in these columns. By cutting out a long area in the lesser curvature, including the ulcer, and a narrow strip across the stomach, we get rid of the pathologic portion while retaining the normal shape of the lumen of the stomach. He declares that gastric ulcer must be regarded as a mal perforant of the stomach, calling for the same causal treatment as the latter. It is important to get the ulcer patient into an interval phase before attempting to operate. One of the strongest arguments for operative measures with gastric ulcer, he adds, is that physicians with gastric ulcers clamor for an operation, although otherwise knife-shy, as a rule.

**Bile Peritonitis.**—Ritter reports two cases of bile peritonitis with no signs of perforation of the gallbladder, and compares them with similar cases on record. A number were cured by removal of the gallbladder, but some recovered after mere puncture of the gallbladder and draining.

**Surgery of Hard Gastric Ulcer.**—Hölscher relates that 87 per cent. were permanently cured by a palliative operation alone in 38 cases, and 62.2 per cent. by a radical operation in 29 other cases.

**Diagnostic Import of Amylase in Blood in Regard to Ulcer.**—Block's tables of fifty-seven cases of gastric or duodenal ulcer show that the amylase content of the blood was always far above normal when the ulcer involved the pancreas. It was moderately increased with perigastritis, when the tumor was in the lesser curvature, posterior wall, upper part of the anterior wall, or in the duodenum. The amylase content was normal with ulcers elsewhere, and in the absence of perigastritis.

**Fastening the Sagging Stomach to a Rib.**—In the five cases described all the symptoms disappeared at once after four silk suture threads had been quilted vertically through the anterior wall of the stomach, and the ends of each drawn through the skin on each side of the rib and tied, all the same distance apart.

**Inflammatory Tumors in the Intestines.**—Körte summarizes fifteen cases and emphasizes the difficulty of differentiation. Appendicitis, or diverticulitis is generally responsible, but in some cases no cause could be discovered.

**Surgical Treatment of Ascites.**—Erkes gives an illustration of the technic with which in five cases of tuberculous peritonitis he drained the ascitic fluid into the subcutaneous tissue by making a permanent opening into the peritoneum. Great relief followed also in a case of carcinomatous ascites. The five other patients rapidly regained their earning power.

**Congenital Atrophy of One Kidney.**—Rumpel reports five cases, in adults of both sexes, between 39 and 56. All were supposedly healthy when symptoms in the atrophied kidney compelled operative intervention.

**Occlusion of Ureter by Tuberculous Gland.**—Valentin's patient was a young woman, and she was cured by resection of the tuberculous mesenteric gland.

**Displacement of the Ureter.**—Joseph's roentgenograms confirm the possible stretching of the ureter, to a length of 35 cm. and more, by the effort of the ureter to overcome the resistance of a growing tumor. With the shriveling from a

peritoneal tuberculous process, on the other hand, the ureter may shrink very short, to 17 cm. or less.

**The Skull Bones and the Brain.**—Tilmann explains that when the contents of the skull bulge, the bone atrophies as an effort to relieve the pressure on the brain. On the other hand, when the brain shrinks, the space may fill up with fluid, or the bone hypertrophy, or both may occur. These processes are not of an inflammatory nature; they are evidence of reaction and repair: reduction of skull bone tissue when the content of the skull is disproportionally large, and hypertrophy when it is too small. The primary focus must be removed, whether in brain or bone. Our measures must be aggressive, and on the valve principle. By providing a valve, it can bulge out or sink in, as the circumstances require, and the disproportion is corrected.

**Reconstruction of Urethra.**—The war wound had destroyed part of the urethra, bladder and rectum. Hacker gives two colored plates showing how he utilized rectum tissue in the complicated plastic operation.

**To Reinforce a Bladder Fistula Suture.**—Rübsamen's illustrations demonstrate the advantages of using the peritoneal fold between bladder and uterus to reenforce the suture after correcting the fistula. This fold is drawn up and sutured like an apron over the sutured fistula. The uterine cervix is then sutured to the anterior pubic portion of the levator ani muscles on each side to ward off any possible insufficiency on the part of the urethra.

**Congenital Muscular Torticollis.**—Fränkel merely severs the muscle through a small incision, and applies a plaster cast, as he describes. He expatiates on the excellent results in a long series of cases illustrated.

**Amputation Stumps in Children.**—Deutschländer advocates transplanting an epiphysis when the natural epiphysis has been lost at an amputation. Every effort should be made to save the natural epiphysis in operating on a child. If not possible, the fibula epiphysis can generally be utilized.

**Beiträge zur klinischen Chirurgie, Tübingen**

1921, 124, No. 3

- \*Pulsion Diverticulum of Esophagus. D. Kulenkampff.—p. 487.
- Experimental Pneumothorax. H. Bückhardt.—p. 516.
- Treatment of Acute Empyema. R. Ganz.—p. 535.
- \*Continent Artificial Anus. F. J. Kaiser.—p. 548.
- Nerves of Anterior Abdominal Wall. L. Drüner.—p. 583.
- \*Necrosis After Ligation of Large Vessels. L. Heidrich.—p. 607.
- \*Outcome of Operations on Nerves. B. Heile.—p. 639.
- \*Traumatic Segmental Vascular Spasm. R. Reichle.—p. 650.
- Operative Treatment of Tuberculous Spondylitis. K. Bachlechner.—p. 655.
- Operative Nearthroses. T. Kalima.—p. 662.
- Fracture of Transverse Processes. Niedlich.—p. 683.
- Action of Optochin in Postoperative Pulmonary Complications. B. Neuer.—p. 696.
- \*Esophagoplastics. O. H. Petersen.—p. 705.
- Operative Cure of Phlegmon in Cecum Wall. H. Biedermann.—p. 718.

**Pulsion Diverticulum.**—Kulenkampff bases this study of the etiology, diagnosis and treatment of pulsion diverticulum of the esophagus on six operative cases. The predisposition is congenital, but the disturbances are easily cured, he says, by excision of the sac under local anesthesia, using the sac itself to reenforce the suture.

**Continent Artificial Anus.**—Kaiser reports two cases in which he has succeeded in rendering the artificial anus entirely continent by the simple device of drawing the stump of the bowel through the sartorius muscle, which spontaneously and automatically closes the lumen except when the sartorius is voluntarily relaxed by raising the leg. The desire for defecation is felt in time to guard against incontinence. The loop of the bowel is brought outside of the muscles in the groin and is drawn down and under the sartorius muscle. The large triangular skin flap is then sutured over the whole except the mouth of the intestine forming the femoral anus in the thigh. The article is illustrated.

**Ligation of Trunk Vessels.**—Heidrich summarizes the cases from the last ten years in which various arteries were ligated. Cerebral disturbances followed in 30 per cent. of the 53 common carotid cases and in 4.4 per cent. of the 23 in which the jugular vein was ligated also, and in 7.1 per cent. of the 14 jugular vein cases, but no disturbances were observed in



the 18 cases of ligation of the vertebral artery or in the 21 external carotid cases. In 405 cases treated by ligation of a trunk vessel in the arm, gangrene developed in 6.4 per cent. and in 11.9 per cent. of the total 1,276 cases of ligation of various arteries or veins. His detailed study of this material warns anew that ligation is dangerous for the common carotid and common and external iliac, and also for the femoral and popliteal arteries, as necrosis is so liable to follow. The vessel should be sutured, not ligated. Sutures stood the extreme test of war conditions. Even if thrombosis may obliterate the vessel as completely as ligation, yet it has the advantage that it develops slowly, giving a chance for collaterals to form. The thrombi may later allow the passage of the blood, restoring the permeability of the vessel. If ligation is the only resource, he advises to ligate the vein along with the artery. With the subclavian, axillary, brachial and ulnar arteries, it is optional whether to ligate or suture; necrosis is as liable with one as with the other. Ligation is to be preferred for the arteries below the knee and below the elbow, the external carotid and the trunk veins. After-disturbances with these are extremely rare.

**Operations on Nerves.**—Heile describes the present status of 87 out of 300 nerve operation cases, with an interval since of over thirty months. In 25 per cent. the operation has proved a complete failure, no improvement being evident from the partial or total resection or neurolysis. The outcome in the neurolysis cases has proved particularly disappointing. Only 25 per cent. have been cured completely; 50 per cent. are only more or less improved. Shifting the nerve into sound tissue proved useful, but seldom is practicable. A calf artery used to isolate the nerve soon became disintegrated, and fascia tissue did not give durable protection. Fat proved better adapted for the purpose. Drain tubes also long persisted without disintegration. Very encouraging are the excellent results realized in 2 cases in which 4 and later 2 more posterior roots were resected in the sciatic region, after failure of other means to relieve the intense pains. Some colored photomicrograms show among other things the importance of the sympathetic fibers found in peripheral nerves.

**Traumatic Segmental Spasmodic Contraction of Vessels.**—Reichle adds two cases to the few on record of segmental spasm of a large vessel after a contusion, gunshot wound or other injury. The segmental spasm may accompany laceration of the vessel.

**Artificial Esophagus.**—The antethoracic esophagoplastic operation was done on the girl of 17 for congenital stenosis of the esophagus. The new esophagus was constructed from a loop of small intestine, the three operations at two and four week intervals early in 1920. Formation of the skin tube was the last step in the procedure. The success has been complete.

### Deutsche medizinische Wochenschrift, Berlin

Dec. 15, 1921, 47, No. 50

- Theory of Action-Currents in Muscles. Kraus and Zondek.—p. 1513.  
Cardiac Pains. A. Hoffmann.—p. 1514.  
Portable Outfit for Blood Examinations. Schilling.—p. 1517.  
The Hemoclastic Crisis. J. Bauer.—p. 1519.  
Researches on the Vagus and Sympathetic Nerves. Zondek.—p. 1520.  
Effect on the Skin of Intravenous Injections of Glucose. W. Scholtz and C. Richter.—p. 1522.  
Accelerating Effect of Glucose on the Spirillicidal Action of Arsphenamin. Steinberg.—p. 1523.  
\*Danger from Marking Inks. P. Borinski.—p. 1526.  
\*Sodium Chlorid in Treatment of Wounds. H. Rogge.—p. 1527.  
A Modification of the Percussion Hammer. A. Lissauer.—p. 1528.  
\*Postoperative Irradiation of Carcinomas. O. Strauss.—p. 1528.  
General and Local Anesthesia. G. Ledderhose.—p. 1530.

**Danger in Marking Inks.**—Borinski reports seven cases of poisoning in infants traceable to the marking fluids employed in hospitals in marking baby linen used next to the skin. The cause of the poisoning was not nitrobenzene, as was at first assumed on the basis of previous publications, but anilin. It was found that there was, however, no danger from anilin black inks if used according to directions, but as there seems to be no guarantee that proper caution will be taken, marking fluids containing anilin would better be excluded from founding hospitals and similar institutions.

**Sodium Chlorid in the Treatment of Wounds.**—Rogge states that, on account of its irritative qualities, which are fre-

quently underestimated, strong solutions of sodium chlorid must not be used in certain wounds. Almost all trophic ulcers, for example, are very sensitive to sodium chlorid if used any length of time; likewise varicose ulcers if there is inflammation in the vicinity. It is generally assumed that physiologic sodium chlorid solution does not irritate. That is not the case. It is by no means to be regarded as "physiologic" for sensitive wounds. Even a slight irritation such as is occasioned by weak solutions may in the case of sensitive wounds be the deciding factor in a turn for the worse. The strength of the solution must be determined by experimenting in each individual case. It is especially important in using sodium chlorid solutions, as is true of every form of irritative treatment, that after a given irritation time must be allowed the tissues to recover before a second irritation is set up.

**The Postoperative Irradiation of Carcinomas.**—Strauss regrets that more practitioners have not taken up with the prophylactic, postoperative irradiation of carcinomas. As the question stands today, postoperative irradiation is enthusiastically recommended by certain prominent men in the field, and is just as vigorously rejected by other equally good authorities. Strauss sums up his experience somewhat as follows: Postoperative, prophylactic irradiation is, in principle, to be recommended. As a rule, not more than two thirds of the erythema dose should be administered. The interval between the operation and the beginning of postoperative irradiation should be as short as possible. The number of postoperative irradiations should be carefully restricted. After six postoperative irradiations at least a six months' interval should intervene before the irradiations are continued.

### Medizinische Klinik, Berlin

Dec. 4, 1921, 17, No. 49

- Treatment of Wounds. C. Bayer.—p. 1471.  
\*Causes of Abortions and Miscarriages. C. Abernethy.—p. 1475.  
\*Slow Endocarditis. Gessler.—p. 1476.  
Butter-Flour Mixture in Infant Feeding. B. Epstein.—p. 1478.  
Abuse of Laxatives. A. Alexander.—p. 1481.  
\*Toxic Transformation of Calomel. J. Schumacher.—p. 1485.  
\*Pituitary Extract for Functional Kidney Tests. H. Brieger and K. Rawack.—p. 1485.  
\*Treatment of Erysipelas. Theisinger.—p. 1487.  
Improved Microscopy for Tubercle Bacilli in Sputum. H. A. Dahm.—p. 1487.

**Causes of Abortion and of Immature and Premature Labor.**—Abernethy states that grouping the criminal, the traumatic and the unknown cause cases leaves only 34.4 per cent. of 125 cases for which some organic lesion was responsible. In one case a therapeutic hot foot bath seemed to have brought on the abortion.

**Slow Endocarditis.**—All but 3 of Gessler's 33 cases of slow endocarditis were in men and 28 of them had served in the war. The insidious onset, irregular temperature course, heart and kidney findings, and the anemia render the diagnosis easy if the possibility of it is borne in mind. Nothing but syphilis could offer such a picture, and such an accumulation of symptoms is rare in syphilis. The Wassermann reaction was positive in one case in which nothing otherwise suggesting syphilis could be found. In 31 of the 33 cases the aorta was involved likewise. Young people with aortic insufficiency and no history of polyarthritis should be examined for this form of endocarditis.

**Toxic Action from Calomel.**—Schumacher's research has confirmed that calomel becomes a dangerous poison when it is arrested in the bowel, the alkaline carbonate in the intestinal juice transforming it in such a way that all the mercury is taken up into the circulation. It should never be given therefore with paralysis of the bowel, ileus or incarceration. It is a harmless laxative only when it can be passed rapidly through the bowel and evacuated.

**Pituitary Extract in Functional Kidney Tests.**—Brieger and Rawack confirmed in tests on healthy subjects that pituitary extract first checks diuresis and then exaggerates it, accompanied by augmented elimination of sodium chlorid. The pituitary extract was injected by the vein after the subject had drunk a liter of water. They give typical charts from five cases of kidney disease, showing the modification in the curve



in pathologic conditions. The difference between the phases is much less distinct, and the response is more protracted. They warn against the test in cases of high blood pressure, stating that, even in the healthy, nausea, headache or irregular pulse were sometimes observed.

**Silver Nitrate in Treatment of Erysipelas.**—Theisinger confirms the efficacy of an 18 per cent. solution for arresting the spread of erysipelas, applied to the tissues beyond the edge of the lesion, and it has never spread beyond. In his two dozen cases treated in this way, the success was constant except in one case in which it was applied too late, the meninges having already become involved. (In the heading to the article the strength is stated as "16 per cent.," in the article itself, as "18 per cent.")

#### Mitteil. a. d. Grenzgeb. d. Med. u. Chir. Jena

1921, 34, No. 2

\*Duodenal Ulcer. F. M. Groedel.—p. 145.

\*Ambard Index as Test of Kidney Functioning. M. Rosenberg.—p. 162.

\*Cause of Habitual Constipation. T. E. H. Thaysen.—p. 175.

\*Unilateral Paralysis of Diaphragm. O. Winterstein.—p. 188.

\*Hyperesthetic Polyperiosteitis. R. Stephan.—p. 201.

\*Suspension Stability of Erythrocytes. W. Löhr.—p. 229.

\*Changes in Capillary Walls. R. Schrader.—p. 260.

**Roentgen-Ray Findings with Duodenal Ulcer.**—Groedel's extensive experience has confirmed the points in which the roentgenograms differ with florid ulcer in the duodenal mucosa from those with chronic and hard ulcers, and according as there is excessive or insufficient motor functioning of duodenum or stomach or both. He has never encountered a case of penetrating duodenal ulcer, and knows of only one such case on record, confirmed by necropsy. He analyzes the direct and indirect roentgen symptoms, especially the interval findings, the patient standing.

**The Ambard Index of Kidney Functional Capacity.**—Rosenberg tabulates the findings with the water freshet test and the concentration test of kidney functioning, listing the Ambard constant each time, in fifty cases. His verdict is that the Ambard index is not so reliable as the findings with the water and concentration tests. A normal Ambard constant seems to exclude severe kidney disease, but the kidneys may be mildly diseased. The Ambard index is particularly useful when prolonged study of the case is impracticable, but we must not rely on it too implicitly.

**Ptosis of the Colon.**—Thaysen argues that the normal transverse colon may sag to an extent that has hitherto been regarded as pathologic ptosis. In 25 per cent. of all men and 50 per cent. of all women the transverse colon will be found 10 cm. or more below the navel. Even 15 cm. below the navel cannot be accepted as certainly ptosis. The transverse colon changes its position freely so that it sags to a different degree on different days. The feces pass smoothly through the right and left flexures without obstruction, even when kinked. Chronic constipation may exist for ten years or more without entailing the clinical picture of mechanical stenosis, so long as it is not accompanied with functional spasms. But as soon as the flexures are hampered in their movements by adhesions, we have at once the whole clinical picture of stenosis of the bowel. His further research has confirmed his view that habitual constipation is of purely functional origin.

**Paralysis of the Phrenic Nerve.**—Winterstein describes the clinical picture of paralysis of one half of the diaphragm with paralysis of the brachial plexus, comparing a case in a man of 47 with six from the literature.

**Painful Polyperiosteitis.**—Stephan has encountered five cases of what he calls polyperiosteitis hyperaesthetica, all in women between 25 and 43 years old. No treatment has arrested the process. In the course of an average of eight years it has slowly involved the entire skeleton, absolutely incapacitating the women. The hyperesthesia of the skin over the periosteitis process spreads far beyond its actual area, but it does not conform to the segmental or peripheral innervation, and seems rather of reflex origin. The temperature is higher in the evening, and persistently high while a new periosteitis focus is developing. No signs of tuberculosis or syphilis, and no involvement of tissues other than the

periosteum can be discovered. In one of the cases the full clinical picture developed in eight months, and has persisted unmodified to date. Roentgenoscopy shows proliferation of the periosteum at certain points, resembling that with syphilis and rheumatism, although apparently more compact. In a third less pronounced case, there is concomitant otitis media, and in a fourth and fifth recent case, there is chronic frontal sinusitis.

**Suspension Stability of Erythrocytes.**—Löhr charts the time required for sedimentation of the erythrocytes in 110 healthy subjects of all ages. It averaged 300 minutes for the children; from 850 to 1,000 minutes for the women, and from 1,200 to 1,400 minutes for the men. He compares with these normal standards the suspension stability in over 500 clinical cases, and ascribes accelerated sedimentation to an excessive destruction of cells and resorption of the products of destruction. This indicates to what extent the suspension stability can be utilized as an aid in differential diagnosis. It enables us to distinguish an inflammatory from a noninflammatory process, but is not reliable for differentiation of tumors from inflammatory processes or gastric ulcer from cancer, but it may possibly aid in distinguishing between a duodenal ulcer and gallstone mischief, and between inflammatory and non-inflammatory processes in bones.

**Test for Permeability of the Capillary Walls.**—Schrader refers to the punctate hemorrhages which may develop in the arm below an elastic band, or anywhere on the body under a cupping glass. The "endothelium symptom" is observed when the capillary walls are suffering from the action of the toxins of measles, scarlet fever, etc., and during certain forms of endocrine disturbance, as in tardy rachitis. The extent of the area in which the punctate hemorrhages appear is a gauge of the intensity of the toxic action involved. Clinical and experimental study of the phenomenon suggests that it may serve as an indicator of the severity of the action of endogenous or exogenous toxins. Arsphenamin, influenza toxin, the toxins from spirochetes, metabolites, chloroform, etc., display an elective action on the endothelial apparatus, modifying the structure of its cells. The tonus of the endothelial cells may fluctuate secondarily—by way of the spleen—in deranged states of the endocrine system and under exogenous toxic action. The spleen seems to be the "central" for these changes in the endothelium, and in the punctate hemorrhages below an elastic band we have a means for rendering these changes visible. This endothelial symptom is thus an important aid in the diagnosis of many pathologic conditions and in clearing up a number of theoretical questions, as he shows by nineteen typical examples. In certain cases of menorrhagic hemorrhage, the endothelial symptom was pronounced, but it subsided completely as the hemorrhages were arrested by roentgen exposures of the spleen. The endothelium symptom was likewise pronounced in some men in the "climacterium virile," and in ten cases of exophthalmic goiter. In one young woman it subsided with the other symptoms after thyroidectomy.

#### Münchener medizinische Wochenschrift, Munich

Nov. 25, 1921, 68, No. 47

Spontaneous Healing of Scrofuloderma; Tuberculous Immune Substances. A. Jesionek.—p. 1509.

Effect on the Spinal Column of the Swedish Backward Stretch Movement and Klapp's Creeping Exercises. Müller.—p. 1514.

Type of Breathing in Various Sports. W. Kohlrausch.—p. 1515.

Bradycardia in Athletes. H. Herxheimer.—p. 1515.

Energy Quotient, the Nem System and Body Surface. W. Stoeltzner.—p. 1518.

The Quantitative Determination of Ozone. F. Lönne.—p. 1519.

Treatment with Own Blood. Nourney.—p. 1521.

Improved Roentgen Stereoscopy. J. Borggreve.—p. 1521.

The Malignant Granuloma. M. Matthes.—p. 1526.

Dec. 2, 1921, 68, No. 48

Dental Hypoplasia and Congenital Syphilis. Zinsser.—p. 1543.

Ligature of Pelvic Veins in Puerperal Pyemia. Warnekros.—p. 1545.

Abdominal Cesarean Section under Local Anesthesia. Frey.—p. 1548.

Quick Method of Determining the Surface Tension of Small Quantities of Fluids. R. Brinkman and E. van Dam.—p. 1550.

Serologic Tests in Malarial Regions. H. Heinemann.—p. 1551.

Appendicitis in Relation to Weather Conditions. E. Seifert.—p. 1553.

Dietetic Treatment for Biermer's Anemia. Stoeltzner.—p. 1558.

Simple Polychemical Urobilin Reaction. T. Hausmann.—p. 1558.

Simple Gage for Dosage in Deep Roentgen Therapy. Stettner.—p. 1559.

Twitching of Muscles after Epidemic Encephalitis. Brock.—p. 1559.



- Roentgen Treatment of Scleroderma. G. Hammer.—p. 1559.  
Is Arsphenamin Solely for Diagnosis Justified? Oelze.—p. 1560.  
"Artificial Pneumothorax." H. Alexander.—p. 1560.  
Effect of Pregnancy, Birth and Puerperium on Tuberculosis of Lungs and Larynx. E. Kehrer.—p. 1561.  
Treatment of Tuberculosis of Epididymis. V. Schmieden.—p. 1563.

### Wiener klinische Wochenschrift, Vienna

Nov. 10, 1921, 34, No. 45

- Operation for Oblique Inguinal Hernia. H. Salzer.—p. 543.  
Prolapse of Urter Cyst. F. Pendl.—p. 544.  
The Static and Respiratory Excursions of Normal Kidneys. K. Hitzenger and L. Reich.—p. 545.  
Theory of the Meinicke Test (Third Modification). E. Epstein and F. Paul.—p. 546. Comment. R. Bauer and N. Nyiri.—p. 548.  
Dysentery in Vienna. S. Bernstein et al.—p. 549. Conc'n.

Nov. 17, 1921, 34, No. 46

- \*Bacteriophagum Intestinale. O. Bail.—p. 555.  
Toxic Meningitis in Mumps. E. Urbantschitsch.—p. 556.  
Albee Operation in Vertebral Tuberculosis. H. Matheis.—p. 557.  
Deep Roentgen Irradiation in Tuberculosis of the Testis and Genitalia. K. Ullmann.—p. 559.  
"Medicine in Relation to Theology." K. Feri.—p. 561. Reply. Dittel.—p. 561.

Nov. 24, 1921, 34, No. 47

- Treatment of Gastric and Duodenal Ulcer. K. Glaessner.—p. 567.  
Etiology and Diagnosis of Aerogenic Liver Abscess. Massari.—p. 568.  
Effect of Cleavage Products of Tubercle Bacilli in Treatment of Tuberculosis of Bones and Joints. O. Stracker.—p. 569.  
Horse Serum Test in Tuberculosis of the Skin. A. Busacca.—p. 570.  
Cavernitis from Gunshot Injury of Penis. O. Sachs.—p. 571.  
Changes in Cardia in Esophagus Processes. O. Stricker.—p. 572.

**Bacteriophagum Intestinale.**—Bail discusses the conditions under which bacteriophagum multiplication takes place. He estimates the number of "virus germs" by the number of the transparent areas that develop in the culture. If a number of bacteriophagum "virus germs" are left in sterile bouillon at a temperature of 37 C. or at room temperature, they do not multiply; moreover, they slowly decrease, although they never become entirely inactive. If living Shiga bacilli are added, the whole scene changes. However, if only a few bacilli are added, during the first few hours no increase can be noted, whereas if large numbers are added, within a short time there is such a rapid increase in the number of the "holes" that they can be counted only in strong dilutions. If we follow up not only the relative increase of the bacteriophages, but also the fate of the inoculated Shiga bacilli, it will be noted—which at first sight seems contradictory—that in equal dilutions of the bacteriophagum material Shiga bacilli profusely inoculated are destroyed more quickly than when in smaller numbers. The very rapid increase of a corporeal something, dependent on the number of living bacteria present, would of course, explain this. The increase in virulence of the bacteriophagum "virus germs" is also dependent on the number of bacteria. (The bacteriophagum was described in an editorial in THE JOURNAL, July 9, 1921, p. 126, and elsewhere.)

### Zentralblatt für Gynäkologie, Leipzig

Nov. 5, 1921, 45, No. 44

- \*Treatment of Febrile Abortion. R. T. v. Jaschke.—p. 1589.  
\*Frequency of Malignant Uterine Myomas. A. Berreitter.—p. 1592.  
Leukocyte Count During the Menstrual Cycle. L. Caminer.—p. 1601.  
Epidemic Encephalitis in Relation to Pregnancy. C. Hofer.—p. 1604.  
\*Roentgen Treatment of Pruritus Vulvae. O. Schlein.—p. 1607.  
"Critical Remarks on Temporary Sterilization." W. Stoeckel.—p. 1617.

**Treatment of Febrile Abortion.**—Jaschke opposes Winter's demand that evacuation be made to depend on the presence or absence of hemolytic streptococci. In his experience, evacuation is permissible, without regard to the bacteriologic findings, whenever the previously febrile temperature has dropped to normal.

**Frequency of Malignant Uterine Myomas.**—Berreitter, after examining into the statements in the literature on the frequency of malignant uterine tumors, concludes that 0.5 per cent. of uterine myomas may be regarded as malignant. Very frequently, in fact, almost constantly, numerous, irregular giant cells occur in the really malignant myomas, which, therefore, deserve increased attention in the histologic diagnosis of malignity. In Berreitter's six cases of malignant myomas the giant cells were always found.

**Roentgen Irradiation in Vulvar Pruritus.**—Schlein reports eleven cases in which a cure was effected by roentgen irradiation.

In all cases in which there was a secretion, remedies were employed in addition to roentgenography. Most other remedies had had only a palliative effect. Roentgenography effected complete cures, although in refractory cases considerable patience and persistence were required. Thirty exposures were required in one case; two sittings each week, with intervals of a week or two between each series of four exposures.

### Zentralblatt für innere Medizin

Nov. 12, 1921, 42, No. 45

- \*High Blood Pressure and Diabetes. E. Kylin.—p. 873.

**High Blood Pressure and Diabetes.**—Kylin refers to his clinical studies on capillary pressure, which resulted in dividing high blood pressure into two types—a type of arterial blood pressure without increase in the capillary pressure and a type with such increase. The first type he found in uncomplicated benign nephrosclerosis, and the second type in acute diffuse glomerulonephritis. Krogh in his researches in 1920 gave the physiologic basis for this classification by showing that the arterial and the capillary systems, each regulated by its special mechanism, react and function independently of one another. In the present article Kylin discusses the first type, "simple arterial hypertonia." In this type the blood pressure findings vary markedly between morning and evening. The differences may amount to 75 mm. of mercury, the values being usually higher in the evening. From this fact it is evident that instability of the blood vessels is a more pronounced factor in this type of hypertonia than the high blood pressure itself. He noted further that diabetes was frequently associated with hypertonia. In 16 diabetics under 40 the blood pressure was usually around normal, but in 42 above this age, high blood pressure seemed to be the rule. There seems to be some connection between lymphocytosis, decreased tolerance for carbohydrates, and vasolability with a tendency to increases in blood pressure. He is inclined to believe that these phenomena constitute a connected series of pathologic events, and he suspects that all these symptoms are the result of one and the same pathologic process, whose etiology, pathology, symptomatology, prognosis and therapy are not yet sufficiently well known. He is pursuing his investigations further.

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 5, 1921, 2, No. 19

- \*Uremia and Hippuric Acid Output. I. Snapper.—p. 2284.  
Rebellious Malaria. P. H. Kramer.—p. 2289.  
Injection of Cod Liver Oil in Cold Abscesses. Kijzer.—p. 2295.  
Grave Dysentery in Flanders. W. Kremer.—p. 2300.  
Cephalic Presentation with Leg Preceding. L. L. Bakhoven.—p. 2301.  
\*Drugs Credited with Magic Properties. M. A. van An del.—p. 2302.

**Retention of Nitrogen in Relation to Hippuric Acid Elimination.**—Snapper's further research in this line has demonstrated that the elimination of hippuric acid did not vary in cases of contracted kidney even when the nitrogen content of the blood was low. Under test ingestion of 5 gm. of sodium benzoate, a distinct disturbance in the elimination of hippuric acid was observed only in cases in which there was already retention of urea up to 1 gm. per liter of blood serum.

**Classic Magic Remedies.**—Van An del gives a historical sketch of some of the substances which were credited with magic power centuries ago. He discusses in particular unicorns' horns. His review of the literature on this famous remedy fills twelve pages, but he says that he has been unable to discover the reasons for the great importance ascribed to it. He relates that in the sixteenth century the church of St. Maria at Utrecht is said to have cherished two unicorn horns as its most precious possession, and many writers refer to the magic and therapeutic value of pulverized unicorns' horns. The first description of this fabulous animal is found in Pliny's "Historia Naturalis," and it always seemed to be synonymous with strength and wildness, as is evident even in the references in the Bible.

Nov. 12, 1921, 2, No. 20

- Notes on Normal Cell Growth. M. W. Woerdeman.—p. 2368.  
\*Cultivation of Tissues Outside the Organism. W. F. Wassink.—p. 2377.  
\*Plant Tumors. Johanna Westerdijk.—p. 2384.  
\*Serology of Cancer. N. Waterman.—p. 2388.  
\*Experimental and Other Tar Cancers. H. T. Deelman.—p. 2395.  
\*Cancer Questions. W. M. de Vries.—p. 2415.



\*Tumors in Children. J. de Bruin.—p. 2443.  
Cutaneous Epitheliomas. S. Mendes da Costa.—p. 2456.  
Operative Treatment of Tumors. J. H. Kuijjer.—p. 2466.  
Radiotherapy of Cancer. G. F. Gaarenstroom.—p. 2480.  
Organization of Cancer Research. J. Rotgans.—p. 2496.

**Cultivation of Tissue Outside of Organism in Relation to Cancer.**—Wassink says that cultivation of tissue in vitro has answered the question as to the behavior of tissue cells entirely free from nerve and hormone influence. Tissue cells cultivated in vitro can be kept proliferating for a period far surpassing that of the normal span of life of the organism from which they were derived. Further experiments are needed as to what will happen when the tissue cells thus growing outside of the organism are implanted anew in the same or another organism. To date, the tissue cells have always been resorbed at once, except in Rhoda Erdmann's experiments. She succeeded in inducing a tumor growth from them when reimplanted in an animal kept on a vitamin-poor diet. Attempts to cultivate cancer tissue outside of the organism fail on account of the almost inevitable infection of the scrap. It grows less rapidly than normal tissue, and it loses its virulence in a few days. The growth in vitro of mesenchymatous cells and sarcoma cells shows a tendency to dissociation and to migration of the tissue cells. Epithelial cells and carcinoma cells, on the other hand, extend by continuity. This corresponds to what is observed in the clinic, sarcomas spreading by metastasis as the loose cells are swept to a distance by the blood, while carcinoma spreads by simply extending its growth into the adjacent lymphatics.

**Plant Tumors.**—Westerdijk discusses the causes liable to be followed by a tumor growth in plants. She says that *Bacterium tumefaciens*, which seems to be the cause of crown gall in plants, was found repeatedly in soldiers during the war, possibly from eating raw vegetables with tumors of this kind.

**Serodiagnosis of Cancer.**—Waterman ascribes diagnostic importance only and exclusively to the meiostagmin reaction.

**Experimental Tar Cancers.**—Deelman reports research, begun in 1917, painting the ears of rabbits and the backs of white mice with tar three times a week. Twenty-six illustrations show the findings. In 26 of 48 white mice a carcinomatous ulcer developed and in the others a papilloma as the first stage of a cancer that developed later. These tar cancers resemble human cancers much more closely than spontaneous tumors in animals. The malignant growth that developed in Mouse 32 proved to be a spindle cell sarcoma, with metastasis in lung and pleura, although not in glands. This tumor was transplanted into other mice and has grown through eleven generations, to date, forming large tumors in six or seven weeks, the successful inoculations being 4 in 5; 2 in 6; 11 in 21; 13 in 21, and 7 in 10 in the first eight generations. The transplanted carcinomas did not "take," the tissue melting away in the abscess that formed, the primary tumor being always ulcerated. The tar from the gas works where horizontal retorts are used seemed to be more active than tar from vertical retorts, the malignant degeneration occurring sooner.

**Cancer Questions.**—De Vries presents the views of different clinicians on cancer, his own view being that we have reached a dead point in our research on malignant disease. Tar cancers and Fibiger's cockroach cancers seem to be the only progress realized to date. He suggests study of the number of chromosomes in the tissues as these experimental cancers are developing, seeking for atypical forms. Also study of whether a filtrate of these cancers will reproduce cancer, suggesting an invisible virus. He urges also attempts to isolate the special cancer-producing substance in the tar and in Fibiger's spiroptera. By examining for parasites the incipient cancers found at necropsies, the question of a parasitic origin might be settled. The diet in the ten years preceding gastric cancer should be investigated. Cancer of the stomach is exceptionally prevalent in the Netherlands and in Switzerland. In what way does the food in these two countries differ from the food elsewhere? Judging from tar cancers, a period of ten years for cancer in man is not too long for study of the diet from this point of view. The behavior of karyokinesis under roentgen irradiation should

also be studied, as cancer may develop under roentgen exposures. Each organ, and each type of cancer in each organ should be investigated separately.

**Tumors in Children.**—De Bruin found a neoplasm in 0.54 per cent. of the 4,447 children admitted to his internal medicine service at Amsterdam in the last twenty years, while there were 1.3 per cent. cases in the 4,758 children in the surgical ward and 7.32 per cent. among the 20,356 adults in the surgical service. These figures include 14 cases of sarcoma in children in the surgical ward and 10 in the medical service, while no instance of a carcinoma in a child was encountered in either.

### Hospitalstidende, Copenhagen

Nov. 30, 1921, 64, No. 48

\*Polyarthritis. P. Lorenzen.—p. 753.

\*Experimental Tar Cancers. J. Fibiger and F. Bang.—p. 51.

**Classification of Polyarthritis.**—Lorenzen explains that the present classification of polyarthritis is defective. He claims that it should be based on the nature of the infection and on the constitutional predisposition, whether this is from auto-intoxication, or from anomalies in bone or nerve tissue, and, with the latter, whether there is a tendency to neurotrophic or vasomotor derangement or to local contracture or paralysis.

**Experimental Tar Cancers.**—Fibiger's article is published in Society Proceedings, with separate paging. He gives a historical sketch of the cancers that have been found in man from irritation with soot, pitch, etc., from Pott's first description of chimney sweeps' cancer in 1775 to date, and reviews his own work with cancers induced in mice by painting the back with coal tar. He has been more constantly successful in this line than others so far, fully twenty-four of his twenty-six mice developing carcinoma (carcinoma-sarcoma in two) and the other two developing papillomas. One carcinoma was transplanted through four generations in four months, with "takes" in from one to six of the animals in each generation. In Fibiger's 100 cases of spiroptera cancer in the mouse stomach he found only one that had induced metastasis in glands. [A more recent communication from Fibiger reports metastasis in twenty-two of eighty-six mice with tar carcinomas or sarcomas. The metastasis was in the axillary glands and lungs in most of the animals but occasionally in the heart or glands elsewhere. The young mice developed the cancers as readily as the older mice. He adds that Seedorff in his institute at Copenhagen has succeeded in inducing an actual adenocarcinoma in the mammary gland of a mouse treated with minute amounts of tar over a long period; this is the first experimental mammary adenocarcinoma to be published. Fibiger remarked that these tar cancers put the finishing stone to Virchow's theory of the causal importance of irritation in cancer, but the fact that cancers do not invariably develop proves that a predisposition is indispensable. There seems to be also an organ predisposition; he has never succeeded in inducing a spiroptera cancer in the esophagus of the animals, in his hundreds of attempts. Only the stomach develops these spiroptera tumors. He adds that it is dubious whether even aberrant embryonal cells are capable of developing cancer without some extraneous irritation to start them to malignant growth. His article appeared in the *Deutsche medizinische Wochenschrift* of Dec. 1 and 8, 1921.]

He cites about fifteen research workers who between 1889 and 1916 had been striving to induce malignant tumors by repeated application of pitch, tar, anilin, etc. All were on the right track, but none kept up the experiments long enough until the Japanese reported in 1918 their success in twelve of 200 rabbits, with glandular metastasis in three. Fibiger and Bang have obtained positive results in 90 per cent. of the white mice which survived for at least three months after the first painting with the tar. Tsutsui has reported 50 per cent. of "takes," and Bierich up to 60 per cent. Rabbits seem to be less susceptible than white mice. The attempts to induce sarcoma of the liver in rats with cysticercus infection have always failed although sarcoma of the liver is comparatively common in wild rats infested with cysticercus. Only one instance is known in a house mouse.



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## HEMORRHAGE AS A FORM OF ASPHYXIA\*

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### CONCEPTIONS OF HEMORRHAGE

Hemorrhage as a cause of depression and death has heretofore generally been considered from the standpoint of the mechanics of the circulation. The loss of blood has been thought of as bringing about its effects through the fall of blood pressure.

At first, the arteries were thought of as inadequately filled,<sup>1</sup> and the condition was conceived as like vasomotor failure. This was the conception of which Crile<sup>2</sup> was the outstanding advocate. Later the point of view was developed by Henderson,<sup>3</sup> Mann<sup>4</sup> and others, and has now been generally accepted,<sup>5</sup> that, as the peripheral reservoirs are depleted, the venous return to the right heart is lessened,<sup>6</sup> and finally becomes inadequate. As the left heart can discharge into the arterial system only so much blood as runs into the right heart from the veins, the weakened pulse, decreased blood stream, and lowered pressure are necessary consequences of deficient venous return.<sup>7</sup>

This conception of hemorrhage is exemplified in the general belief—a belief which, so far as we are aware, no one heretofore has queried—that some solution can be found for intravenous infusion which may serve to replace a large fraction of the blood. The nature of this belief and its implications are shown by the qualities which are supposed to be needed in such a

solution. Thus, stress is laid on the fact that infusions of saline do not remain in the blood vessels but pass into the tissues; hence the attempt first by Martin H. Fischer<sup>8</sup> and his pupils to introduce a solution which would overcome this particular defect. Emphasis is also placed by some writers on the lack of viscosity in saline solutions, and in consequence their too easy passage through the capillaries. The failure of mere saline solutions to afford anything more than temporary relief is assigned, therefore, to their inadequacy because of these defects in maintaining arterial pressure. It is thus tacitly assumed that a solution with the mechanical and chemical properties to meet these needs would be the much sought ideal for intravenous infusion after hemorrhage, and that it could be used to replace a considerable fraction of the blood. We may term this view the circulatory conception of hemorrhage.

A great amount of experimental work has been done on the acute effects of hemorrhage; and practically all of it has had as its background the circulatory conception defined above. But, we may ask, has the total of this work contributed very much, beyond what Stephen Hales could have told us, to a satisfactory theoretical understanding of the effects of blood loss; or even to defining what, outside the fall of arterial pressure, these effects really are, or to efficient artificial measures for counteracting them? (In the sense in which the word "artificial" is here used, transfusion of blood is a natural, not an artificial therapeutic measure.) It would be going too far to give a negative answer to these questions, but, on the other hand, they can elicit at most a qualified and hesitating affirmative, and this only by neglecting nearly all the effects except the fall of arterial pressure.

The inadequacy of the circulatory conception is illustrated by the recent controversy regarding the value of gum acacia saline solution which Bayliss<sup>9</sup> and his collaborators tried to introduce. The verdict which seems generally to have been returned by surgeons who have tried this infusion has been adverse;<sup>10</sup> at least the beneficial effects seem to fall far short of the results obtained by the transfusion of an equal amount of blood. And yet, judged by the criteria of the circulatory view of hemorrhage, as Bayliss, Erlanger and Gasser<sup>11</sup> and others have shown, acacia saline possesses properties which make it a close approximation to the

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\* Based on work carried out in this laboratory in 1917-1918, under the war gas investigations and aviation investigations of the Bureau of Mines, the Chemical Warfare Service, the Surgeon-General's Office and the Shock Committee of the National Research Council. Our thanks are especially due to Col. F. F. Russell of the Surgeon-General's Office, to whose cordial interest we owe to a large extent the opportunity and personnel of this investigation.

1. Von den Velden, R.: *Arch. f. exper. Path. u. Pharmacol.* **61**: 37, 1909 (bibliography on hemorrhage).

2. Crile, G. W.: *Surgical Shock*, 1899; *Keen's Surgery* **1**: 79, 922, 1906.

3. Henderson, Yandell: *Am. J. Physiol.* **21**: 126, 1908; **23**: 345, 1909; **27**: 152, 1910.

4. Mann, F. C.: *Bull. Johns Hopkins Hosp.* **25**: 205, 1915; *Surg., Gynec. & Obst.* **21**: 430, 1915.

5. Dale, H. H.: *Harvey Lectures*, 1919-1920, p. 26.

6. Henderson, Yandell, and Barringer, T. B.: *Am. J. Physiol.* **31**: 288, 352, 1913. Henderson, Yandell, and Harvey, S. C.: *Ibid.* **46**: 533, 1918. Henderson, Yandell, and Haggard, H. W.: *J. Pharmacol. & Exper. Therap.* **11**: 189 (April) 1918.

7. Meek, W. J., and Eystes, J. A. E.: *Am. J. Physiol.* **56**: 1 (May) 1921.

8. Hogan, J. J., and Fischer, M. H.: *Kolloidchem. Beihefte* **3**: 385, 1912. Fischer, M. H.: *Oedema and Nephritis*, Ed. 3, 1921, p. 403.

9. Bayliss, W. M.: *Reports to the Special Investigation Committee on Surgical Shock*, No. 1, London, 1917; No. 3, 1918; *Intravenous Injection in Wound Shock*, London, 1918; republished in *Medical Research Committee Reports, Wound Shock and Hemorrhage*, London, 1919.

10. Bernheim, B. B.: *Hemorrhage and Blood Transfusion in the War*, J. A. M. A. **73**: 172 (July 19) 1919.

11. Erlanger, J., and Gasser, H. S.: *Ann. Surg.* **69**: 389 (April) 1919 (good bibliography). Erlanger, J.: *Physiol. Rev.* **1**: 177, 1921.



solution which, if that view were adequate, should be the ideal. This discrepancy certainly suggests strongly that the circulatory conception of hemorrhage, while containing much of value, must be in some essential feature incomplete.

In the light of the observations to be here reported, the inadequacy seems to consist in neglecting two closely related elements: First, a sufficient rôle has not been assigned to the loss of red corpuscles.<sup>12</sup> Second, the effects of hemorrhage must be considered, not only from the standpoint of the circulation, but also from that of respiration and vital energetics. The red corpuscle is the essential connecting link between the mechanism of breathing and the vital oxidation in the tissues. Without an adequate oxygen and carbon dioxid transporting power in the blood, pulmonary ventilation and heart action may be pushed to exhaustion, as in air hunger; and yet the tissues may at the same time suffer asphyxia. Indeed, air hunger is a symptom of this asphyxia. Furthermore, the recognition of hemorrhage as a form of asphyxia makes immediately available for application to its problems the mass of new knowledge which has accumulated in recent years regarding the various forms of slow or partial asphyxia. For instance, the recent advances in our understanding of the condition from which the aviator suffers,<sup>13</sup> and in that induced by carbon monoxid,<sup>14</sup> become thus, with slight modification, applicable to the problems of hemorrhage. It is now known that it is oxygen<sup>15</sup> which fundamentally and quantitatively controls the adjustment of the alveolar carbon dioxid, the volume of air breathed at rest, and the blood alkali. Simple quantitative methods are now available for the observation of respiration<sup>16</sup> and for determining the gases and alkali of the blood; and these methods are thus made applicable to the estimation and prognosis of hemorrhage.

Before turning to this special topic, however, we desire to present certain data bearing upon the general field of hemorrhage and its treatment.

#### GENERAL PURPOSE AND METHODS OF EXPERIMENTATION

The data are taken from a very large mass of material collected in this laboratory for the Shock Committee of the National Research Council during the war. The material was not originally collected with any particular bearing upon the special topics to be here stressed. It is, therefore, of so diffuse a character and so far parallels the work of others that we shall for the most part merely summarize it, going into detail only on the particular topics of respiration and blood alkali, so as to show the similarities to, and the differences from, other forms of asphyxia.

All of the experiments were performed on dogs. No general anesthetic was used, as all drugs of that class render respiration abnormal; but care was taken to avoid even the slightest excitement, anxiety or pain. The blood was drawn from the femoral artery, which had been exposed under cocain. Its carbon dioxid content was determined and also the carbon dioxid capacity

after equilibration with alveolar air, to estimate the blood alkali. Respiration was measured by means of a mask, made air tight over the nose and mouth with adhesive plaster, connected with inspiratory and expiratory valves, and a gas meter of low resistance, or a large counterpoised spirometer.

The general data of fifty-three experiments are contained in Table 1.

TABLE 1.—RESULTS OF VARIOUS DEGREES OF HEMORRHAGE (FIRST EIGHTEEN EXPERIMENTS) AND EFFECTS OF SOME TREATMENTS

Experiment No.	Body Weight, Kg.	Hemorrhage, C.e.	Hemorrhage		Arterial Pressure at End of Hemorrhage, Mm. Mercury	Outcome
			Body Weight	Per Cent.		
1	16.5	740	4.5		20	Death, 30 minutes
2	12.5	650	5.5		22	Death, 30 minutes
3	9.5	470	4.8		22	Death, 20 minutes
4	9.6	478	5.0		23	Death, 45 minutes
5	20.0	1,100	5.5		23	Death, 40 minutes
6	11.0	417	3.8		25	Death, 45 minutes
7	19.0	1,096	5.8		28	Death, 3 hours
8	9.0	470	5.2		28	Death, 2 hours
9	16.7	620	3.9		28	Lived
10	14.0	970	5.5		28	Lived
11	12.7	600	4.7		28	Lived
12	19.5	620	3.2		30	Lived
13	20.0	900	4.5		30	Lived
14	9.0	408	3.2		30	Lived
15	15.5	639	4.1		30	Lived
16	18.0	750	4.2		38	Lived
17	6.7	540	3.2		48	Lived
18	10.0	240	2.4		50	Lived
Intravenous Injection of Physiologic Sodium Chlorid Solution Equal in Volume to Blood Previously Drawn						
19	12.9	340	2.9		30	Lived
20	12.0	500	4.2		30	Lived
21	13.2	520	4.0		30	Death, 3 hours
22	9.2	400	4.3		30	Death, 4 hours
23	12.0	600	5.0		35	Death, 3 hours
24	16.5	920	5.8		30	Lived
25	18.0	680	3.8		30	Lived
26	9.5	510	5.6		30	Lived
Intravenous Injection of 2 Per Cent. Sodium Bicarbonate Equal in Volume to Blood Previously Drawn						
27	25.0	1,090	4.9		30	Lived
28	17.0	729	2.9		25	Lived
29	17.5	920	5.4		25	Lived
30	13.0	640	5.0		22	Death, 14 hours
31	14.0	600	4.4		27	Lived
32	12.0	610	4.5		25	Lived
Morphin, 0.02 Gm. per Kilogram at End of Hemorrhage						
33	7.5	224	3.0		52	Lived
34	7.8	240	3.1		40	Lived
35	10.0	480	4.8		30	Death, 2 hours
36	9.7	510	5.2		30	Death, 1' 40"
37	12.0	609	5.0		30	Death, 7 hours
Morphin (as above) and Saline (as above)						
38	25.0	1,060	4.8		30	Lived
39	14.6	620	4.5		28	Lived
40	10.1	506	5.0		26	Death, 2 hours
Inhalation of Carbon Dioxid (5 to 9 Per Cent.) in Air until Death or, at Most, One or Two Hours						
41	16.5	740	4.6		30	Death, 4 hours
42	11.0	485	4.5		30	Death, 6 hours
43	10.5	335	3.3		30	Death, 1 hour
44	10.0	560	5.6		42	Death, 50 minutes
45	7.1	390	5.6		30	Death, 1' 40"
46	10.4	285	2.8		35	Death, 2 hours
47	9.5	402	4.3		25	Death, 40 minutes
Intravenous Injection of Gum Acacia in 2 Per Cent. Sodium Bicarbonate Solution, in Volume Equal to Blood Previously Drawn						
48	11.1	659	5.9		32	Lived (dead next day)
49	10.0	520	5.2		30	Lived (dead next day)
50	16.0	760	5.0		30	Lived
51	7.0	310	4.4		28	Lived
52	9.8	500	5.1		26	Lived (dead next day)
53	10.4	490	4.9		23	Death, 2 hours

#### A STANDARD HEMORRHAGE

A standard hemorrhage was first worked out. It was established that when an animal was bled 0.25 per cent. of its body weight each five minutes during a period of from one to two hours until the blood pressure fell to about 28 mm. and the animal was then left to itself, the chances were about equal as to whether the subject would die or would recover spontaneously.

12. Penfold, W. J.: *M. J. Australia* 2: 307 (Sept. 25) 1920; quoted from *Red Cell Refusion in the Production of Therapeutic Serums*, editorial, *J. A. M. A.* 76: 1580 (June 4) 1921.

13. Henderson, Yandell: *Science* 49: 431, 1919; Harvey Lectures, 1918-1919. Schneider, E. C.: *Physiol. Rev.* 1: 631, 1921.

14. Haggard, H. W., and Henderson, Yandell: *J. Biol. Chem.* 47: 421 (July) 1921; *The Treatment of Carbon Monoxid Poisoning*, *J. A. M. A.* 77: 1065 (Oct. 1) 1921.

15. Henderson, Yandell: *J. Biol. Chem.* 43: 29 (Aug.) 1920.

16. Henderson, Yandell: *Respiratory Experiments on Man*, *J. A. M. A.* 62: 1133 (April 11) 1914.



All those that were bled to even a slightly less degree survived to the next day and then were improving. All those which were bled at this rate to even a slightly greater degree, that is, to even a few millimeters lower arterial pressure, died within two or three hours or less time after termination of the hemorrhage.

Such an experimental hemorrhage is, of course, essentially arbitrary and not, as might at first be thought, an absolute standard. The three elements—amount of blood drawn, the rate of loss, and the terminal arterial pressure—are so interrelated that a variation of any one would alter the others. Thus, doubtless, a slower withdrawal of less blood to a higher terminal pressure would also be fatal, as the recuperative processes of the organism would be strained for a longer time. The values here used are merely quick and convenient.

The arterial pressure was taken by means of a mercury manometer connected temporarily to the femoral artery. It was found important that the fluid in the cannula should be merely sodium chlorid solution. The effect of introducing inadvertently from the manometer even a small amount of sodium citrate after hemorrhage was almost immediately fatal—a fact of some importance, perhaps, in relation to infusions of citrated blood. Certainly, after hemorrhage no more citrate than absolutely necessary to prevent clotting should be used. A deficiency of calcium as a sequel of hemorrhage is perhaps to be expected; and as citrate presumably acts also on this element in the blood, it would exacerbate any disturbance of the acid-alkali or other balance.

It will be seen from the data in Table 1 that the amount of hemorrhage, at the rate adopted, required to bring an animal to the danger point (28 or 30 mm. arterial pressure) is a variable individual characteristic. The loss of blood varied in different subjects from 3.8 to 5.8 per cent. of body weight before the critical level of pressure was reached, indicating presumably wide individual variations in blood volume.

#### THE EFFICACY OF VARIOUS TREATMENTS

Having established this standard hemorrhage, we tried out various treatments in order to determine whether and to what extent they improve the chances of recovery.

Morphin, even in moderate doses, as is seen in Experiments 33 to 40, inclusive, markedly increased the mortality among animals that had been subjected to this standard and nearly fatal hemorrhage. This drug quiets respiration; but after the blood alkali has been decreased, either by overbreathing or otherwise, very active respiration is doubtless necessary to prevent excessive rise of the  $\text{H}_2\text{CO}_3:\text{NaHCO}_3$  ratio, or relative acidosis. At the same time the blood, owing to lack of corpuscles after hemorrhage, cannot produce sodium bicarbonate from sodium chlorid as readily as it does normally under increased carbon dioxid tension.

Inhalations of carbon dioxid were tried in six experiments (41 to 47). They stimulated respiration and induced marked improvement in the general condition of the animals for a short time, but, if the inhalation was pushed at all, the animals invariably died by vagal inhibition of the heart. This, according to our experience in related lines of work, is a mode of death indicating that the  $\text{C}_\text{H}$ , or  $\text{H}_2\text{CO}_3:\text{NaHCO}_3$  ratio, of the blood has been raised abnormally high.<sup>17</sup> Probably

somewhat the same explanation as that for the results with morphin applies here also. The muscular exertion of deep breathing under carbon dioxid likewise increases the demand for oxygen. Our findings here reported are thus different in result from those which we have obtained with carbon dioxid therapy in post-operative depression without hemorrhage.<sup>18</sup>

Intravenous infusion of several of the common fluids was also tried. The volume of the infusion was in all cases the same as that of the blood previously withdrawn from the animal. In effect we have thus tested the extent to which the fluid used can perform the functions of blood. Or, more truly, we have thus tested the question of the superiority of fluids supplied from the outside (i. e., intravenously) over that which will be spontaneously drawn from the tissues, after a hemorrhage, when the subject is given water to drink but otherwise is merely left to itself.

Physiologic sodium chlorid solution was injected after hemorrhage in eight animals (Experiments 19 to 26, inclusive). The results tabulated show that it was only temporarily beneficial. In animals which had been brought to the critical point it accomplished in all cases, as might be expected, an intermediate improvement and some prolongation of life. But the evidence presented in the table does not indicate that it considerably improved the chance of recovery.

Sodium bicarbonate solution (2 per cent.) was tried on six subjects (Experiments 27 to 32, inclusive) and was found to make a much better showing than physiologic sodium chlorid solution, as Howell and others found.<sup>19</sup> Our observations led us to believe that the reason for this relative advantage of an alkaline infusion lies in its quieting effect on respiration through its influence on the  $\text{H}_2\text{CO}_3:\text{NaHCO}_3$  equilibrium of the blood. We shall develop this topic farther on.

Acacia solution, made up as directed by Bayliss,<sup>9</sup> was found distinctly beneficial immediately after injection. Those animals which received it were, however, usually found dead the next morning. On the whole, we are inclined to regard this fluid as distinctly superior to sodium chlorid solution. Possibly also it is better than sodium bicarbonate alone, although we believe that it owes a part of its advantages to the alkali which it contains and its effects on respiration. The muscular exertion and overventilation of air hunger after hemorrhage are the finally fatal factors, through increase of demand for oxygen combined with oxygen lack and disturbance of the  $\text{H}_2\text{CO}_3:\text{NaHCO}_3$  ratio. The restoration of arterial pressure also tends to quiet the breathing.

In contrast and as control to these experiments, let us suppose that in an equal number of animals, within an hour, or at most two, after the beginning of hemorrhage, the same volume of blood as that which had been withdrawn has been reinfused. One knows *a priori* that—neglecting gross mishaps or some alteration or incompatibility in the blood restored—the result would have been almost 100 per cent. complete recoveries.

From these experiments as a whole it appears that the most that infusion of artificial solutions can accom-

18. Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: The Therapeutic Use of Carbon Dioxid After Anesthesia and Operation, *J. A. M. A.* **74**: 783 (March 20) 1920; The Acapnia Theory, *ibid.* **77**: 424 (Aug. 6) 1921.

19. Howell, W. H.: *Am. J. Physiol.* **4**: 14, 1900; Vaughan's Anniversary Volume, 1903, p. 51. Dawson: *Am. J. Physiol.* **7**: 1, 1905. Seelig, Tierney and Rodenbaugh: *Am. J. M. Sc.*, August, 1913. Mann, F. C.: Further Experimental Study of Surgical Shock, *J. A. M. A.* **71**: 1184 (Oct. 12) 1918. Gesell, R.: *Am. J. Physiol.* **47**: 468 (Jan.) 1919.

17. Haggard, H. W.: *Am. J. Physiol.* **56**: 390 (July) 1921.



plish is replacement of plasma more quickly and perhaps more completely than the body itself could manage by withdrawing fluid from the tissues. On the whole, the results obtained with the infusions were scarcely better than with no treatment at all. This fact points to the idea that the really significant element in hemorrhage is the loss of red corpuscles. The superiority of blood transfusion over the infusion of any artificial solution, as noted by surgeons, finds its explanation, therefore, in the fact that the former supplies corpuscles. It is the corpuscles which transport oxygen between the lungs and tissues. It is the corpuscles which, to an almost equal degree, enable the blood to transport carbon dioxide, partly within themselves and partly through their interaction on the plasma. It is the corpuscles which, to a large extent at least, produce the alkali of the plasma from sodium chlorid.

We are thus led to the conclusion that it is the decrease in the capacity of the blood to perform these functions, and not chiefly the fall of arterial pressure, which is the critical factor in hemorrhage. The low arterial pressure after hemorrhage is perhaps to be regarded as an important symptom, rather than as itself the determining causative agent, since some forms of extremely low blood pressure without hemorrhage (e. g., peptone shock<sup>20</sup>) are borne relatively easily and are successfully survived.

#### THE MEANING OF AIR HUNGER

In this laboratory, coincidently with the work on hemorrhage there were under way studies on asphyxia of various forms. Certain similarities between the symptoms seen under low oxygen<sup>13</sup> and under carbon monoxid asphyxia,<sup>14</sup> on the one hand, and those occurring during and after hemorrhage, on the other, caught our attention.

These observations led us to believe that significant information could be gained from noting the reactions of hemorrhage on respiration. It is customary, both experimentally and clinically, to attempt to express the severity of hemorrhage in terms of arterial pressure (Wiggers,<sup>21</sup> Erlanger<sup>11</sup>) and we have followed this practice also. But the facts to be discussed below indicate that the quantity of respiration, that is, the volume of air breathed per minute, is at least as valuable, and perhaps even more significant as an index on which to base diagnosis, and particularly prognosis.

Air hunger, that is, vigorous hyperpnea, as a recognized phenomenon of rapid exsanguination dates at least from Homer, whose heroes gasped when dying

from hemorrhage. It is as unescapable an observation as the dyspnea produced by inhaling pure nitrogen or nitrous oxid. But moderate alterations of the volume of air breathed are not perceptible either to the subject or even to an observer. The volume of air breathed per minute cannot be estimated significantly, any more than can arterial pressure, without measurement by appropriate instruments. In relation to respiration, medicine and surgery stand today just where they stood a decade or so ago regarding arterial pressure. The measurement of arterial pressure by means of the sphygmomanometer has given a sweep and clarity to underlying conceptions regarding arterial pressure which the once boasted "tactus eruditus of the trained finger" never could. One may predict with certainty that a similar and greatly needed clearing and strengthening of conceptions with regard to respiration will soon occur; for spirometers and gas meters are being widely introduced in laboratories and hospitals.

The volume of air breathed by a normal man or animal at rest is a very definite function.<sup>22</sup> Even a small percentage increase is a distinct indication of being below par, and a larger variation is an indication of a definitely abnormal condition. For instance, we needed deep pulmonary air with which to equilibrate blood for the determination of its available alkali; and this led to the following observation: In the group of healthy young men drafted as soldiers and assigned to this laboratory, who carried out the experiments on which this paper is based, it was common to note that after a night "on their own" they could not "blow 5.5." In other words, the alveolar air fell below a carbon dioxide tension of 5.5 per cent.; and

the volume of breathing is the reciprocal of the alveolar air. None of them, either to themselves or to others, seemed to be breathing more than normally. Indeed, 100 per cent. increase in the resting breathing may be taken as, roughly, the lower limit which is just perceptible subjectively; and perhaps even considerably more would escape the observation of a diagnostician relying merely on the respiratory equivalent of the *tactus eruditus*.

As an illustration of the lack of the quantitative element in the current conception of respiration, it may here be mentioned that two eminent physiologists have recently stated that, desiring to test the acapnia theory, they asked surgeons at the front whether the wounded breathed excessively, and that the invariable answer was in the negative. But, as we have pointed out above, 100 per cent. increase of breathing is often scarcely perceptible to mere observation; and yet, such an increase involves necessarily a 50 per cent. decrease of the carbon dioxide tension in the alveolar air, since the dilution of the carbon dioxide in the alveolar air

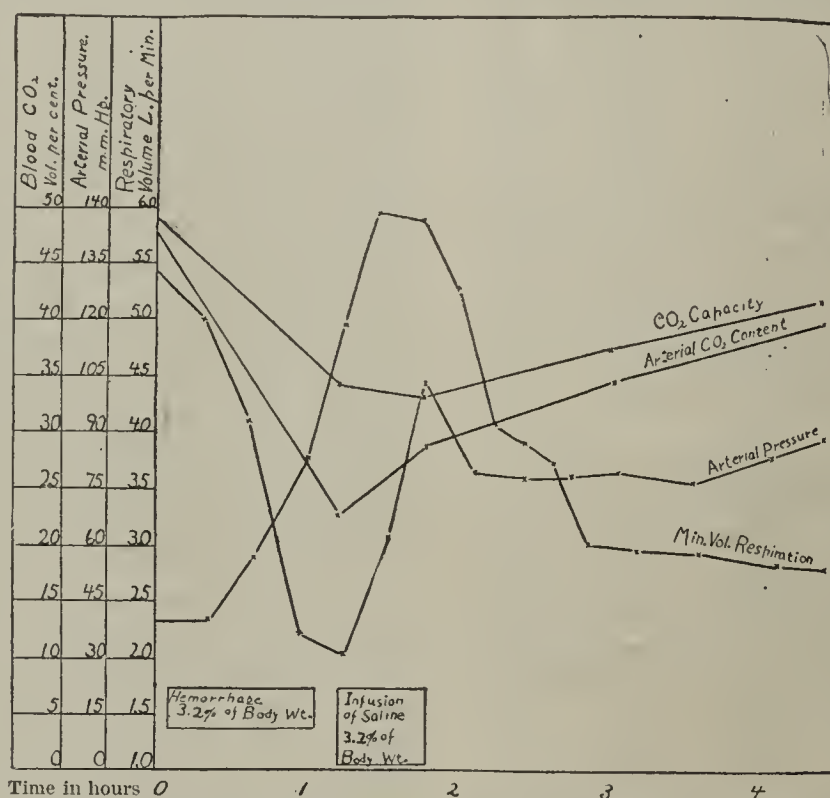


Chart 1.—Standard hemorrhage followed by infusion of saline: Dog, male, 12.9 kg., bled at the rate of 0.25 per cent. of body weight each five minutes until the arterial pressure was 30 mm. A total of 413 c.c. of blood was drawn. At the conclusion of the hemorrhage the same volume of saline was administered intravenously. Arterial pressure, minute volume of respiration, arterial carbon dioxide content, and the carbon dioxide capacity of the blood were recorded as shown.

20. Chittenden, R. H.; Mendel, L. B., and Henderson, Yandell: *Am. J. Physiol.* 2: 142, 1899.

21. Wiggers, C. J.: *The Pathologic Physiology of the Circulation During Hemorrhage*, *Arch. Int. Med.* 14: 33 (July) 1914; *Circulatory Failure*, *J. A. M. A.* 70: 508 (Feb. 23) 1918.

22. Haldane, J. S., and Priestley, J. G.: *J. Physiol.* 32: 225, 1905.



varies with the tidal air, to which the variations of the dead space also are nearly proportionate. And, furthermore, this also involves the ultimate development, as we have shown,<sup>23</sup> of a 50 per cent. decrease of blood alkali—a condition scarcely compatible with the continuance of life. No one would accept testimony that patients had no fever if the witness had no thermometer. Part of the purpose of this paper is to point out that the volume of breathing, per unit gas exchange, is as definite a normal quantity as body temperature, and that no reliable statement or conception can be based on anything less than accurate measurement.

While these observations were being made in this laboratory in 1918, candidates for the aviation service were being tested at the Mineola laboratory by a rebreathing, or low oxygen method introduced by one of us for their ability to withstand great altitude.<sup>24</sup> In the course of this work, Schneider<sup>25</sup> and his collaborators made the new and extremely important observation that even a slight decrease in the oxygen content of the inspired air causes in most men a corresponding increase in the volume of breathing; and this augmentation increases with the oxygen deficiency. Simultaneously we made the same observation on dogs both under low oxygen<sup>26</sup> and under carbon monoxid asphyxia.<sup>14</sup>

We have now to report that virtually the same relation holds true between hemorrhage and respiration. Thus, we find that even a small loss of blood from the circulation—an amount which we had previously supposed would be quite negligible for a healthy subject—induces a distinct increase in the volume of air breathed per unit of oxygen absorbed; and this augmentation of pulmonary ventilation increases in greater and greater degree with each successive blood loss up to extreme air hunger. Thus, the volume of air breathed per minute is an index of the severity of the hemorrhage.

Furthermore, we find that the quantity of breathing, that is, the volume of air per minute, is of marked value for prognosis. As the reparative processes of the body come into play after hemorrhage, and prove adequate or inadequate, the volume of breathing varies correspondingly. Thus if, apart from merely temporary variations, the volume of breathing gradually lessens, the animal recovers. If it progressively increases, the outcome is always fatal. Somewhat the same relation of breathing and recovery holds in our

experiments with the various therapeutic procedures (other than morphin), although with the exception of alkaline solution the beneficial effects were usually merely temporary.

It may seem at first that the volume of air breathed per minute would be, however useful as a basis for prognosis, merely a concomitant of the fundamental processes leading to recovery or death. We believe, however, that the respiratory activity is not merely a concomitant, but also a cause, of progression downward after a critical hemorrhage. Two reasons appear for this: The first is that vigorous breathing involves a considerable muscular exertion and a corresponding demand for additional oxygen—a demand which the organism after hemorrhage is unfitted to supply. The second has to do with the respiratory control of the blood alkali, a topic which we have discussed in a number of papers<sup>23</sup> in other connections recently, and which in its bearings here will be dealt with in the next section.

In the accompanying charts and their legends are shown the data of two typical experiments. In Chart 1, the breathing under hemorrhage increased from 2.4 to 6.0 liters a minute, or 150 per cent. The effect of the acacia solution administered in the second case in quieting respiration is very striking, and the corresponding recovery of blood alkali is noteworthy. The effects on arterial pressure seem to follow those on respiration in Chart 2, while in the preceding experiment, in which physiologic sodium chlorid solution was given, the contrary relation holds true. We are inclined to believe that a large part of the benefit derived from restoration of arterial pressure depends on the quieting effect on respiration in consequence of which the disturbances in the acid-alkali equilibrium of the blood, to be discussed in the next section, are prevented or diminished.

#### THE CAUSE OF DECREASED BLOOD ALKALI

Associated with the augmentation of breathing after extensive hemorrhage, there occurs also a marked and progressive decrease in blood alkali as measured by the carbon dioxid combining power of the blood. This has been observed experimentally by Milroy,<sup>27</sup> and by Evans,<sup>28</sup> and on wounded soldiers by Cannon,<sup>29</sup> by whom it was assumed (erroneously, we think) to be due to the acidotic process.

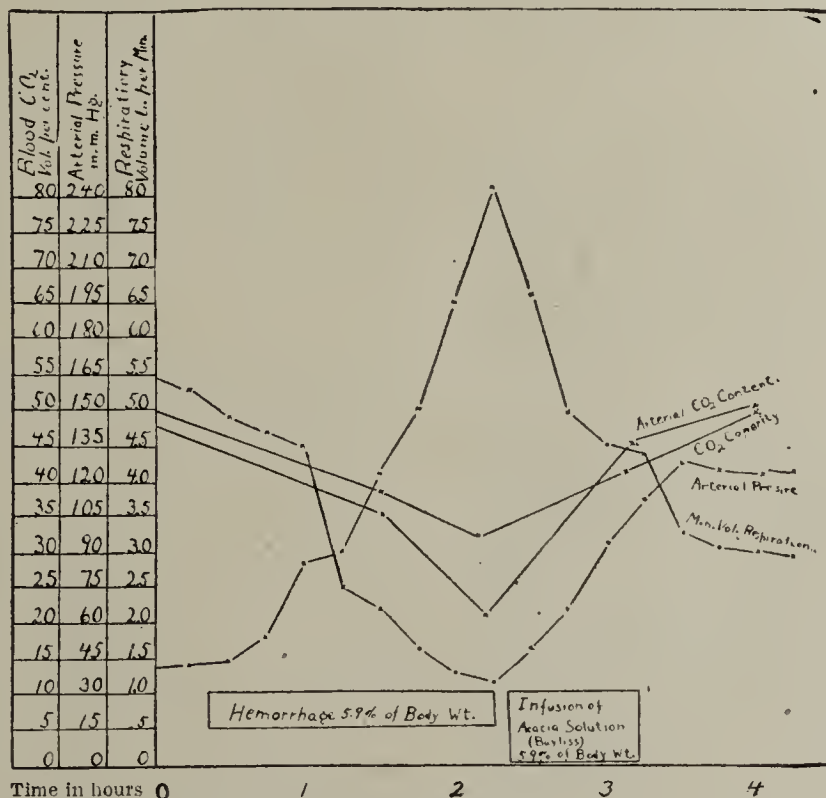


Chart 2.—Standard hemorrhage followed by infusion of acacia solution (Bayliss): Dog, male, 11 kg., bled at the rate of 0.25 per cent. of body weight each five minutes until the arterial pressure was 32 mm. as shown. A total of 659 c.c. of blood was drawn. At the conclusion of the hemorrhage, the same volume of acacia solution was administered intravenously. Arterial pressure, minute volume of respiration, arterial carbon dioxid content, and the carbon dioxid capacity of the blood were recorded.

23. Henderson, Yandell, and Haggard, H. W.: *J. Biol. Chem.* **33**: 333 (Feb.) 1918; **39**: 163 (Aug.) 1919.

24. Henderson, Yandell, and Seibert, E. G.: Organization and Objects of the Medical Research Board, Air Service, U. S. Army, *J. A. M. A.* **71**: 1382 (Oct. 26) 1918.

25. Schneider, E. C.: Physiologic Observations and Methods, *J. A. M. A.* **71**: 1384 (Oct. 26) 1918. Lutz, B. R., and Schneider, E. C.: *Am. J. Physiol.* **50**: 280 (Dec.) 1919.

26. Haggard, H. W., and Henderson, Yandell: *J. Biol. Chem.* **43**: 3, 15 (Aug.) 1920.

27. Milroy, T. H.: *J. Physiol.* **51**: 259 (Sept.) 1917.

28. Evans, C. L.: *Brit. J. Exper. Path.* **2**: 105, 1921.

29. Cannon, W. B.: Acidosis in Cases of Shock, Hemorrhage and Gas Infection, *J. A. M. A.* **70**: 531 (Feb. 23) 1918; A Consideration of the Nature of Wound Shock, *ibid.* **70**: 611 (March 2) 1918; The Course of Events in Secondary Wound Shock, *ibid.* **73**: 174 (July 19) 1919; Studies in Experimental Traumatic Shock, IV, Evidence of a Toxic Factor in Wound Shock, *Arch. Surg.* **4**: 1 (Jan.) 1922.



As a consequence of our standard hemorrhage, a fall of alkali of 33 per cent. was common, and 50 per cent. or even more was observed in some cases. As measures of blood alkali, analysis for total carbon dioxid were made on the arterial blood as drawn, without exposure to air; and also after equilibrating a sample of this blood with 40 mm. of carbon dioxid (normal human alveolar air of 5.5 per cent. carbon dioxid). As the direct arterial figures give a truer indication of the alkali actually in use in the blood than do those after equilibration to 40 mm. of carbon dioxid, the former alone are given in Table 2; but the latter would show the same relations, as may be seen from the parallelism between the curves for carbon dioxid content and carbon dioxid capacity in Charts 1 and 2.

This fall of blood alkali is either itself of critical importance, or is intimately associated with other processes of importance; for in nearly all of these experiments, as seen in Table 2, in which the carbon dioxid content of the blood failed to rise again, or continued to decrease, after the termination of hemorrhage, death resulted. A tendency to rise and even a cessation of fall, on the contrary, were indications of ultimate recovery.

Obviously, the decrease in blood alkali was in some way the result of the deficient oxygen transporting power of the circulation. But through what process does the oxygen deficiency act? It might induce a production of strong acids in the tissues which, by escaping into the blood, would neutralize sodium bicarbonate. This is the acidotic process which is generally assumed to occur.

In our previous work on asphyxia<sup>30</sup> we have shown, however, that this conception is erroneous as regards asphyxia both from low oxygen in the inspired air and from carbon monoxid; and, indeed, that it is almost the direct opposite of what really occurs. Oxygen deficiency first induces excessive breathing before any considerable fall of blood alkali occurs. This ventilates off an abnormally large amount of carbon dioxid, and leaves the blood abnormally alkaline. In compensation, alkali then begins to disappear from the blood. This is the acapnia process. We have shown under conditions other than hemorrhage that down to a certain point the process is reversible, through depression of breathing and high ratio of  $H_2CO_3:NaHCO_3$  or relative acidosis, thus recalling alkali to the blood. Beyond that point the process is not reversible, but inevitably fatal.<sup>31</sup>

All of our evidence indicates now that under progressive hemorrhage the volume of breathing increases exactly as if the subject were inhaling a progressively lowered pressure of oxygen. By this overventilation, the carbon dioxid content of the blood is reduced; and in compensation to this condition of acapnia and relative alkalosis, the alkali of the blood also falls. Thereafter, any depression of breathing, indeed, anything less than 100 or 200 per cent. above the normal volume of respiration, involves an abnormally high ratio of  $H_2CO_3:NaHCO_3$ , the so-called relative acidosis. It is, indeed, by means of a relative acidosis that the organism attempts to recall alkali to its blood. But, owing to the deficiency of red corpuscles, it cannot recall alkali as efficiently as normally; for it cannot make the requisite decrease of breathing without intensifying the asphyxia.

We do not desire to theorize regarding the part played by acapnia and low alkali in determining recovery or a fatal outcome. The interaction of processes is very complicated. But our data justify these asser-

TABLE 2.—ALTERATIONS OF CARBON DIOXID CONTENT OF ARTERIAL BLOOD AS INDICATIONS OF BLOOD ALKALI AFTER VARIOUS DEGREES OF HEMORRHAGE; AND THE RELATIONS OF SUBSEQUENT INCREASE OR DECREASE OF ARTERIAL CARBON DIOXID AND ALKALI TO RECOVERY OR DEATH

Experi- ment No.	Carbon Dioxid Content of Arterial Blood				Outcome
	Before Hemor- rhage, per Cent. by Volume	At Termi- nation of Hemorrhage, per Cent. by Volume	After Hemorrhage		
			per Cent. by Volume	Hours and Minutes	
1	47	29	..	.. ..	Death, 30 minutes
2	50	24	12	0 30	Death, 30 minutes
3	53	16	..	.. ..	Death, 20 minutes
4	42	28	16	0 30	Death, 45 minutes
			13	0 50	
5	40	26	..	.. ..	Death, 40 minutes
6	44	18	15	0 45	Death, 45 minutes
7	40	23	14	1 45	Death, 3 hours
8	47	21	..	.. ..	Death, 2 hours
9	47	36	27	1 30	Lived
			37	3 00	
			40	24 00	
11	51	28	22	0 45	Lived
			37	2 00	
			51	24 00	
12	48	30	..	.. ..	Lived
13	43	29	38	1 00	Lived
15	45	32	36	2 00	Lived
16	55	44	47	2 00	Lived
			49	24 00	
17	44	42	31	1 20	Lived
			44	3 00	
			58	24 00	
18	53	35	47	24 00	Lived
Intravenous Injection of Physiologic Sodium Chlorid Solution Equal in Volume to Blood Previously Drawn					
20	47	23	30	0 45	Lived
			37	1 45	
			43	24 00	
22	50	26	11	0 45	Death, 4 hours
			19	1 15	
			30	1 40	
			19	3 10	
23	42	24	17	0 45	Death, 3 hours
			21	1 40	
			19	3 40	
24	40	30	13	0 15	Lived
			24	1 15	
			20	2 15	
26	37	19	14	0 20	Lived
			22	1 10	
			24	2 20	
Intravenous Injection of 2 Per Cent. Sodium Bicarbonate Equal in Volume to Blood Previously Drawn					
27	43	30	88	0 30	Lived
			43	24 00	
28	51	20	84	0 35	Lived
			57	24 00	
29	45	32	84	1 30	Lived
			74	2 00	
			62	24 00	
30	51	22	83	2 00	Death 14 hours
Morphin and Saline					
30	47	32	43	0 30	Lived
			38	24 00	
Inhalation of Carbon Dioxid (5 to 9 Per Cent.) in Air until Death or, at Most, One or Two Hours					
41	52	23	42	1 00	Death, 4 hours
			36	3 00	
42	36	33	..	.. ..	Death, 6 hours
43	48	36	42	1 00	Death, 1 hour
44	53	46	50	0 30	Death, 50 minutes
45	43	29	40	1 00	Death, 1' 40"
47	43	30	42	0 40	Death, 40 minutes
Intravenous Injection of Gum Acacia in 2 Per Cent. Sodium Bicarbonate Solution, in Volume Equal to Blood Previously Drawn					
48	44	13	40	1 15	Lived (dead next day)
			48	2 30	
49	47	27	41	1 00	Lived (dead next day)
52	44	29	45	2 00	Lived (dead next day)
			41	24 00	

tions of fact: Whenever the volume of breathing continues to increase after hemorrhage, acapnia develops, the blood alkali falls progressively, and death results. When, on the contrary, the volume of air breathed

30. Henderson, Haggard and Coburn (Footnotes 13, 14, 15, 18, 23 and 26).  
31. Haggard, H. W., and Henderson, Yandell: J. Biol. Chem. 45: 209 (Dec.) 1920.



ceases to increase or even diminishes, the blood carbon dioxid and alkali show a tendency to rise, and the subject tends to recover. The obvious implication is that animals bled to the critical level and then given inhalations of oxygen would react as do persons at great altitudes or those partly asphyxiated with carbon monoxid; an adequate oxygen supply to the tissues, lessened hyperpnea, conservation of carbon dioxid, and recall of alkali, are closely linked factors in the return toward normal conditions. Our investigations were, however, interrupted (by the termination of the war and the mustering out of the army of the squad of chemists and physiologists who carried out the details of this work) before sufficient material was accumulated to enable us to estimate the degree to which this analogy is susceptible of therapeutic application.

We were thus also prevented from investigating why carbon dioxid inhalation, which is a beneficial accessory in the treatment of some forms of asphyxia, such as that from carbon monoxid, is not so after hemorrhage. Probably the reason lies in the additional demand for oxygen involved in the muscular exertion of the vigorous breathing induced by carbon dioxid as well as the excessive relative acidosis. We regret that we did not try a combination of sodium bicarbonate infusion and carbon dioxid inhalation, or, better, bicarbonate solution plus oxygen and carbon dioxid inhalation. We have since learned also that whenever carbon dioxid therapy is pushed, a protective dose of atropin should be given.

Probably after hemorrhage the capacity of the blood to produce alkali from sodium chlorid under an increased mass-action of carbonic acid is deficient because of insufficient corpuscles. In previous papers we have pointed out,<sup>32</sup> in accord with other investigators,<sup>33</sup> that it is the capacity of the corpuscles to take up hydrochloric acid from sodium chlorid, which chiefly enables the plasma to transport carbon dioxid as sodium bicarbonate, and that this is the process by which the blood obtains much of its alkali. After hemorrhage, the loss of corpuscles results alike in decreased oxygen transporting power, decreased carbon dioxid transporting power, and decreased capacity to produce alkali. Thus, the observations in this section, like those in the preceding section, point to the loss of red corpuscles as the critical factor in hemorrhage.

The evidence suggests the practical use of measurements of the volume of breathing or of the blood alkali (most simply from the carbon dioxid content of the arterial blood or its plasma) for purposes of prognosis, and as a guide and index for the transfusion of whole blood and possibly, too, for oxygen inhalation. These points seem to us to sum up the practical therapeutic lessons of the foregoing data and discussion.

The evidence seems also to afford an explanation for the observation (reported to us by industrial physicians) that even a slight hemorrhage, due to a fall, during carbon monoxid asphyxia, is peculiarly liable to result fatally. Carbon monoxid and hemorrhage act similarly in eliminating red corpuscles, and are therefore mutually additive in their asphyxial effects. On the other hand, withdrawal of blood a few hours later, formerly a common therapeutic procedure, when most of the gas has been eliminated and the functional capacity of the corpuscles thus restored, is not particularly harmful.

Finally, it may be recalled that some years ago one of us showed in a series of papers<sup>34</sup> that excessive pulmonary ventilation induces a condition like shock and like that following hemorrhage. It was shown also that when shock was induced by manipulation of the abdominal viscera, the carbon dioxid content or, as it would now be expressed, the blood alkali, fell very low. More recently, we have shown, in collaboration with Coburn,<sup>18</sup> that the vital depression or shocklike condition following prolonged anesthesia is largely due to acapnia, and that inhalation of carbon dioxid in air induces a rapid restoration of normal vitality and respiration, and recalls the blood alkali. That evidence and the data presented in this paper together show the reason for the similarity between traumatic shock without hemorrhage and hemorrhage without trauma. It evidently rests in large part on the fact that in both conditions excessive breathing, acapnia and the resulting low blood alkali are involved. These conditions (except after section of the vagi) are always induced also by oxygen deficiency, and constitute a large part of the picture which we term asphyxia.

#### CONCLUSIONS

1. A standard hemorrhage has been here used under which the chances of recovery and of death are about equal. Several treatments, particularly infusions equal in volume to the blood lost, have been tried. The data show that, although temporarily beneficial, mere restoration of blood volume, even by a fluid approximating the physical properties of plasma, such as acacia solution, does not considerably increase the probability of ultimate recovery. Transfusion of an equal amount of whole blood, after so brief a deprivation as that here used, would result in virtual restoration of normality. The conclusion is therefore drawn that it is the loss of red corpuscles which is the critical factor in hemorrhage.

2. The symptoms and processes observable in a partially exsanguinated animal are found to be identical in many essential features with those under progressive deprivation of oxygen, and with those occurring in carbon monoxid asphyxia. They are like those occurring in the process of acclimatization to great altitudes.

3. Mere visual observation or counting of respiration is quite unreliable. But, when the volume of air breathed per minute is measured, the following important new fact appears: The amount of breathing increases progressively with the blood loss. After the hemorrhage, a decrease of breathing accompanies recovery; and a further increase is an indication of, and a factor in the approach of death. The volume of breathing is thus an index of the severity of hemorrhage and a basis for prognosis.

4. A marked decrease of carbon dioxid content and of alkali in the blood occurs coincidentally with the increased respiration. It is shown, by analogy with other forms of asphyxia, that these blood changes are largely due to the acapnial, rather than to the acidotic process. Low blood alkali after hemorrhage calls for transfusion of blood or at least for oxygen inhalations.

5. The similarity of many of the phenomena of traumatic shock and exsanguination is shown to consist in large part in the occurrence in each of the acapnial process, both thus leading to the condition formerly

32. Haggard, H. W., and Henderson, Yandell: *J. Biol. Chem.* 45: 199 (Dec.) 1920.

33. Van Slyke, D. D.: *Physiol. Rev.* 1: 141, 1921.

34. Henderson, Barringer, Harvey and Haggard (Footnotes 3 and 6); reviewed by Henderson, Yandell; Haggard, H. W., and Coburn, R. C.: *The Acapnia Theory*, Now, J. A. M. A. 77: 424 (Aug. 6) 1921.



termed by one of us acapnia, now often erroneously called acidosis, and probably best denominated as a disturbance of the acid-alkali balance of the blood.

6. The circulatory conception of hemorrhage, which assigns the effects to fall of blood pressure, must be supplemented with a respiratory conception, namely, that, through the loss of red corpuscles, hemorrhage is a form of asphyxia.

### SPECIFIC PRECIPITIN TEST FOR HUMAN SEMEN\*

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Many years ago, C. G. Farnum,<sup>1</sup> at my suggestion, injected rabbits with semen in order to learn whether specific precipitins for semen would develop. This appears to be the earliest experiment of this sort. Farnum found that rabbits injected intraperitoneally with semen or testicular emulsions of dog, bull or man developed specific antisemen precipitins.

Strube<sup>2</sup> also obtained precipitins by injecting rabbits with human semen and testicular extracts, but these precipitins acted on blood serum as well as on semen, and he was not able by means of absorption experiments to secure specific action on semen. H. Pfeiffer<sup>3</sup> injected rabbits with dried and powdered bull spermatozoa, suspended in salt solution; the resulting antiserum acted strongly on semen solutions and testicular extracts, and only feebly or not at all on extracts of other beef organs, and by treatment of the antiserum with beef serum and certain organ extracts all precipitins except those specific for semen could be removed. This treated antiserum caused precipitates in dilutions of bull semen, and detected bull semen in mixtures with organ extracts.

No further experiments appear to have been made on specific antisemen precipitins until the recent work by Dervieux,<sup>4</sup> to which further reference will be made in the discussion of the results of some of my observations.<sup>5</sup>

Samples of human semen from many different men were furnished by Dr. V. D. Lespinasse and Dr. R. D. Herrold, who were good enough to save specimens obtained from private patients in the ways usual for clinical purposes. Of mixtures of such samples, four or five injections were made intramuscularly in rabbits at intervals of three or four days, beginning with 2 c.c. and increasing the quantity by 2 c.c. each succeeding injection. As a rule, the best time to bleed the rabbits for serum was found to be from six to eight days after the last injection. As the antigen in these experiments was not pure semen but mixtures of semen with inflammatory exudations and prostatic secretions, it was expected that the rabbit antiserum would contain precipitins for human proteins generally, whatever the case might be as to precipitins for semen proteins. The

general results are illustrated in Table 1, which shows that, in rabbits, injections of mixed human semen obtained as described produce precipitins for human serum and for human semen, and that the precipitins for human serum may be removed by elective absorption, the rabbit serum now containing precipitins specific for human semen only. On the other hand, treatment of the antiserum with semen dilutions removes all precipitins. In other words, my results show that a specific precipitin serum for human semen can be produced. In most of the tests of the antiserum, the absolutely clear fluids (liquor seminis) obtained by centrifugating samples of ejaculated semen were used, and the figures in the table represent the highest dilutions of such seminal fluids and of human serum in salt solution giving positive results under the conditions of the tests. In order to remove the precipitins for human serum proteins, equal parts of antiserum and of dilutions of human serum 1:200 of salt solution are mixed, left at room temperature for about one hour and in the icebox overnight, and then centrifugated thor-

TABLE 1.—SPECIFIC PRECIPITINS FOR HUMAN SEMINAL PROTEINS IN SERUM OF RABBITS INJECTED WITH HUMAN SEMEN

Serum of Rabbits Injected with Human Semen	Titers of Antiserum in			
	Human Serum	Human Seminal Fluid	Animal Seminal Fluids (Bull, Boar, Dog, Guinea-Pig, Rabbit, Rat)	Salt Solution
1. Original.....	6,400	800	0	0
Treated.....	0	256	0	0
2. Original.....	3,200	256	0	0
Treated.....	0	64	0	0
3. Original.....	6,400	640	0	0
Treated.....	0	256	0	0
4. Original.....	6,400	640	0	0
Treated.....	0	320	0	0
Normal rabbit serum	0	0	0	0

The figures give the highest dilution of serum and seminal fluid in which the antiserum caused distinct precipitates by the layer or contact method after one hour at room temperature.

oughly. Consequently, two volumes of "treated" antiserum represents one volume of the original antiserum. As a rule, the procedure given removes all the precipitin for human serum; dilutions of about 1:200 seems to give the best selective absorption. Progressive dilutions of serum and seminal fluids are made in small, clean glass tubes, and the antiserum, original or "treated," is introduced at the bottom by small pipets so that a precise line of contact of the two fluids is obtained. The results are read after one hour at room temperature.

Numerous tests of spots of various kinds, containing seminal and other protein substances, have been made with antisemen serum, from which precipitins for serum proteins had been removed, that is, with "treated" serum, in order to study its power to detect human seminal proteins under different conditions. Dr. V. D. Lespinasse, Dr. R. D. Herrold and Dr. Willson B. Moody kindly prepared materials for this purpose, the first two using samples of semen and prostatic fluids from patients, and Dr. Moody the contents of the seminal vesicles obtained at postmortem examinations at the Cook County Hospital. The results may be thus summarized: (1) The clear fluid secured by centrifugation of semen—expressed or ejaculated, about forty different samples have been examined—gave positive results in every case in dilutions running from 1:8 to 1:256 or 1:512 of salt solution. (2) In about fifty tests of blood, serum, pus, ascites fluid, soap, sputum and seminal-prostatic fluids, dried on cotton

\* From the John McCormick Institute for Infectious Diseases.

1. Farnum, C. G.: Biologic Test for Semen, J. A. M. A. 37: 1721 (Dec. 28) 1901; Tr. Chicago Path. Soc. 5: 31, 1901.

2. Strube, G.: Beitr. z. Nachweis von Blut und Eiweiss auf biologische Wege, Deutsch. med. Wchnschr. 28: 425, 1902.

3. Pfeiffer, H.: Beitrag, sur Lösung des biologisch forensischen Problems der Unterscheidung von Sperma-eiweiss gegenüber andern Eiweissarten derselben Species durch die Präzipitinsmethode, Wien. med. Wchnschr. 18: 637, 1905.

4. Dervieux, M.: Procédé de diagnostic individuel du sang et du sperm; Compt. rend. Acad. d. Sc. 172: 1384, 1921.

5. A comprehensive consideration of the immune reactions of the sexual cell is given by Dunbar, W. P.: Ueber das serobiologische Verhalten der Geschlechtzellen, Ztschr. f. Immunitätsforsch. u. exper. Therap. 4: 740, 1910; 7: 454.



cloth, the treated antiserum serum gave positive reactions with the extracts in salt solution only of the spots containing seminal-prostatic fluids, either pure or mixed with blood and pus, with these exceptions: The extract of a spot made with soap gave a nonspecific reaction; the extract of a spot made by fluid expressed from the prostate in an old man, the fluid not containing any spermatozoa, did not give any reaction; and, finally, a faint reaction was obtained with the extract of a spot made with fluid from a joint the seat of gonococcal arthritis. As the antigen was a mixture of seminal fluids, gonococci or gonococcal proteins may have been present and have induced the formation of antigonococcal precipitins; at any rate, treatment of this particular antiserum with gonococcal antigen removed the precipitin for the fluid of gonococcal arthritis without disturbing the precipitin for seminal protein. Extracts in salt solution of the seminal stains from nocturnal emissions gave prompt reaction. The results indicate that antiserum for human semen may be of practical value in detecting by its specific precipitin reaction the presence of human seminal protein in suspected spots and stains.

It is of special interest to note that the precipitin reaction for semen not only seems to be specific for the species but also, so to speak, semen-specific, that is, limited to constituents of the semen of that species. Whether the narrow limitation of action of human antiserum precipitins will hold true without exception and whether other precipitin reactions of an equally limited specificness and hence also of possible diagnostic value are to be found can be determined only by further and more extended observations. The more exact nature and source of the specific element or elements in human semen also invite investigation. It may be stated now that extracts of carefully washed spermatozoa give precipitates with antiserum serum.

Experiments with boar semen have yielded results analogous to those with human semen, as shown in Table 2, but in this case a small amount of precipitin for rat semen developed also. Observations with the semens of other species are projected.

On the basis of tests with serums obtained by injections of rabbits with the semen of one person, Dervieux<sup>4</sup> ventures to claim even an individual specificness, such serums giving the strongest reactions

TABLE 2.—SPECIFIC PRECIPITINS FOR BOAR SEMINAL FLUID

Serum of Rabbit Injected with Boar Semen	Titers of Antiserum in			
	Swine Serum	Boar Seminal Fluid	Rat Seminal Fluid	Other Seminal Fluids (Bull, Dog, Guinea-Pig, Human, Rat, Rabbit)
Original.....	400	32,000	32	0
Treated.....	0	8,000	8	0
Normal rabbit serum	0	0	0	0

The figures give the highest dilution of serum and seminal fluid in which the antiserum caused precipitates after one hour at room temperature.

with the particular semen used as the antigen; but his methods are open to question and his assertion that the precipitins for human blood do not act on human semen certainly cannot stand, because I find, as did Uhlenhuth<sup>6</sup> long ago, that the serum of rabbits injected with human blood or serum proteins regularly causes precipitates in human semen in low dilutions (from 1:8 to 1:54).

6. Uhlenhuth: Weitere Mitteilungen über die praktische Anwendung meiner forensische Methode zum Nachweis von Menschen und Thierblut, *Deutsch. med. Wchnschr.* **27**: 499, 1901; *der forensische Blutnachweis*, Wien. med. Wchnschr. **54**: 2009, 1904.

SUMMARY

Injection of rabbits with human semen induces the formation of precipitins that are specific for human seminal proteins, and this precipitin reaction may prove of value in determining the nature of spots suspected to be of seminal nature.

THE MOTOR ACTIVITY OF THE VENAE CAVAE\*

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The question as to whether the establishment of a definite peripheral resistance requires active variations in the size of the venous blood-bed has been discussed repeatedly. In general, it may be stated that the resistance encountered by the arterial blood in its passage through the vascular system depends on: (a) the size of the arteriocapillary orifice as determined by vasomotor action; (b) the size of the capillary blood-bed, and (c) the viscosity of the blood. The second factor, in turn, embraces the tonicity and contractility of the lining cells of the capillaries as well as of those smooth muscle cells which are scattered through the deeper layers of the skin in the immediate vicinity of these delicate tubules. It is obvious that the size of the capillary blood-bed may be varied not only in an active manner by changes in the contractility of the walls of the capillaries, but also in a passive way by the pressure exerted by neighboring tissues on their outer surfaces.

This subject-matter has been amplified in recent months by assuming that the walls of the veins and venules change their positions not solely in accordance with the height of the venous pressure but also in an active manner in consequence of motor influences. It is not my intention to review the literature pertaining to this entire topic, but merely to inquire into the question whether or no the venae cavae are equipped with a motor mechanism. Hill<sup>1</sup> has noted that the intravenous administration of extract of suprarenal body in a dog with divided vagus nerves gives rise to a considerable increase in the arterial pressure, but does not affect the pressure in these central veins. Contrariwise, Plumier<sup>2</sup> has observed that this procedure, when repeated in the intact animal, produces a rise in venous pressure which may justly be attributed to the slowing of the heart evoked by the injection of the aforesaid agent. A similar explanation of this phenomenon is given by Capps and Mathews.<sup>3</sup> This hindrance to the transfer of the venous blood into the arteries is usually referred to reflex cardio-inhibition, because the division of the vagus nerves or the administration of atropin destroys the rise. In this connection, brief reference should also be made to the fact that the injection of epinephrin solution in normal and abnormal persons evokes, as a rule, an increase in the pulse rate.<sup>4</sup>

Connet<sup>5</sup> takes issue with the conclusions drawn from the preceding experiments, because the results do not show that the reduction in the cardiac frequency is

\* From the Physiological Laboratory of Columbia University.  
1. Hill: *Proc. Roy. Soc.* **46**: 478, 1900.  
2. Plumier: *Arch. internat. de physiol.* **8**: 1, 1909.  
3. Capps, J. A., and Mathews, S. A.: *Venous Blood Pressure as Influenced by the Drugs Employed in Cardiovascular Therapy*, J. A. M. A. **61**: 388 (Aug. 9) 1913.  
4. Donaldson: *Brit. M. J.* **1**: 476, 1914. Miller: *Lancet* **2**: 158, 1914.  
5. Connet: *Am. J. Physiol.* **54**: 96, 1921.



the only factor responsible for the rise in venous pressure. In order to rule out the slowing of the heart, the vagus nerves were cut. The arterial and venous pressures were registered, the latter by means of cannulas inserted through the external jugular and femoral veins into the superior and inferior venae cavae. On injecting a solution of epinephrin into the circulation, the usual result was a rise in the arterial and venous pressures. These rises persisted even after precaution had been taken to retain the minute-volume of the heart as nearly as possible at its normal value. While these results were not very conclusive in dogs, they were quite definite in decerebrate cats. Thus, the rise in venous pressure persisted even after both vagus nerves had been divided, and when the cardiac frequency remained practically the same and the minute-volume had been increased by augmenting the pulse pressure. The conclusion finally arrived at by Connet is that the rise in venous pressure is due in large part to a nervous factor, resident, as is shown by a subsequent series of experiments, in the venae cavae and not in the central nervous system.

It is obvious that the frequency of the heart as such cannot be the deciding factor in the production of this rise in venous pressure, because a quickly beating heart need not propel a larger quantity of blood in a given period of time than one beating more slowly. Accordingly, it must be the output of the heart per unit of time that determines the functional capacity of this organ, and in turn influences the venous flow and pressure. It is not apparent to me that Connet has properly guarded these experiments against changes in the blood flow.

The variations which this factor presents under the influence of epinephrin may be ascertained by calibrating the blood stream in the inferior or superior vena cava. The method that may be followed in experiments of this kind has already been described.<sup>6</sup> In brief, it necessitates the insertion of a recording current-measurer<sup>7</sup> in the inferior vena cava in close proximity to the right auricle, as well as the simultaneous-registration of the carotid and caval pressures over the records of a chronograph and electromagnetic signal. It is then possible to inject different quantities of a 1:10,000 solution of epinephrin into the circulation to ascertain the action of this agent. In the experiments under consideration, the injections were made into the femoral vein on the corresponding side, or into the inferior vena cava very close to the right auricle. These tests were repeated after both vagus nerves had been divided. Cats in light ether narcosis were employed.

The character of the results of these experiments may best be illustrated with the aid of the accompanying table, which embodies the numerical values of the blood flow and pressures of a section of Experiment 8. It will be seen that the normal caval flow amounted in this case to 2.97 c.c. in a second, while the carotid arterial pressure equaled 102.6 mm. of mercury and the venous pressure 1.5 mm. About six seconds after the injection of 2.0 c.c. of a 1:10,000 solution of epinephrin, the arterial pressure rose slowly until it attained a height of 130.6 mm. of mercury. The frequency of the heart retained its normal value for some time after the onset of this rise, and then slowly decreased from 176 to 162 a minute. The greatest

reduction in the cardiac rate coincided with the period of maximal arterial pressure. At this moment, a marked diminution in the second-volume of the venous flow developed, which persisted during the entire period of high arterial pressure. The venous pressure showed a maximal value of 2.2 mm. of mercury.

The general character of these changes, as well as the relationship in the time of their development, leads me to believe that the rise in venous pressure following the injection of epinephrin is not of local origin, but is due to the establishment of a high peripheral resistance. The latter, in turn, diminishes the minute-output of the heart. In other words, it is not caused by a constrictor action of the central veins but by a slight mechanical impediment to the transfer of venous blood into the arteries. Accordingly, it seems that the results of the experiments of Connet cannot possibly be interpreted as proving that the venae cavae are equipped with a motor mechanism.

## RESULTS OF AN EXPERIMENT\*

Phase of Stromn	Time, hr	Sec.	Total Quantity of Blood, C.c.	Quantity, per Sec.	Blood Pressure, Mm. Hg		Procedure
					Carotid Artery	Inferior Vena Cava	
15	6.3		19.5	3.00	102.6	1.5	Normal
16	6.5		19.5	3.00	.....	...	
17	6.4		19.0	2.97	.....	...	
18	6.5		19.0	2.92	.....	...	
19	6.3		19.0	3.01	.....	...	
20	7.0		20.0	2.85	.....	...	
Average.....				2.97	102.6	1.5	Injected 2 c.c. of solution of epinephrin 1:10,000
21	6.8		20.0	2.90	102.8	1.5	
22	6.5		20.0	3.07	114.6	...	
23	6.9		20.0	2.89	119.4	2.0	
24	7.4		19.5	2.63	1,264	2.2	
25	8.0		19.5	2.43	130.6	...	
26	8.0		19.5	2.43	120.0	...	
27	7.2		19.5	2.70	116.3	2.0	
28	7.0		19.8	2.82	110.2	...	
29	7.0		19.8	2.82	104.6	1.5+	
30	7.0		19.5	2.78	103.5	...	
31	6.8		19.5	2.86	.....	...	
32	7.0		20.0	2.85	103.0	...	
33	6.5		20.0	3.07	.....	1.5—	
34	6.5		20.0	3.07	.....	...	
35	6.4		19.8	3.09	102.0	...	
36	6.4		19.8	3.09	.....	...	
37	6.5		19.8	3.04	.....	...	

\* Experiment 8: Cat, weight, 4 kg. (8<sup>8</sup>/<sub>10</sub> pounds); heart, 20 gm.; frequency, 176 a minute.

Stress is laid by Connet on the fact that the rise in venous pressure following the administration of epinephrin persists even after both vagus nerves have been divided. Since this procedure prevents cardiac reflexes, and establishes at the same time a greater cardiac output per minute, it is believed that the augmentation in venous pressure must possess a local cause. The experiments here submitted do not confirm this contention, because the division of the afore-said nerves did not destroy the effects of the epinephrin as exemplified by the hindrance to the venous flow into the right auricle and the rise in venous pressure. Accordingly, they cannot be employed as a means of showing that the venae cavae possess motor powers.

The passive behavior of the cavae is further illustrated by the changes resulting under these experimental conditions in consequence of the injection of epinephrin into the femoral vein, i. e., distally to the current-measurer. In the presence of venoconstrictors in the cava, this slight change in the procedure should markedly diminish the venous flow into the heart. The latency of the rise in venous pressure should then be brief, while the character of the changes in the flow should indicate a peripheral reduction in the venous supply. Contrariwise, the results of these tests revealed

6. Burton-Opitz, Russell: *Am. J. Physiol.* **58**: 226, 1921.

7. Burton-Opitz, Russell: *Arch. f. d. ges. Physiol. (Pflüger's)* **121**: 150, 1908.



a diminution in the functional capacity of the heart brought about by the increased peripheral resistance. The period elapsing between the moment of injection of the epinephrin and the onset of the rise in venous pressure and decrease in the blood flow was unduly prolonged. Naturally, this increase in the length of the latent period finds its cause in the time consumed by the epinephrin in its passage through the distal portion of the inferior vena cava and the instrument measuring the volume of the blood stream. Accordingly, as the aforesaid changes did not develop until the epinephrin had had sufficient time to enter the arterial system, they cannot be indicative of the presence of a motor mechanism in the central segments of the venae cavae.

### EFFECTIVENESS OF INFANT WELFARE CLINICS FROM A MEDICAL POINT OF VIEW\*

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The large amount of public, professional and governmental interest in child welfare work which has developed in recent years has been manifest more in the philanthropic than in the medical aspects of the problem; propaganda and organization rather than medical service have been stressed. Doubtless, in pioneer work these were the logical methods of attacking this public health problem; but infant welfare work is not only a philanthropy. It is also preventive medicine in diseases of children, and only as it is medically effective should it command encouragement and support as a social benevolence. As a measure of this effectiveness, a statistical study of the records of the Babies' Milk Fund Association of Baltimore for 1920 is offered.

Infant mortality rates vary from year to year from causes and conditions more or less well understood, and local or national in scope. These fluctuations in the infant death rate from year to year appear to have occurred in some localities before the days of awakened interest in child welfare work. Furthermore, it is difficult, taking any large group of figures compiled by many persons whose personal equations must necessarily be different and from localities whose statistical methods and accuracy are not comparable, to be sure that a change in the infant mortality rate is due to the accomplishment or to the lack of any given piece of public health work. These varying factors have been largely eliminated in this study. The comparisons were made between groups of children all within one organization; the period studied was one calendar year, and the personal equation only that of the medical superintendent of the association. The demonstration of the effectiveness of public health work depends on an analysis of vital statistics, but we believe that unselected morbidity and mortality reports have much less significance than the data which may be obtained from the study of a group of cases under uniform known conditions.

Children are enrolled by the Babies' Milk Fund Association of Baltimore up to the age of 3 years.

The children are referred to the association by various individuals, organizations, institutions and the department of health. To all of the children the association gives nursing supervision and instruction in the home; it offers to these children the services of its "well baby" clinics, but attendance at these conferences is not required for enrolment. Hence the association obviously has two groups of children on its roll: (1) those who receive from it only the services of the visiting nurses, and (2) those who in addition receive directions as to feeding and hygiene at an infant welfare conference from a physician whose work is actively supervised by the medical superintendent of the association.<sup>1</sup> These two groups present themselves for comparative study as regards the death rates in each. The association does not furnish medical service to sick children, and the diagnoses of the causes of death were obtained from various sources—attending physicians, institutions and certificates of death. These diagnoses were entered on the charts; the charts also furnished in all cases notes by the nurses and also by the conference physicians if the child was an attendant at a "well baby clinic" prior to its sickness and death. These charts were the sources from which were obtained the statistics on which this study is based.<sup>2</sup>

#### GENERAL DATA

During the year 1920 there were 13,036 children under 3 years of age enrolled in the Babies' Milk Fund Association of Baltimore. Of these, 8,730 (66 per

1. The medical superintendent and the clinic physicians of the association received salaries for their services. Budin, who inaugurated the welfare conference, "has well said that the consultation is worth just as much as the physician who conducts it, but no more" (Holt, L. E.: *Infant Mortality, Ancient and Modern: An Historical Sketch*, Tr. Am. A. for Study and Prevention of Infant Mortality, Fourth Annual Meeting, Washington, D. C., 1913, p. 45). Of the truth of this assertion we have not the slightest doubt. In 1920 there were twenty-six welfare conferences each week. The stations at which the clinics were held were widely distributed in the city. At some stations two clinics were held each week; at others only one. There were nine clinic physicians. The medical advice given a mother at a "well baby" clinic cannot be sharply defined; it is often adapted to the individual baby rather than to a group. Some points regarding feeding instructions may be detailed:

1. The feeding interval advised was four hours—occasionally three hours, but never less.

2. After each feeding the mother was instructed to place the child over her shoulder and pat the child's back so that gas in the stomach might be eructated with the child in the upright posture. Vomiting other than that due to hypertrophic stenosis or neurosis (rumination) was rarely observed at the clinics. The mothers seldom complained that their infants had severe colic.

3. Unsweetened boiled water was prescribed between feedings.

4. Breast feeding was insisted upon up to the eleventh month. A formula was never prescribed until it had been demonstrated by the weight curve, by the weight before and after nursing, and by examination of the mother's breasts that the supply of human milk was nil or insufficient. If any breast milk was available, it was used, and complementary or supplemental artificial feedings employed. The value of milk and a plain, well balanced diet for the lactating mother was emphasized.

5. The artificial formulas prescribed were for the most part simple water or barley water dilutions of whole milk with the addition of sucrose. After mixing, the formulas were brought to the boiling point and kept at that temperature for several minutes and then cooled rapidly. Because of inaccuracy, the practice of preparing single feedings was discouraged. The nipples and bottles from which the child was fed were to be sterilized by boiling. Special milk was not dispensed by the association. Mothers were taught in their homes by the nurses how to modify the milk delivered there by the dairy. The nurses always followed a physician's orders; under no circumstances did the nurses prescribe formulas.

6. Cereal in solid form was advised after the child was 6 or 7 months old; also small amounts of vegetable purée or broth.

7. Simple printed diet lists for children over 10 months of age were available. The use of plain, well balanced diets was urged, and no attempt made to give a wide variety of foods.

8. After the third month, biweekly and, if possible, daily administration of orange juice was advised.

9. Cod liver oil was prescribed for all rachitic children and for most of the colored children after they were 4 months of age.

2. Certain children moved from the city, and others were discharged for various reasons before reaching the age of 3 years; the addresses of still others were lost. Of these children a certain number died, and their deaths could not be recorded on our records. These unknown deaths, when added to the known deaths, would increase the actual percentage mortality but would not change the relative percentage, for they were in all probability about equally distributed in Groups 1 and 2.

\* From the Babies' Milk Fund Association of Baltimore, J. H. Mason Knox, Jr., president.



cent.) were white children, and 4,306 (33 per cent.) were negroes. All of these children were under the supervision of nurses, but we arbitrarily regarded only those who were brought to the "well baby clinics" at least three times as being under our medical supervision; these children constitute Group 1. We felt that, if a child was brought to a conference at least three times, it could fairly be assumed that the child was being cared for, to some extent at least, as our physician had directed. Of course, some of the children

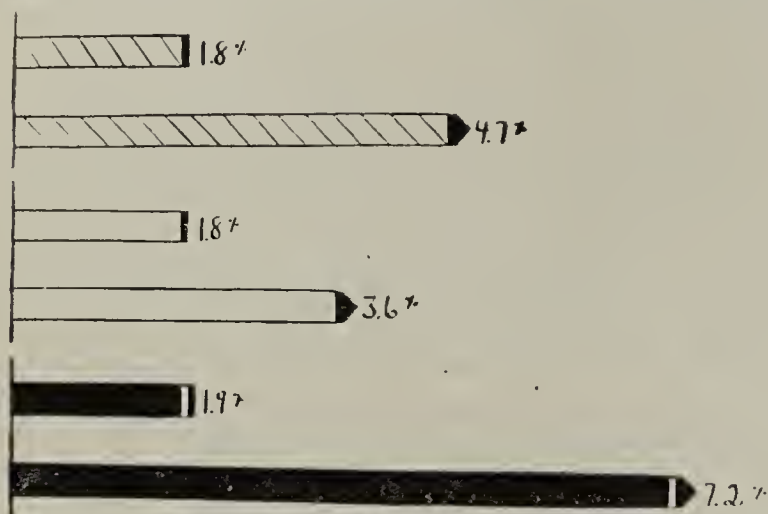


Chart 1.—Total mortality. In this and the accompanying charts the blocks with square tips represent the percentage of deaths among children "under medical supervision" (Group 1); the blocks with pointed tips represent the percentage of deaths among children "not under medical supervision" (Group 2). The shaded blocks (with oblique lines) represent the percentage of deaths among white and colored children together; the white blocks and the black blocks, the percentage of deaths among white children and colored children, respectively.

who did not attend our clinics received some medical supervision from private physicians or from dispensaries. Those children who were never brought to a clinic or who were brought less than three times were

#### PRELIMINARY DATA \*

Children under 3 years of age, visited:

13,036	{ 4,366 (33%) under medical supervision
	{ 8,670 not under medical supervision
White, 8,730	{ 2,673 (30%) under medical supervision
	{ 6,057 not under medical supervision
Colored, 4,306	{ 1,693 (39%) under medical supervision
	{ 2,613 not under medical supervision

\*The children "under medical supervision," whether white and colored together, or white or colored separately, constitute Group 1. Those "not under medical supervision," whether white and colored together, or white or colored separately, constitute Group 2. The children "under medical supervision" are those who were brought to the infant welfare conferences of the association at least three times; those "not under medical supervision" are the children who never came to the infant welfare conferences at all or who came less than three times.

not regarded as being under the medical supervision of the association, although they were regularly visited by the nurses; these children constitute Group 2. Of the 13,036 children enrolled, 4,366 (33 per cent.) were under both medical and nursing supervision (Group 1), and 8,670 (66 per cent.) were under nursing supervision only (Group 2). Of the white children, 2,673 (30 per cent) belonged in Group 1 and of the negroes, 1,693 (39 per cent.) belonged in Group 1.<sup>3</sup> The basic preliminary data are summarized in the accompanying table.

3. The notation "Group 1" refers not to a fixed number or set of infants, but always to those children who came to the conferences at least three times; sometimes the group is composed of white and colored children together, sometimes of white children only, and sometimes of negro children only. Similarly, "Group 2" is sometimes composed of white and colored children together, sometimes of white children only, and sometimes of negro children only.

Few infants were brought to the welfare conferences before they were 6 weeks of age. This was due in part to the fact that mothers often do not wish to take very young babies outdoors, and in part to the fact that the maternity agencies often followed the babies for several weeks, and it is difficult for the "baby nurse" to obtain complete cooperation so long as the family is being visited by the representatives of several organizations. Relatively few children were brought to the clinics after they were 18 months of age. With an inadequate staff of nurses,<sup>4</sup> it was deemed best to concentrate effort on children under 1 year of age. Many mothers will not bring their children to conferences, after the first year is successfully passed, without constant prodding and encouragement.

#### TOTAL MORTALITY

In a study of the total mortality of the white and negro children together, it was found, as shown graphically in Chart 1 that in Group 1 the deaths per thousand children in the group (4,366) were eighteen, whereas in Group 2 (8,670 children) they were forty-seven. When the total mortality for the white and negro children was studied separately, it was found that in Group 1 of the white children (2,673) the deaths were eighteen per thousand, and of the negroes (1,693 children) they were nineteen per thousand; in Group 2 of the white children (6,057) the deaths were thirty-six per thousand, and of the negroes (2,613 children) they were seventy-two per thousand. The mortality, therefore, of the white children under medical supervision was about one-half that of those receiving only nursing supervision. For the negroes, the mortality of those coming to the clinics was only one-fourth that of those who did not come. The greatest reduction in mortality obviously took place among the colored children; this result is even more striking when it is pointed out that the general death rate for colored children in Baltimore is about double that for white children.

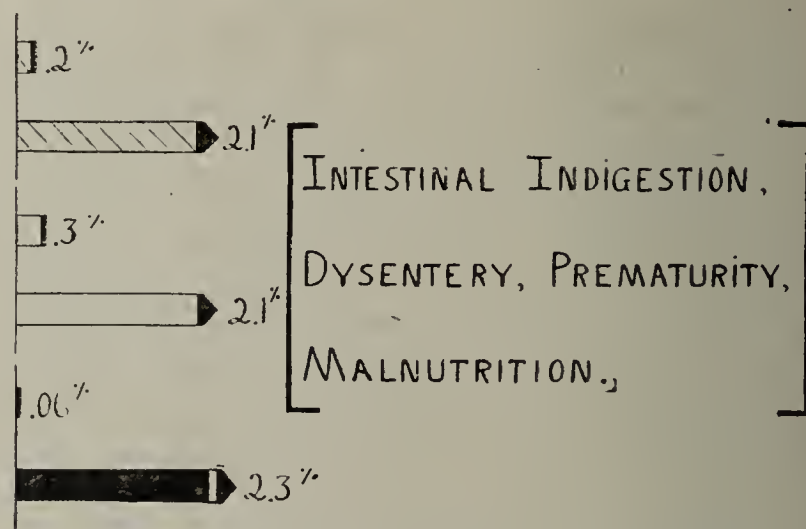


Chart 2.—Mortality from diarrheal and nutritional diseases.

We believe that this reduction in deaths was in large measure the result of our medical supervision; but, undoubtedly, without our work the mortality in Group 1 would have been somewhat less than in Group 2 because the mothers who brought their children for medical supervision were cooperative and probably more intelligent than those who did not come; without our help, therefore, the child of the intelligent mother might have been somewhat better protected from dis-

4. The number of field nurses on the staff in 1920 was twenty-three. The number of children on the roll at any given time was about 8,000.



ease than the child of the less careful and resourceful woman. Our clinics for colored children were very popular, and undoubtedly the mothers who brought their babies were of the more intelligent and prosperous class.

#### MORTALITY FROM DIARRHEAL AND NUTRITIONAL DISEASES

In Chart 2 is shown graphically the result of a study of deaths due to difficulties in feeding and to diarrheal diseases. In order that this study should err, if any error were to be made, on the side of showing the effectiveness of medical work in the least favorable light, it was necessary to include in this group every death which could reasonably be thought to be due to improper or difficult feeding, or to actual disease of the gastro-intestinal tract. Included in this group, therefore, are deaths from states or diseases diagnosed as prematurity, marasmus, malnutrition, athrepsia, gastro-enteritis, intestinal indigestion, summer complaint, ileocolitis, dysentery and infectious diarrhea. The study shows that the total deaths from these diseases were two per thousand children in Group 1 (4,366), as compared with twenty-one per thousand in Group 2 (8,670 children).

This chart also shows separately the mortality among white and colored children from nutritional and diarrheal diseases. The number of deaths among the negro children who did not attend the clinics was nearly forty times greater than among those who received medical supervision at the conferences. We are at a loss to give a positive explanation for the fact that the death rate in Group 1 of the negro children was lower than in Group 1 of the white children, but it is our impression that we were more successful, for reasons economic, racial or otherwise, in securing breast feeding for colored children than for white children.

We were able to attribute to dysentery but one death among the children who were under our medical supervision. Our nurses and physicians constantly teach that all water and food given to a baby must be boiled, and that all utensils in which the infant's food or water is kept must be sterilized. Small amounts of orange juice daily or two or three times weekly were prescribed for artificially fed children after the third month.

#### MORTALITY FROM RESPIRATORY DISEASES

The medical advice given at a "well baby" conference can supposedly accomplish little in the prevention of respiratory diseases, except to assist the mother in keeping the child in good nutritional condition. It was expected, then, that deaths from respiratory diseases (certified as "bronchitis," "pneumonia," "influenza," "pulmonary tuberculosis") would only be slightly fewer among the children under our medical supervision (Group 1) than among those without our medical supervision (Group 2).

Chart 3 demonstrates that, as regards the children as a whole and as regards the white children, the actual

results correspond to those anticipated, i. e., the deaths in Group 1 were only slightly fewer than those in Group 2. But the deaths of negro children in Group 1 were only one-half those in Group 2. The accepted belief in the increased susceptibility of the negro race to respiratory diseases might account for the increase of deaths in Group 1 of negro children (15 per thousand) over those of Group 1 of the white children (eight per thousand), but it was not expected that in Group 1 of the negro children the deaths would be only one-half as many as among the children in Group 2.

We believe that there is a definite explanation for this striking but unexpected reduction in deaths from respiratory disease among negro children who attended "well baby" conferences fairly regularly. Since 1916, it has been the practice of the conference physicians to prescribe cod liver oil to most of the negro babies over 3 or 4 months of age and, of course, to all children with manifest rickets. The result of this use of cod liver oil as a preventive medicine for rickets is, we believe, shown in the lower death rate among the clinic babies, for rickets is an extremely prevalent disease among negro children, and the chief cause of death among rachitic infants is respiratory infection; hence, a reduction in the incidence of rickets manifests itself very strikingly in a reduction of the deaths due to infections of the respiratory tract.

#### MORTALITY FROM MISCELLANEOUS CAUSES

Of all other causes of death in the first three years of life, only the infectious diseases offer large opportunity for preventive work, and of these only for smallpox, diphtheria and syphilis have we definite prophylactic or remedial agents. Doubtless it would be expected that improvement in general nutrition might bring about a slight reduction in the number of deaths from miscellaneous causes among the children who came to the conferences. The striking feature of

Chart 4 is the reduction in the deaths among negro children coming to the conferences, these being one sixth of those occurring among the children who did not attend the clinics. Here again, in retrospect, we believe there is a definite explanation for the reduction in the death rate. Hereditary syphilis, like rickets, is very common among negro children, and in our clinics children of this race were watched carefully for the slightest signs of the disease. Children in whom syphilis was suspected or diagnosed were immediately sent for blood studies and treatment to physicians or hospital clinics. Many babies were thus doubtless saved who would otherwise have

died during the course of the first year from active syphilis and secondary malnutrition.

#### RESULTS OF STUDY

We believe that this study has convincingly shown how very effective the application of pediatrics may be in preventing deaths among children in the first three years of life. By the promotion of breast nursing and the use of simple but carefully adapted artificial formulas, nutritional and diarrheal diseases and difficult feeding problems are practically eliminated.

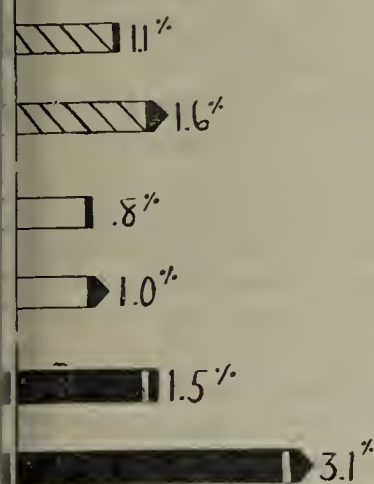


Chart 3. — Mortality from respiratory diseases.

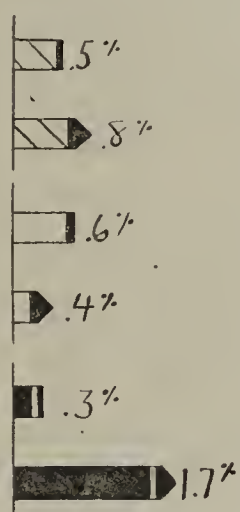


Chart 4. — Mortality from miscellaneous causes.



Although there were many cases of dysentery in Baltimore during the year 1920,<sup>5</sup> there were few cases among the regular attendants of the welfare conferences, and we were able to attribute only one death to this disease in this group of children. We believe that dysentery did not occur among the children under our medical supervision, because, whenever artificial feedings were used, the mother was taught to boil the formula and the vessel or bottles in which the formula was kept. There may be other causes for the elimination of dysentery among the group of children under our medical supervision, but we believe that sterilization of food and utensils is the correct one, for it is the one practice which we most frequently found had not been followed in cases in which dysentery did develop.

Feeding difficulties, summer complaint and dysentery then, are causes of death in infancy which can be controlled or eliminated among a large group of children who are visited in their homes by nurses, and whose feeding and hygiene are supervised by physicians trained in pediatrics. To a lesser degree, respiratory disease may be lessened by the promotion of good nutrition and thereby increased resistance to and endurance of infection. Furthermore, rickets is a preventable disease, and death due to respiratory disease in rachitic children is entirely preventable.

Diphtheria, syphilis and smallpox similarly as causes of deaths are preventable diseases. All that we were able to accomplish in the reduction of deaths from diphtheria was through the early diagnosis of the disease and insistence on antitoxin treatment of it. But a widespread use of toxin-antitoxin immunization, in conjunction with the Schick test, would far more effectively reduce the morbidity and mortality from this disease. Adequate prenatal supervision will result in the administration of suitable treatment to pregnant syphilitic women, and the incidence of hereditary syphilis will be markedly reduced thereby. The early diagnosis and treatment of hereditary syphilis will almost eliminate this disease as a cause of infant deaths. Smallpox, which was at one time perhaps the most potent cause of infant mortality, has ceased to be of serious moment since the practice of vaccination has become widespread.

We believe that the same careful methods of nursing and medical supervision, if applied to infants in the first month or six weeks of life, would result in a reduction in the deaths from certain diseases of the new-born and the prevention of the development of many difficult feeding problems which are later presented to the pediatrician for solution. Similar means would doubtless reduce the death rate in the preschool period, but more especially the incidence of maldevelopment and chronic diseases.

#### CONCLUSIONS

1. Standardized medical supervision of children, under 3 years of age, in conjunction with careful home visiting and instruction by nurses, is highly effective in reducing mortality.

5. It is not possible at this time to determine in Baltimore the exact rôle played by dysentery as a cause of death in childhood. The cases of bloody diarrhea are classified with all other forms of so-called summer complaint as "gastro-enteritis." We believe that a large percentage of cases of so-called "ileocolitis," "bloody diarrhea" or "infectious diarrhea" in infants are proved to be due to bacterial infection, usually with the dysentery bacillus (Davison, W. C.: *Bacillary Dysentery in Children*, Bull. Johns Hopkins Hosp. 31:225 [July] 1920). Bloody diarrhea should be a reportable disease as are other infectious diseases, and statistics of deaths due to this infection should be kept separately from those of deaths due to other nonspecific forms of diarrhea in children.

In 1920, 13,036 children under 3 years of age were enrolled in the Babies' Milk Fund Association of Baltimore. Children who were brought to the infant welfare clinics of the association at least three times constitute Group 1 (4,366 children, both white and colored); those who were brought less than three times or not at all constitute Group 2 (8,670 children, both white and colored).

The general mortality for both white and negro children together in Group 1 was eighteen per thousand, as compared to forty-seven per thousand in Group 2.

The greatest relative reduction in the number of deaths occurred in the negro children; the mortality in this race in Group 1 (1,693 children) was nineteen per thousand, and in Group 2 (2,613 children) was 72 per thousand.

2. The reduction in the death rate is most striking in malnutrition, summer complaint and dysentery.

The deaths of white and colored children together from these diseases was two per thousand in Group 1 and twenty-one per thousand in Group 2. In Group 2 of the negro children, the mortality was forty times greater than in Group 1, in which it was only 6 per 10,000. Only one death in Group 1 was attributed to dysentery.

3. Deaths from respiratory infections in children under 3 years of age may be slightly reduced by the promotion of good nutritional development. In negro children the prevention of rickets by the use of cod liver oil reduces the incidence of respiratory diseases.

The total mortality of white and colored children together from respiratory tract infections was eleven per thousand in Group 1 and sixteen per thousand in Group 2; eight per thousand in Group 1 of the white children (2,673 children) and ten per thousand in Group 2 (6,057 children); and fifteen per thousand in Group 1 of the negroes and thirty-one per thousand in Group 2. We believe that this marked reduction in the deaths among colored children from respiratory diseases paralleled a reduction in the incidence of rickets accomplished by the prophylactic use of cod liver oil.

4. Of other diseases causing death in infancy, diphtheria and syphilis offer the greatest opportunities for the application of preventive and curative measures.

The mortality for white and colored children together from miscellaneous diseases was five per thousand in Group 1 and eight per thousand in Group 2. There was, however, a real reduction in the number of deaths among negro children; in Group 1 of the colored children the mortality was three per thousand, whereas in Group 2 it was seventeen per thousand. We believe this reduction was accomplished chiefly through early recognition and treatment of hereditary syphilis; in Baltimore this disease seems to be relatively much more common among colored than among white children.

5. One of the most valuable services a nurse engaged in public health work can contribute to the cause of the prevention of disease and death in children is to teach mothers to keep their children under competent medical supervision.

**Opinion on Quarantine from Attorney General.**—According to an opinion given by Attorney General Brundage of Illinois it is within the power of the state department of public health to declare that a state of limited quarantine exists in any municipality where an epidemic of smallpox has appeared or threatens to develop and that under the terms of such limited quarantine it would be legal to require all persons about to travel on common carriers to produce evidence of protection against smallpox, either by reason of vaccination or of having had the disease. The opinion further states that the enforcement of such regulations can legally be required from local health authorities. The opinion of the attorney general in this matter came as a result of a request from the state director of public health who had some such action under contemplation because of lax quarantine conditions at certain points where smallpox has been more or less epidemic for the past few months.



# OBSERVATIONS ON CLINICAL AND THERAPEUTIC ASPECTS OF CHRONIC INTERNAL HYDROCEPHALUS\*

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The keen interest manifested in recent years regarding the etiology, pathology and treatment of hydrocephalus, excluding the acute type (tuberculous meningitis), has stimulated us to review the literature and to attempt to carry out some of the therapeutic measures outlined by Frazier,<sup>1</sup> Dandy,<sup>2</sup> Blackfan<sup>3</sup> and Elsberg.<sup>4</sup> Of the cases coming under our observation we have selected types suitable for the purpose.

Reviewing the etiology, we note Dana's<sup>5</sup> statement that secondary or acquired hydrocephalus is usually caused by an attack of acute meningitis or by tumors; but it may also be due to ependymal inflammation, and to obstruction of the veins of Galen by thrombosis or other mechanical causes. In some cases infants survive the meningitis, and, with a growing head, develop symptoms of hydrocephalus. Blackfan<sup>3</sup> states that in a series of cases which he recently studied, the primary cause of chronic hydrocephalus was a previous meningitis in fourteen; a congenital absence of the aqueduct of Sylvius in three, and a tumor blocking the iter in one. Oppenheim<sup>6</sup> says of acquired hydrocephalus that the latent type may in childhood, youth, or even in adult life, become aggravated, either spontaneously or as the result of injury, sunstroke, etc., and by rapid and marked increase of the ventricular exudation give rise to serious symptoms. We note<sup>7</sup> further that:

Internal hydrocephalus resulting from serous effusion, as a rule, comes on in early childhood, and is not difficult to recognize if the process is active. Very often, however, there may be only mild symptoms, only to have later in life either an acute or a chronic serous meningitis or internal hydrocephalus. Many writers consider that serous meningitis or serous effusion in the ventricles in the adult is only an acute exacerbation of an old process which had its origin in childhood. However that may be, there is no question but that in the adult a serous effusion may develop either acutely or gradually in the ventricles and cause symptoms which are usually recognized as occurring in brain tumor and from which it is almost impossible to make a differential diagnosis.

In proceeding with this work we have followed the new classification of Frazier,<sup>1</sup> which we found well adapted for clinical purposes. Our cases have been arranged accordingly.

The first case presented falls under the heading of hydrocephalus obstructivus, the internal hydrocephalus of the old nomenclature. In this type there is mechanical obstruction to the natural drainage of cerebrospinal

fluid from one or more ventricles into the subarachnoid space, where the absorption takes place. This may be due to a congenital defect, such as absence of the aqueduct of Sylvius, or as the result of adhesions from a previous inflammatory lesion. In other cases the passage of fluid through the foramina of Magendie and Luschka may be obstructed, causing a dilatation of all the ventricles. This case is illustrative from the standpoint of operative procedures as therapeutic measures:

**CASE 1.—History.**—T. B., a colored boy, aged 5 years, first admitted, April 12, 1920, a sixth child, was born at full term, of apparently healthy parentage; delivery was normal; the birth weight was not recorded. The family history was negative. The child had been breast fed for one year, followed by gradual feeding of table food. Four days after his birth the mother noticed that the head appeared to be increasing in size. For a period following this the head became progressively larger, the child was unable to hold it up, and mental development was markedly retarded. At the time of admission he could speak only a few words, and his general physical condition was poor. The chief complaint on admission was convulsions for the last two days, occurring at frequent intervals, and always generalized.

**Physical Examination.**—The child was poorly developed and poorly nourished. He lay in bed with the limbs drawn up and crossed, the eyes rolled upward, and he groaned continuously. The head was very large, measuring 24 inches (61 cm.) in circumference. The anterior fontanel was widely open and the bones were very thin. The eyes showed a marked lateral strabismus with some degree of exophthalmos. The pupils were equal and regular, and reacted to light. The ears and nose were normal. The teeth were in poor condition; the tongue was coated; the tonsils were moderately hypertrophied. The neck was normal. The chest was poorly formed; the ribs were very prominent. The heart and lungs were normal. The abdomen was of the scaphoid type, the liver and spleen not palpable. The arms were spastic. The patellar jerks were hyperactive, and there was a suggestive Kernig's sign.

A ventricular puncture was made and 10 c.c. of fluid withdrawn under greatly increased pressure. Examination of the fluid proved negative. One c.c. of phenolsulphonephthalein was injected into the ventricle, appearing in the spinal fluid in twenty-five minutes. The blood Wassermann reaction was negative. The child was discharged two weeks after admission with the condition unimproved.

**Subsequent History.**—One year later the child was again admitted with symptoms of vomiting, convulsions, frequent sudden cries, and marked athetoid movements. The mother stated that during the interval of a year there was no marked change in the child's condition. During the last few days, however, she had noticed that the child cried out suddenly at intervals, vomiting frequently, had numerous convulsions, and was constantly in a series of jerky, irregular, incoordinated movements. Physical examination at this time revealed a greatly enlarged head, marked muscle atrophy and well marked spasticity. Nothing in the way of treatment was attempted at this time, as the parents removed the child within two days after admission.

The third admission was three months later. There was no change in the condition. The parents agreed to allow the child to remain under observation, and to allow us to institute any treatment we deemed advisable. The blood Wassermann, urine and blood examinations were negative at this time. The head measured 36 inches (91.5 cm.) in circumference. One month after admission the blood showed a hemoglobin of 65 per cent., 6,200,000 red cells, and 16,000 leukocytes, with a lymphocytosis and 6.5 per cent. of neutrophilic myelocytes. Urine examination was negative. The fundi showed partial optic atrophy with slight cupping of both disks. Examination of the spinal fluid on several occasions proved negative.

Frazier's test was performed at this time. One c.c. of phenolsulphonephthalein was injected into the lateral ventricle. Frazier says: "Under normal conditions, when the dye is injected into the lateral ventricle, it should appear in the fluid withdrawn by lumbar puncture within three to eight minutes. If, therefore, the fluid from the spinal canal, after injection, is not stained within the specified time, it may be

\* From the Medical Service of the Children's Hospital.

1. Frazier, C. H.: Types of Hydrocephalus: Their Differentiation and Treatment, *Am. J. Dis. Child.* **11**: 95-102 (Feb.) 1916.

2. Dandy, W. E.: The Diagnosis and Treatment of Hydrocephalus Resulting From Strictures of the Aqueduct of Sylvius, *Surg., Gynec. & Obst.* **31**: 340-358 (Oct.) 1920; The Diagnosis and Treatment of Hydrocephalus Due to Occlusions of the Foramina of Magendie and Luschka, *ibid.* **32**: 112-124 (Feb.) 1921.

3. Blackfan, K. D.: The Early Recognition of Hydrocephalus in Meningitis, in Osler, William: Contributions to Medical and Biological Research, **1**: 327, 1919.

4. Elsberg, C. A.: Chronic Internal Hydrocephalus: The Newer Methods for Its Recognition and Treatment, *M. Rec.* **92**: 874, 1917; *Arch. Pediat.* **34**: 851-860, 1917.

5. Dana, C. L.: Textbook of Nervous Diseases, New York, William Wood & Co., 1920, pp. 394-396.

6. Oppenheim: Textbook of Nervous Diseases, translated by Bruce, New York, G. E. Stechert & Co. **2**: 953-960, 1911.

7. Hydrocephalus: Manual of Neurosurgery, Medical Dept. U. S. Army, pp. 422-423.



assumed that the drainage of the ventricles has been interrupted, and that we are dealing with hydrocephalus obstructivus. Furthermore, it has been proved conclusively, first that the quantity of cerebrospinal fluid absorbed within the ventricles, if any, is negligible; and secondly that from 30 to 60 per cent. of phenolsulphonephthalein should, under normal conditions, be secreted by the urine within the first two hours. If, therefore, 1 c.c. is injected into the ventricle and the amount secreted by the first two-hour urine specimen estimated, we have at once additional evidence that we are dealing with the obstructive type." Five minutes after the injection, a spinal puncture was done. There was no appearance of the dye; a clear fluid was obtained. Evidently the obstruction here was in the region of the aqueduct of Sylvius, and the fluid was secreted in the fourth ventricle. Moreover, the fact that a subsequent ventricular puncture revealed the dye one week after injection lends further evidence in support of this conclusion. The presence of the dye at this time proved that we were also dealing with the nonabsorptive type. The first specimen of urine, 42 c.c., gave a colorimetric reading of 1.25. The second specimen, 15 c.c., revealed a similar reading.

Regarding treatment, Dana<sup>5</sup> states that the results of surgical interference have so far been unsatisfactory. He mentions puncture of the ventricle or corpus callosum or a decompressive operation as therapeutic resorts. Dandy<sup>2</sup> says that in chronic hydrocephalus there is little hope of spontaneous cure, and that there is no hope from medicinal therapy; that the only hope lies in surgically correcting the cause of the disease, which is almost always an obstruction in the cerebrospinal spaces. He further states that surgical attempts to drain the fluid from the third ventricle to the exterior of the brain have all proved futile. He recommends the construction of a new aqueduct of Sylvius, leaving a tube in place for two or three weeks in the hope that the epithelium will regenerate and form a new canal. He performed this operation successfully on several occasions. The various authorities seem to differ greatly on the question of therapy.

*Operation and Result.*—Our patient was transferred to the surgical service for further observation. It was finally decided that the only hope lay in operative procedure. The operation was performed by Dr. Harry Kerr assisted by one of us (H. R. L.). Under ether anesthesia a suboccipital decompression was done through a posterior median incision. The pia arachnoid binding the cerebellum and medulla was carefully cut on each side of the median line, and an opening made. The cerebellum and the roof of the fourth ventricle were raised, and the floor exposed. The iter was explored and found to be patent. Neighboring adhesions were broken up and an artificial opening was attempted. The lobes of the cerebellum showed evidences of pressure, and the ventricle contained a large amount of fluid. The membranes were extremely friable, and after several attempts at closure by sutures, the adjacent soft tissues were used to form the roof of the ventricle.

After the operation the child did poorly. He became stuporous, vomited frequently, had numerous convulsive seizures, and died within three weeks.

The second case is of interest not only because of the etiologic and therapeutic factors involved, but also from the varied clinical features presented. It fits well into the new classification of Frazier under the heading of hydrocephalus nonabsorptus. He states that whether the restricted absorption is to be attributed to (1) the cutting off of part of the subarachnoid space by adhesions, (2) a toxic substance in the fluid which prevents its absorption by venous channels, or (3) whether it is due to an abnormal condition of the agents which transport the fluid to the venous circulation, is still a matter of conjecture. He mentions, further, that an obstruction to the venous circulation might be responsible for the delayed absorption, and that a change in the character of the fluid itself or an abnormal condition of the conveyors of the fluid to the venous circulation has etiologic significance. From the latter statement it seems logical to assume that, as the spinal Wassermann reaction in our case was three plus, the pathologic changes in the fluid may have

caused a secondary inflammatory reaction in the subarachnoid space, preventing absorption and causing consequent accumulation. The comparative nonprevalence of this reaction in adults we believe to be due to a lessened degree of sensitiveness of the spinal fluid to bacteriologic invasion and reaction; that minute gummas are formed in the walls of the blood channels in these specific cases, and that although the lumen of the vessel is narrowed, absorption is not greatly interfered with.

*CASE 2.—History.*—A white boy, aged 9 months, admitted, Sept. 11, 1921, was the first born of apparently physically weak parents; he was born at full term, and weighed 7½ pounds (3.4 kg.). At 6 weeks the child had an acute, purulent otitis media (right) which discharged for a period of five weeks. The child's appetite had been good, but for the last few weeks the mother stated that the child had been restless and that the bowels were irregular. He had been breast fed for three months, followed by feeding of whole milk dilutions and Mellin's food. The complaint on admission was increasing size of the head, with occasional vomiting. The mother thought that the child did not recognize any one.

*Physical Examination.*—The child was poorly developed, ill nourished, moderately ill, very restless and sweating considerably about the head, which measured 18¼ inches (27 cm.). The abdomen was distended, and there was a double Kernig's sign. The examination was otherwise negative. The Wassermann test of the blood was three plus. A Wassermann examination of the father was reported negative. Ophthalmoscopic examination revealed a bilateral choked disk.

One c.c. of neutral phenolsulphonephthalein was injected into the left lateral ventricle. Lumbar puncture, performed six minutes later, failed to reveal the presence of the dye, and in fifteen minutes there was no evidence of it. The urine showed the presence of the dye in twenty-two minutes. A two-hour collection gave an output of 15 per cent.

*Clinical Course.*—The child was placed on antisyphilitic treatment, and one week later the mother insisted on taking the child home. The following week the child was readmitted in an extremely bad condition. In spite of rigid stimulative treatment the child died within twenty-four hours of admission. Necropsy revealed hypostatic congestion of the lungs; an enlarged, acutely congested liver; a moderately enlarged, congested spleen; pale kidneys having the appearance of granular degeneration, a dilated stomach, and an acutely congested brain. The pia arachnoid was also markedly congested.

*Comment.*—Regarding therapy in this case, conditions were such that it was impossible to determine definitely the most suitable course. The mother objected strongly to any operative procedures, and as the child was under observation for only a short time we were unable to note any effects from antisyphilitic treatment. The production of a drainage tract into the pleural cavity, an operation suggested in this type of hydrocephalus, was not attempted because of the prevailing conditions.

During the period in which the foregoing cases were under observation, a third patient was admitted with a condition which, on investigation, proved to be of the type known as hydrocephalus hypersecretivus. A review of the records of the cases of "internal hydrocephalus" which were under observation in this institution in recent years failed to show any improvement under medical treatment, and in no instance was any operative procedure attempted. Many of the patients were discharged as "unimproved," while a certain proportion died of intercurrent disease. It would seem apparent, therefore, that until recently, following the work of Dandy, Blackfan, Frazier and others, the question of therapy in these cases was a problematic issue, and that little was to be hoped for in this respect.

Concerning the etiology of this type, Frazier states that since it has been proved that the cerebrospinal fluid is the secretory product of the choroid gland, it



would seem logical to suppose that a pathologic condition of the gland itself or a toxic substance in the fluid coming in contact with the plexus might bring about a hyperactivity of the cells.

**CASE 3.—History.**—A colored girl baby, aged 4 months, admitted, Sept. 25, 1921, had had progressive enlargement of the head since birth. The mother stated that the child took its feedings poorly, did not seem well, was very restless, and did not appear to thrive.

**Physical Examination.**—The child was moderately ill, with a greatly enlarged head which measured 23 inches (58 cm.) in circumference. The weight was 20 pounds (9 kg.). Blood and urine examination were negative. The day following admission the left lateral ventricle was entered and a small amount of fluid withdrawn. One c.c. of the neutral solution of phenolsulphonephthalein was injected and a spinal puncture performed six minutes later, the dye making its appearance at this time. The appearance time in the urine and the two-hour output were normal. Blood and spinal Wassermann tests were negative. Ophthalmoscopic examination revealed a pale right disk with the edges well marked and a ring of pigment around the temporal side. The left disk was markedly cupped, pale, with a ring of pigmentation. There was no capillary circulation.

**Treatment and Course.**—The general appearance and behavior of the child led us to believe that there might be some endocrine disturbance as the etiologic basis, secondarily affecting the secretory mechanism regulating the cerebrospinal fluid. With this in mind, the child was placed on thyroid extract, one-eighth grain (8 mg.) three times daily. After a week's treatment there was a marked improvement noted. The child seemed brighter, took its food well, and appeared stronger physically. The head measurement showed no increase at this time. The dosage was increased to one-fourth grain (16 mg.) three times daily on the tenth day.

**Comment.**—Relative to the significance of endocrine disturbances, we note that Timme<sup>8</sup> and Goetsch have brought forth some noteworthy data on this subject. Timme states that if the activity of the thyroid gland is impaired, the proteins are not split up for release from the body, the cells are clogged up by the amino-acids, oxidation becomes lower, and the entire body economy slows down. The resultant syndrome is a slow pulse, a lowered blood pressure, diminished cerebral activity, and a gain in weight. The excessive weight, poor muscle and tissue tonicity, loss of appetite and languid aspect which the child showed might easily be accounted for by the metabolic derangement resulting from a lowered activity of the thyroid gland. The action of the thyroid extract in this instance, causing a decomposition of the amino-acids, served to increase oxidation and consequently to stimulate the metabolic activities. Regarding its effect on the spinal fluid, Frazier noted in his experiments that it reduced the secretion by acting as a depressor on the choroid plexus.

**Further History.**—The child remained under treatment and observation for a period of three weeks, during which time there was a weight loss of 2½ pounds (1.13 kg.) and a marked improvement in the general condition. Unfortunately, we could not continue our observations, the mother insisting on removing the child after noting the improved condition.

In presenting these cases we have outlined our observations as carefully as possible, and hope that we have at least added something toward stimulating further interest in this subject, especially regarding the clinical and therapeutic aspects. Treatment in these cases is still in the experimental stage, and, although the methods advocated do not always lead to successful results, the improvement noted in many instances merits further attention and investigation by those who are called on to treat these cases.

#### CONCLUSIONS

1. Surgical procedures offer the best chances for successful treatment of the obstructive type, in the vast majority of cases.

2. The determination of a definite etiologic basis and the employment of all available methods to determine the type of internal hydrocephalus are essential for accuracy in the character of treatment instituted.

3. The hypersecretive and nonabsorptive types respond to medical treatment in direct proportion to the character of the underlying etiology and pathology.

4. The rôle of the endocrines in its clinical and therapeutic relationship to the hypersecretive type, while as yet indefinite, looms forth as a significant factor.

## SPINAL AND SPINOBULBAR TETRAPLEGIA OF ACUTE AND SUBACUTE ONSET

ITS CAUSES AND PROGNOSIS \*

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PHILADELPHIA

Paralysis of all four limbs might be termed quadriplegia or tetraplegia; since the Greek prefixes hemi, mono and tri are used, it seems that tetraplegia would be the more acceptable term although it is not so commonly used as quadriplegia. In addition, tetraplegia is a pure word, whereas quadriplegia is one of both Latin and Greek origin. Crural paraplegia of acute or subacute onset is a common disease, and paraplegia due to pressure such as arises from tumors of the spinal cord or from disease of the vertebra is only too frequently seen. Paralysis of all four limbs due to any cause is uncommon, if the paucity of the remarks seen on the subject in textbooks and the literature may be considered as proof.

Paralysis of all four extremities due to lesions of the upper cervical cord or lower part of the bulb may be due to: (1) occlusion of the anterior spinal artery; (2) hematomyelia; (3) cervical myelitis; (4) pressure on the spinal cord such as is exerted by a spinal tumor, Pott's disease, hypertrophic pachymeningitis and rarely by a hemorrhage outside the cord substance; (5) direct injury to the spinal cord, or (6) chronic degenerative diseases of the spinal cord, such as amyotrophic lateral sclerosis, and syringomyelia.

It is not my intention in this presentation to consider tetraplegia of chronic development or that due to direct injury of the spinal cord.

In 1903, Mills and Spiller reported a case of paralysis of all four limbs and one side of the face, with dissociation of sensation which developed in the course of a few hours and was due to a meningomyeloencephalitis. In their case at postmortem was found intense round-cell infiltration of the pia covering the medulla, and here and there throughout the medulla there were small vessels with round-cell infiltration about them. The right seventh nerve nucleus was exceedingly degenerated. The fourth, fifth and sixth cervical segments were so diseased that the normal relations of the white to the gray matter were entirely altered. Some of the small vessels within the spinal cord and pia at this level had changes in their coats, and there were numerous small hemorrhages within the spinal cord.

\* Read before the John Morgan Society, Dec. 2, 1921.

\* From the Philadelphia General Hospital and the University of Pennsylvania School of Medicine.

\*Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several case reports. The complete article appears in the author's reprints.

8. Timme, Walter: A Survey of Endocrinology, New York M. J. 113: 374-378 (March) 1921.



Lloyd has reported a case in which there was literally paralysis below the eyes. In this case, following a period in which there was subjective difficulty in speech and in walking, the patient quickly lost power in all four extremities, the lower part of the face, the tongue and the pharynx. His mind was clear, and he could move the eyes and wrinkle the forehead. Death ensued in two weeks. The lower part of the pons on its anterior aspect was the seat of extensive softening, and the basilar artery was thickened. The bulb was normal, but the cervical cord showed a cavity in the posterior columns.

In 1908, Spiller wrote about the symptomatology which one would expect to find from the occlusion of the anterior spinal artery at the upper limits of the spinal cord or the lower limits of the bulb. The syndrome was paralysis of all four extremities, the trunk and the neck, whereas the functions necessary to life would be preserved. This paralysis would be due to an involvement of the pyramids. Because of the anatomic fact that the lemniscus is immediately behind the pyramids, there would probably be a disturbance of the sense of position and vibration. The tongue might be involved. The syndrome might also be unilateral if only one anterior spinal artery was affected. Spiller reported, in his communication, a case of tetraplegia the result of disease of the anterior spinal artery.

At this point it might be worth while briefly to review the arterial supply of the upper part of the bulb and spinal cord. The anterior spinal arteries are branches of the vertebrals, and they unite to form the anterior median artery which runs down the entire length of the spinal cord, receiving reinforcement for the lateral arteries. According to Dana, the anterior spinal artery thus nourishes only a few upper segments of the spinal cord, the supply of the remainder of the cord being derived from the lateral arteries. The anterior median artery is not, as is generally supposed, a true prolongation of the anterior spinals, but is made up chiefly by the lateral spinals. Occasionally there is only one anterior spinal artery, and this usually arises, according to Duret, from the left vertebral. For a tetraplegia to result from a lesion of one anterior spinal artery, it would be necessary that there be only one, or that the anterior median artery be diseased shortly after it is formed by the union of the anterior spinals. The arterial supply of the posterior part of the spinal cord is formed by the posterior spinal arteries, which unite on the posterior surfaces of the spinal cord and supply chiefly the white matter, whereas the anterior median artery supplies the gray. From the posterior spinals are derived the plexuses on the posterolateral surfaces of the spinal cord.

In 1909, Spiller reported a case in which there was thrombosis of the cervical anterior median spinal artery. In this case, following the lifting of heavy blocks of ice, the patient became paralyzed in both upper extremities, and there was weakness in the lower extremities. There was also some disturbance of sensation, chiefly of pain and temperature, over the whole of the trunk and both forearms as high as the elbows. There was no disturbance of the sense of position. This man lived three years, and at necropsy the spinal cord showed a softening which began at the fourth cervical segment and involved the spinal cord as low as the second thoracic segment. The softening was due to a thrombosis of the anterior median spinal artery.

As examples of paralysis of all four extremities due to thrombosis of the anterior spinal artery, three cases are reported:

*CASE 1.—History.*—M. C., a white man, aged 59, admitted, Oct. 6, 1919, to the Philadelphia General Hospital to the service of Dr. William G. Spiller, complained chiefly of weakness of the knees. Three years before, the patient had been perfectly well. He had been lifting heavy timbers, and after a day of hard work he went to bed much fatigued. The following morning he could not get out of bed, and said that he was "paralyzed from the neck down." He was not unconscious, and had no trouble chewing or swallowing, and his face was not drawn to either side. The bowels and bladder were not affected. The tetraplegia lasted for two weeks and then improved gradually. The first return of power was in the right arm; then power returned in the left arm, and in about two months from the onset he was able to walk with the help of a cane. The man, who was intelligent, said that at no time did he lose the ability to recognize touch, pain and heat and cold.

*Physical Examination.*—The patient was fairly well developed, and presented no evidence of disease of the lungs, heart, kidneys, pupils or cranial nerves, although there was fairly well marked arteriosclerosis. The gait was markedly spastic, and the man tired quickly. All of the deep reflexes were exaggerated, and Babinski's sign was present on both sides. There was no ankle or wrist clonus. The muscular power in both upper extremities was fairly good; that in the lower extremities was weak. There were no atrophies or fibrillary tremors. Pain, touch and heat and cold were normal throughout the entire body. The sense of position was markedly impaired in the toes, and astereognosis was present in both hands; unfortunately, no note was made concerning the sense of position in the upper extremities. The man had peculiar paresthetic phenomena in his hands and feet; he said that his feet and ankles burned as though they were in an oven, whereas his hands were always cold. He continually wore a woolen glove on the left hand because of the sensation of coldness in that part. The urine showed no abnormalities, and the blood Wassermann reaction was positive in all antigens. A lumbar puncture was not permitted. He improved after a seven months' stay in the hospital, and left.

This man represents a case of occlusion of the anterior spinal artery at about the junction of the bulb and the spinal cord, thus involving the pyramids and the lemniscus, which lies immediately behind.

*CASE 2.—History.*—W. R., a white man, aged 38, was admitted, June 19, 1915, to the Philadelphia General Hospital to the service of Dr. W. G. Spiller. Thirteen months before the onset of his trouble his left arm felt stiff and numb, although this disability never prevented him from doing his work. In November, 1914, he was supposed to have pneumonia, but this is not certain. During that illness, which lasted six days and in which he was unconscious, he became totally paralyzed in both arms and legs, and could not move his head from side to side. He said that he could chew, swallow, talk and move his eyes; he did not lose control of the bladder, but was markedly constipated from the onset. The first return of power was the ability to move the head. After that the power gradually returned, so that by Feb. 23, 1917, he was able to walk a short distance without assistance. The right upper extremity and the left lower extremity have regained more power than their fellows. It is interesting to note that during part of this time, the patient was taking 1,000 grains (65 gm.) of potassium iodid daily, this having been prescribed by an optimistic therapist.

*Physical Examination.*—The patient was well developed and well nourished. The pupils, cranial nerves, lungs, heart and kidneys were normal. Romberg's sign was present, and the gait was markedly spastic, with an element of ataxia. All of the deep reflexes were exaggerated, with a bilateral ankle clonus and Babinski. The abdominal reflexes were normal. Marked atrophy was present in the muscles of the left shoulder girdle, and to a less degree in the deltoid and pectorals.



There was marked weakness in all movements of the left upper extremity and of both lower extremities, more marked in the right lower than the left. Power in the right upper extremity was fairly good. Complete astereognosis was present in both hands, and there was a great impairment of the sense of position in both hands, more marked in the left. Despite the fact that the patient had good power in the right hand, he had the greatest difficulty in dressing and undressing. The sense of position was lost in the toes of both feet. The sense of vibration was lost as high as the sixth rib, but was well appreciated above that point. Pain, heat and cold and touch were well appreciated throughout. This man also showed peculiar paresthetic phenomena in that his legs always felt cold. He also had dysesthesia in the right hand, as evidenced by the fact that a bowl of tea, not hot enough to burn his mouth, could not be picked up without producing severe discomfort in the right upper extremity. The spinal fluid of this man was negative, although the blood Wassermann reaction was strongly positive.

While he is still partially disabled, he has recovered sufficiently to be placed on the pay roll at the Philadelphia General Hospital.

This case is an example of the same condition described above, although in this patient the area of involvement went lower into the spinal cord because there was atrophy of the muscles of the left shoulder girdle. The case perhaps illustrates the rare occurrence of an involvement of the pyramids as they are decussating. In this man, although all four extremities were equally paralyzed at the onset and for months afterward, at present the right upper and the left lower extremities show by far the greatest improvement.

The third case is one of cervical myelitis probably due to occlusion of the anterior spinal artery or anterior median spinal artery. In this case the symptoms presented on examination indicated a lesion lower than in the two cases reported above.

**CASE 3.—History.**—J. B., a white man, aged 62, was admitted to the Philadelphia General Hospital, Aug. 18, 1913, being assigned to the medical department, and was later transferred to the service of Dr. C. K. Mills. According to the man's story, he went to work one day in February, 1898, feeling in his usual good health. While working, he became suddenly unconscious and did not regain consciousness for several days, when he noticed that he could not move any part of the body below his head. In seven months he recovered enough so that he was discharged from the hospital. After this illness he noticed that his hands and arms wasted. At no time had he had any pain except for a few weeks three and one-half years before admission, when he had pain and stiffness in his neck, and the stiffness became permanent. The patient had a chancre at the age of 16 years.

**Physical Examination** (Oct. 21, 1914).—The patient was intelligent, and could relate his history in a clear and logical manner and without contradiction. The pupils were unequal, the right being larger, and the reaction to light was very sluggish. Romberg's sign was present, and the gait was slightly ataxic. The movements of the head were restricted in all directions, and there was slight tenderness over the upper cervical vertebrae. The forearms and hands showed marked wasting, the left more than the right, the left being a claw hand. The thighs were atrophied, the left somewhat more than the right. The right biceps reflex was present and about normal; the left biceps reflex was very much diminished. Both triceps reflexes were present and normal. Both patellar and Achilles reflexes were lost. The abdominal reflexes were present and normal, but plantar stimulation produced no response on either side. Sensation was normal except for a small area which involved the supraclavicular fossa and the deltoid region on the right, in which pain sense was not appreciated. The peripheral arteries were sclerosed, and examination of the heart disclosed that the apex was in the sixth interspace in the anterior axillary line and that the signs of aortic regurgitation were present. Blood and spinal

fluid examinations were not made. The patient remained in the Philadelphia General Hospital until March 21, 1915, when he died of an acute cellulitis of the right leg. Dr. Lucke and I performed a necropsy; unfortunately, I have been unable to obtain the pathologic report.

This case appears to be one of occlusion of the anterior median spinal artery affecting chiefly the lower cervical cord. The anterior horn cells were involved, as shown by the atrophy of the forearms and the hands. The anterior horn cells in the lower part of the cord were also involved, but this may have been a process that occurred after the original thrombosis. The absence of pyramidal tract symptoms and the preservation of sensation are due to the fact that the anterior median spinal artery does not supply the posterior columns or the pyramidal tracts.

Injuries to the back, such as result from blows or falls, may produce a hemorrhage into the substance of the spinal cord. This occurs into the gray matter and very rarely into the white. The reason that hemorrhages occur into the gray matter is that the pressure in the arteries is high and the venous outlet is poor (Kadyi). Occasionally, hematomyelia occurs in the course of acute infections. Subdural or epidural hemorrhage is very uncommon. If hematomyelia occurs in the upper cervical spinal cord, there may be paralysis of all four extremities.

Cervical myelitis originating in the course of acute infections or occurring secondary to the disease of the blood vessels produced by syphilis may cause tetraplegia.

Instances of acute or subacute paralysis of all four extremities resulting from pressure on the spinal cord, unless it be due to trauma, are uncommon. In 1879, Mills reported a case in which the patient suddenly lost power in both arms, followed the next day by paralysis of both legs. At the necropsy a large clot of blood was found outside the dura and extending on the left side from the fifth cervical segment to the upper limit of the spinal cord. The dura was the seat of a number of irregular growths which proved to be gummas, and the upper segments of the spinal cord were the seat of a transverse myelitis. In this case there occurred that rare happening of a spontaneous extradural hemorrhage, which was probably due to an interference with the circulation produced by the new growths. I have seen one case in which paralysis of one arm and both legs came on suddenly, followed in a short time by paralysis of the other arm, the condition being due to Pott's disease.

The cases presented are not only of interest from the etiologic point of view and from the location of the lesions, but also of importance because of the recovery which most of them showed. Nothing more serious could happen to a person, perhaps, than a paralysis of all four extremities coming on either acutely or subacutely. That such a condition is not always hopeless and that marked improvement may result in patients suffering from tetraplegia is attested by most of the cases which I have presented. It is needless to say that those with the most favorable prognosis are those of syphilitic origin in which the treatment is pushed. The two patients with hematomyelia also improved remarkably, one of them making a complete recovery and the second patient regaining more power as time goes on. The woman (Case 6) who developed tetraplegia during the course of epidemic encephalitis and who was bed-fast for months made a complete recovery.

1909 Chestnut Street.



## EPIDEMIC (LETHARGIC) ENCEPHALITIS

RECURRENCE OF SYMPTOMS ONE AND ONE-HALF  
YEARS AFTER APPARENT RECOVERY \*

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With the passing of the epidemic of encephalitis, interest in this disease has also waned. It is only after a considerable interval of time, however, that we can fully estimate the permanent damage done by the infection; the chronicity of the disease and the question of relapse and reinfection.

Any one who has had a considerable experience with encephalitis will recall instances in which patients have relapsed, usually after an interval of days or weeks rather than months. One case has been reported with a recrudescence after one year (Blakesley), and recurrences have been seen during grip epidemics (Mayer). In my own experience, fatigue has been a potent factor in producing relapse, a long automobile ride immediately preceding a marked recrudescence in two instances.

The case herewith reported is placed on record because of the long interval (more than one and one-half years) between the disappearance of all symptoms and their recurrence. It is the longest interval or remission so far recorded, to my knowledge.

## REPORT OF CASE

M. C., a girl, aged 12 years, seen in consultation with Dr. J. A. True, Nov. 3, 1921, had had fever, vomiting, diplopia and paresis of the extremities, in February, 1920, during the height of the encephalitis epidemic. She was confined to bed for a week, and in six weeks had apparently made a complete recovery, returning to school. No abnormality was noticed until Oct. 16, 1921 (one year and nine months from the initial infection and more than one and one-half years after apparent recovery), when she developed slight headache, nausea, vomiting, fever, diplopia, anesthesia in the distribution of the right fifth nerve, and paresis of the right arm and leg with the Babinski sign. She slept practically all of the time for two days and nights. The condition then gradually cleared up and she went out, October 31. On the following day she developed numbness of the left side, with dizziness.

When seen, November 3, there was no fever; the child complained of slight headache and nausea, and had vomited. She was mentally clear but unresponsive, indifferent, rarely speaking and then only in monosyllables. The pupils were widely dilated and almost inactive to light. In convergence, the right eye would not turn in. There was incomplete ptosis of the left upper lid. Dr. Raymond Sprowl reported the eyegrounds normal. There was hypesthesia of the right face, marked paresis of the left arm, and moderate paresis of the left leg. The patella tendon reflex was increased on both sides; the Babinski reflex was present on the left, and a normal plantar response on the right. The abdominal reflexes were lost. The face was expressionless; there was no twitching nor choreiform movements, no bulbar symptoms nor hiccup. The heart and lung sounds were normal. The blood pressure was: systolic, 110; diastolic, 85. The cerebrospinal fluid was negative as to the Wasserman test, cells and increased globulin.

November 5, the child developed bulbar symptoms and a rapid rise of temperature, and died of respiratory paralysis.

## COMMENT

The question could be raised as to whether this child did not have a reinfection. While admitting this as a possibility, the known tendency of epidemic encephalitis to relapse, and the absence of any data regarding reinfection in the disease, point toward a flaring up of

encapsulated infectious foci, rather than a reinfection from an outside source.

It is interesting to compare encephalitis, from the standpoint of relapse and reinfection, with poliomyelitis, the disease with which it has so much in common. Taylor, in 1916, reported a case in which there were two attacks of poliomyelitis three years apart, and reviewed the literature on the subject. His conclusion was that, while an attack of poliomyelitis in the great majority of cases confers a lasting immunity, it is definitely established that exacerbations or relapses may occur at short intervals of time after the primary onset and, finally, that the evidence is accumulating to show that an actual second attack with reinfection from an external source may, and probably does occur in rare instances. What Taylor wrote of poliomyelitis may be true of encephalitis.

The possibility of a relapse in epidemic encephalitis after an interval of a year or longer is of interest to life insurance statisticians, who already are somewhat chary of renewing health policies to persons who have had encephalitis.

Paulsen Building.

## ACTIVE IMMUNIZATION WITH DIPHTHERIA TOXIN-ANTITOXIN

OBSERVATIONS OF THE SCHICK TEST: DURATION  
OF IMMUNITY CONFERRED BY IMMUNIZATION  
WITH DIPHTHERIA TOXIN-ANTITOXIN, AND  
INCIDENCE OF DIPHTHERIA FOLLOWING ITS ADOPTION

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CHICAGO

The value and efficacy of active immunization with diphtheria toxin-antitoxin mixture depends, first, on the degree and the duration of the immunity conferred, and, secondly, on the extent to which such immunization reduces the incidence of diphtheria.

The Schick test offers the means of determining the degree of immunity. According to Park,<sup>1</sup> any child over 2 years of age showing a negative Schick, when the test is properly made, is immune to diphtheria, probably for life.

Schroeder,<sup>2</sup> reporting on the duration of immunity conferred by injections of diphtheria toxin-antitoxin mixture, found that of twenty-eight children with a positive Schick test, twenty-two became negative within four months and remained so for five years. Of 570 schoolchildren retested in the last two years from 90 to 95 per cent. were found to be immune.

Zingher<sup>3</sup> and his co-workers have applied the Schick test to 52,000 children in the schools of New York City. Those who gave a positive reaction were given injections with toxin-antitoxin mixture. In one school, of 160 retested five months after injection, 87.5 per cent. gave a negative Schick reaction.

## THE PRESENT WORK

Immunization with diphtheria toxin-antitoxin was started at the Marks Nathan Orphan Home in May,

1. Park, W. H.: Does a Negative Schick Test Indicate Present and Future Security from Diphtheria? *Arch. Pediat.* **38**: 329 (June) 1921.

2. Schroeder, M. C.: The Duration of the Immunity Conferred by the Use of Diphtheria Toxin-Antitoxin, *Arch. Pediat.* **38**: 368 (June) 1921.

3. Zingher, Abraham: Diphtheria-Prevention Work in the Public Schools of New York City, *J. A. M. A.* **77**: 835 (Sept. 10) 1921.

\* Read before the Spokane County Medical Society, Spokane, Wash., Jan. 26, 1922.



1918, by the Department of Health of the City of Chicago. One cubic centimeter of toxin-antitoxin mixture was injected at weekly intervals until three injections had been received. Preliminary Schick tests, as well as tests shortly following immunization, were made, but, unfortunately, these records were not kept.<sup>4</sup> Since 1918, toxin-antitoxin injections have been given to all newly admitted children. Every child, therefore, with the exception of twenty-four who were recently admitted, has received three injections of diphtheria toxin-antitoxin. The first part of this report deals with the results of Schick tests which I made in January, 1922. The toxin and control used in the Schick test were prepared by the Chicago health department. Two-tenths cubic centimeter of toxin and the same quantity of control were injected intradermally just below the elbow of each arm, as recommended by Zingher.<sup>5</sup> Results were observed twenty-four hours, forty-eight hours and four days after injection. The reaction noted on the fourth day was taken as the final result. A number of results were doubtful. Negative pseudoreactions were also observed, but these are not recorded.

RESULTS OF SCHICK TEST

A total of 284 children varying in age from 5 to 16 were given the Schick test. Of these, 260 had been injected with diphtheria toxin-antitoxin.

Of 108 children, 102, or 94.4 per cent., showed a negative Schick test forty-four months after injections, which were made in May, 1918. A positive Schick test was obtained in three, or 2.7 per cent., and in three or 2.7 per cent., the reaction was doubtful.

Of sixty-seven children, fifty-six, or 83.5 per cent., were negative twenty months after diphtheria toxin-antitoxin injections, which were made in May, 1920. A positive Schick test was obtained on eight, or 11.9 per cent., and in three the reaction was doubtful.

Of forty children, thirty-nine, or 97.5 per cent., were negative sixteen months after injections, which were made in September, 1920. A doubtful Schick test was obtained in one case.

Of forty-six children, forty-five, or 97.5 per cent. were negative five months after injections, which were made in August, 1921, and in the remaining case the Schick test was doubtful.

Of the twenty-four children recently admitted to the home who did not receive injections of diphtheria toxin-antitoxin, six, or 25 per cent., were Schick positive, and seventeen, or 70.8 per cent., were negative. One case was doubtful.

These results are a striking confirmation of those obtained by the investigations in New York. The higher percentage of positive Schick results in the children not injected is also very clear.

THE INCIDENCE OF DIPHTHERIA SINCE IMMUNIZATION WITH TOXIN-ANTITOXIN MIXTURE

In 1921, twenty patients in all were admitted to the small hospital of the home complaining of "sore throat." These cases presented the same clinical features, which were elevation of temperature as high as 102, redness and swelling of the tonsils, the occurrence of an exudate on the tonsils, and a varying degree of toxemia. Routine cultures of the throat were made, and the specimens were examined by the health department. In six of these cases the bacteriologic report was posi-

tive for diphtheria bacilli. In each of these cases, injections with toxin-antitoxin mixture had been given, the longest interval since injection being forty-four months in one instance, and the shortest interval five months. No Schick tests were made at the time of the infection, but in January, 1922, all these patients were Schick negative. Because of the limited facilities in the hospital of the home, two of these patients were sent to the Durand Contagious Hospital, two to the municipal contagious hospital, and two were isolated in the private rooms of the home. The two patients remaining at the home presented no clinical evidence of diphtheria. Antitoxin was not administered, and in a period of four days they were afebrile. They were discharged after two negative cultures. Of the two patients admitted to the Durand Hospital, both were discharged with the diagnosis of tonsillitis. No antitoxin was administered in either case. The two patients sent to the municipal contagious hospital were treated with diphtheria antitoxin and regarded as having diphtheria.

In a recent communication, Park<sup>5</sup> states that "those who have natural antitoxin and those who acquire it through toxin-antitoxin injections may harbor diphtheria bacilli; and, if they later suffer from tonsillitis due to other microbes, throat cultures will contain diph-

RESULTS OF SCHICK TESTS AFTER INJECTION WITH TOXIN-ANTITOXIN

Time Interval After Injection	Number Tested	Results			
		Posi- tive	Negative		Doubt- ful
			Number	Per Cent.	
44 months.....	108	3	102	94.4	3
20 months.....	67	8	56	83.5	3
16 months.....	40	0	39	97.5	1
5 months.....	46	0	45	97.5	1

theria bacilli. The positive cultures alone suggest, but do not establish, that the suspected case is one of diphtheria." Further, "When diphtheria bacilli are present in the throat, which becomes the seat of other infections, they may develop their toxins and cause superficial lesions in the mucous membrane, even though the cases have sufficient toxin to give a negative Schick. Cases which present this possibility are rare but have done well without injection of antitoxin."

In view of these observations, it is safe to assume that at least four of these cases were not diphtheria. In the two instances in which antitoxin was administered, we must perforce assume that they were diphtheria. These two instances, which may justly be questioned, comprise the total number of cases of diphtheria in the Marks Nathan Orphan Home for the entire year of 1921. Prior to this, diphtheria had been a constant problem. In 1917, prior to the introduction of toxin-antitoxin in the home, there were ten cases. In 1918, the year in which diphtheria toxin-antitoxin was first introduced, there were two cases, and in both instances these children had not received toxin-antitoxin.

In 1919, in which year there was a total of three cases, one case occurred in a boy injected in May, 1918, with toxin-antitoxin mixture. In 1920, a total of fifteen cases was recorded as diphtheria. Of these patients, only four had received immunizing doses of diphtheria toxin-antitoxin, while the remaining eleven had not received injections. In the four cases in which

4. The superintendent of the home informs me that he recalls that of the 250 children on whom the Schick test was made in 1918, prior to toxin-antitoxin injection, 237 were positive and thirteen negative.

5. Park, W. H.: The Degree of Immunity to Diphtheria Insured by a Negative Schick Test, *Am. J. Dis. Child.* 22: 1 (July) 1921.



injection had been given, diphtheria was diagnosed in one, one month after injection, in another eight months after injection, and, in the two remaining, twenty-four months after injection. It is not possible for me to record any clinical data with reference to these cases, as no records are available.

## SUMMARY

The Schick test is a means of testing the immunity against diphtheria in those who possess a natural immunity and those who acquire an active immunity as a result of injection with diphtheria toxin-antitoxin. The duration of immunity conferred by injection of diphtheria toxin-antitoxin mixture, as determined by the Schick test, extended for a period of forty-four months in 94.4 per cent. of the cases, for twenty months in 83.5 per cent., and for sixteen months and five months in 97.5 per cent.

The incidence of diphtheria has decidedly diminished since injection of diphtheria toxin-antitoxin has been adopted as a routine measure.

25 East Washington Street.

## OXYGEN INFLATIONS OF PERITONEAL CAVITY IN TUBERCULOUS EXUDATIVE PERITONITIS

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In the course of my studies of artificial pneumoperitoneum as an aid to roentgen-ray diagnosis, the idea occurred to me that oxygen inflations of the abdominal cavity might be utilized therapeutically for the treatment of tuberculous peritonitis. Clinical observation had shown marked improvement exhibited by several children with peritonitis after the performance of one oxygen inflation prior to roentgen-ray examination. Unfortunately, these cases could not be followed up at the time on account of other urgent demands on my time, but I resolved to try out this therapeutic measure at the first opportunity. This presented itself soon, and the case is worthy of some interest:

## REPORT OF CASE

Mrs. T. M., aged 32, was referred to me by Dr. B. Sachs with the complaint of constant pain in the back, and I saw her first, Oct. 26, 1920. The family history was negative. She had had one confinement several years before, and had always had very painful menstruation. Urination was frequent by night as well as by day. The patient had no other complaints, but felt otherwise well and looked the picture of health.

A general examination at that time revealed the heart, lungs and abdomen to be normal. Deep pressure over McBurney's point elicited slight pain. The patient seemed to be in excellent general health; and her weight was 156 pounds.

The vulva and vagina were normal; the cervix pointed toward the symphysis. The body of the uterus was retroflexed. The posterior parametrium exhibited marked tenderness on the effort to push the uterus back into position. The adnexa appeared normal.

The patient was advised to have the uterus replaced in its normal position, and an operation was accordingly performed by me at the end of October. A transverse (Pfannenstiel) incision was made, the uterus was suspended, and the adnexa were freed from their adhesions. The appendix was, of course, also removed. At the time of operation the parietal as well as visceral peritoneum and the omentum were perfectly normal, and there was not the slightest evidence of tuberculosis in either adnexum. The postoperative course was

uneventful, and the patient left the hospital about two and a half weeks after operation completely cured.

I did not see the patient again until March, 1921, about three months after her discharge from the hospital. At that time she complained of marked pains, which had appeared very suddenly in the right lower abdomen, and of a sensation of "fulness" in the abdomen, which amounted to acute discomfort after eating. At that time she did not look as well as formerly, but a careful examination of the abdomen permitted no definite diagnosis. To exclude the gallbladder and kidneys, a roentgen-ray examination (without artificial pneumoperitoneum) was undertaken, and normal conditions were reported. The patient therefore received some tonics and was put under observation. Her condition, however, failed to improve, growing progressively worse. The abdominal pains became more severe, and the abdomen increased in size. Night sweats also made their appearance.

One evening in March I was called to the home of the patient. Her temperature was 105; pulse, 120. Extreme distention of the abdomen was accompanied by marked pain. The patient was in a profuse perspiration. Examination revealed the presence of free fluid in the abdomen, and a diagnosis of acute, exudative tuberculous peritonitis with marked accumulation of fluid was made.

On the following day, March 25, the patient was transferred to Lenox Hill Hospital, and on March 28 a roentgenogram was taken following artificial pneumoperitoneum.<sup>1</sup> Dr. Stewart reported: "Roentgenographic examination reveals free fluid in the peritoneal cavity as shown by the change in the fluid level. In the plate taken on the back we have evidence of adhesions and thickening of the peritoneum. Roentgenographically, the case presents evidence of tuberculous peritonitis."

March 29, a roentgenogram of the lungs failed to detect evidence of pulmonary tuberculosis.

Concerning the therapeutic aspect of this method, the oxygen which was injected at the time of the pneumoperitoneal roentgen-ray examination was not withdrawn. Thirty-six hours later there was still some oxygen present. The whole procedure did not cause the patient the slightest discomfort, and the improvement in her general condition after this single inflation was most marked. By April 1, her temperature had dropped to about 100. She was therefore given another therapeutic oxygen inflation of the abdominal cavity on that date. About 4 liters (244 cubic inches) of oxygen was injected, causing no discomfort whatever. The patient even looked forward to the treatment, anticipating the promptly beneficial effects which had followed the first inflation.

March 6 and the next few days another slight rise in temperature was noted, but the night sweats disappeared completely. April 5 and 11, two more inflations were performed, and on the morning following the last one the temperature dropped to practically normal and remained normal.

The patient was discharged from the hospital the next day, and from that time on her condition remained perfectly normal. I saw her several times at my office during April. She had promptly proceeded to take on weight, made no complaints whatever, and presented an extremely healthy appearance. I warned her, however, that she might at any time experience a recurrence of a milder type, and should this happen directed her to report at once to me for further oxygen inflations.

Not long afterward, while visiting relatives in Baltimore, she had another attack and intended to return at once to New York to consult me. She was overruled, however, by her relatives in that city, and Dr. Maurice Lazenby of Baltimore was accordingly called on. Dr. Lazenby wrote me, May 5:

"My diagnosis in Mrs. M's case was papillo-adenocystoma of the ovary with probable malignancy. On April 25 I operated. I made at first a midline incision. My incision extended down to the peritoneum, but when advanced this far I found the peritoneum markedly edematous and thickened and was unable to gain entrance to the abdomen. I made a second incision, a high right rectus, about 2 inches in length

1. The technic of artificial pneumoperitoneum has already been fully described (Stein, Arthur and Stewart, W. H.): *Pneumoperitoneal Roentgen-Ray Diagnosis*, J. A. M. A. 75:7 [July] 1920; *Pneumoperitoneal Roentgen-Ray Diagnosis* (A Monograph with Atlas), Troy, N. Y., Southworth Company, 1921.



in hopes that I might be able to accomplish something by this route. I was able to get into the abdomen, in which quite a large quantity of blood-tinged serous fluid with numerous flaxes was found. The omentum was fastened firmly to the anterior abdominal wall. Upon exploring the upper cavity, finger came in contact with a nodule about 2 cm. [three-fourths inch] in diameter in the omentum which was very hard and suggested carcinoma. This was excised. Upon further exploration there were found numerous nodules over the under surface of the liver and as far as the finger could reach on the peritoneum. Attempt was made to gain entrance through the lower incision by finger through the upper incision. There were found, however, numerous loops of gut adherent to the abdominal wall. This was especially true in the region of the sacrum. Patient was then closed. The specimen removed was examined at the time first by frozen section and later confirmed by prepared specimen and found to be tubercular. In this specimen there were numerous caseating tubercles.

"As a guide for you in your prepared work I would suggest that the injections you intend to make be made high in order to avoid these loops of bowel."

According to this letter it is plain that the abdominal cavity was not opened at all at the point of Dr. Lazenby's first incision, and only a small portion of the peritoneum was excised through another very small incision for microscopic examination. This microscopic diagnosis confirmed our original pneumoperitoneal roentgen-ray as well as clinical findings.

The patient has had no further attacks, and at the present time weighs (stripped) 152 pounds (69 kg.), whereas at the time of her illness in March her weight was 124 pounds (56 kg.).

#### COMMENT

While the effect of air on tuberculous peritonitis is known to all internists as well as surgeons, it having been countless times proved that after laparotomy for tuberculous exudative peritonitis the general condition of the patient improved, it is clear that this new procedure of oxygen inflation offers a tremendous advantage over laparotomy as a therapeutic measure. The pneumoperitoneal method may be employed as often as indicated, ten, twelve or fifteen times, even more if desired, while a laparotomy with its accompanying shock, etc., may at the utmost be resorted to only twice. The patients experience little or no discomfort from the inflations, and after realizing the immediately beneficial effects of the first oxygen administration they usually look forward cheerfully and contentedly to the next treatment.

At present there is at Harlem Hospital, in Dr. Riesenfeld's service, a child, aged 11 years, who was admitted with a markedly distended abdomen filled with free fluid, and a diagnosis of exudative tuberculous peritonitis. So far, ten inflations have been administered with results that are simply amazing.

In passing, it might be mentioned that it is advisable to remove the ascitic fluid. It will be found also that these ascitic patients can tolerate much greater inflation (up to 5 or 6 liters [from 305 to 366 cubic inches] of oxygen) owing to the distention of the abdominal walls by the ascitic fluid. These patients rarely complain of any discomfort throughout the procedure.

No satisfactory explanation for the improvement of tuberculous peritonitis by surgical intervention has been offered, but it may well be that contact of the infected peritoneum with the atmospheric air, i. e., the oxygen contained therein, is the effective factor. In combination with laparotomy, oxygen has been utilized in the treatment of tuberculous peritonitis by McGlinn of Philadelphia (1908) and Bainbridge of New York.<sup>2</sup>

To the best of my knowledge, my own observation is the first case to be reported in the United States of an

apparent cure of tuberculous peritonitis of the exudative type by the sole means of therapeutic pneumoperitoneum, and I therefore feel justified in offering this preliminary report.

NOTE.—Since this article was completed, it has been my good fortune to be furnished with some additional experience on this subject. Dr. Max Einhorn of this city referred to me for examination a Greek girl, aged 24 years, who was suffering with a marked abdominal distention. Clinical as well as pneumoperitoneal roentgen-ray examination revealed general tuberculous exudative peritonitis. So far this patient has received two oxygen inflations with very marked improvement in the abdominal conditions.

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## ETIOLOGY OF HAY-FEVER IN ARIZONA AND THE SOUTHWEST\*

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This investigation was made possible only by the cooperation of Prof. J. J. Thornber, head of the Botanical Department of the University of Arizona. Many of the questions that arose could be answered by no other person than Professor Thornber, to whom full credit is due for his share in our work.

Hay-fever is caused by the pollens of certain plants; these plants are virtually always the wind pollinated plants and not the insect pollinated. Sensitization to plant pollen can be determined satisfactorily only by cutaneous tests.

There are certain insect pollinated plants whose pollen contains a noxious element, which will give a positive skin test in certain individuals, and whose pollen will undoubtedly produce hay-fever symptoms if inhaled; yet we would emphasize that these pollens are never found in the air in any great quantity;<sup>1</sup> they are practically not a factor in the hay-fever situation, except in very exceptional instances, for example, when the flowers are deliberately smelled or are grown in great profusion in close contact with the patient, or perhaps in some cases in which they are used as room decorations. While roses, daisies, dandelions, sunflowers, goldenrod, etc., all of which are insect pollinated plants, will in certain individuals give a positive skin reaction, and while they are capable of exciting hay-fever symptoms on inhalation, they are seldom the cause of hay-fever, because these pollens are not present in the air in sufficient quantities. If skin tests with any of these pollens are made and a positive reaction is obtained, the conclusion must not be drawn that this pollen is the cause of the patient's hay-fever, for patients are often sensitized to pollens which are not the cause of their hay-fever. One must go further and make skin tests on these patients with the pollens of the various wind pollinated plants growing in the vicinity where the patient lives and known to be pollinating at the same time that the patient's symptoms occur. If this is done, it will usually be found that they will probably also show a reaction to some wind pollinated plant that begins to pollinate when their

\* Read before the Seventh Annual Session of the Medical and Surgical Association of the Southwest, Phoenix, Ariz., Dec. 1, 1921.

1. Scheppegegrell, William: Hay-Fever and Its Relation to One Hundred of the Most Common Plants, Trees and Grasses, M. Rec. 92: 230 (Aug. 11) 1917.

2. The literature on this subject is given by Stein and Stewart in the monograph mentioned in Footnote 1.



symptoms occur; this wind pollinated plant's pollen would be the pollen to choose to make an extract for treatment, rather than the pollen of the insect pollinated plant.

Although it is some wind pollinated plant that is virtually always responsible for the occurrence of hay-fever, not all wind pollinated plants cause hay-fever; there are many wind pollinated plants that are harmless from a hay-fever standpoint. Considering these plants

TABLE 1.—CLASSIFICATION OF ALL PLANTS FROM STAND-POINT OF HAY-FEVER

All Plants are either	1. Water pollinated	Never cause hay-fever	1. When flowers are deliberately smelled 2. When plants grow in great profusion in immediate vi- cinity of patient 3. When used as room decoration
	2. Close pollinated		
	3. Insect pollinated	Do not cause hay-fever except in exceptional instances as	
	4. Wind pollinated		
<hr/>			
Group 1 Cause Hay-Fever		Group 2 Do Not Cause Hay-Fever	
1. Gramineae or Poaceae (Grass Family) by Tribes	Tribe	Common Name	All wind polli- nated plants not especially mentioned un- der Group I
	1. Maydeae	Corn	
	2. Andropogoneae	Sorghum	
	3. Zoysieae	Galleta grass	
	4. Paniceae	Millet	
	5. Oryzeae	Rice	
	6. Phalarideae	Canary grass	
	7. Agrostideae	Bent grass	
	8. Aveneae	Oats	
	9. Chlorideae	Finger grass	
	10. Festuceae	Fescue	
	11. Hordeae	Barley	
II. Compositae (Composite or Sunflower Family) by Genera	Genus	Common Name	
	1. Artemisia	Wormwood	
	2. Ambrosia	Ragweed	
	3. Franseria or Gaertneria	False ragweed	
	4. Iva	Marsh elder	
	5. Xanthium	Cockle bur	
	6. Hymenoclea	Jecote	
	7. Parthenice	No common name	
	8. Dicoria	No common name	
III. Amaranthaceae (Amaranth or Tumbleweed Family) by Genera	1. Amaranthus	Amaranth	
	2. Acnida	Water hemp	
IV. Chenopodiaceae (Lamb's Quar- ters or Goose- foot Family) by Genera	1. Chenopodium	Goosefoot	
	2. Atriplex	Salt bush	
	3. Salsola	Russian thistle	
	4. Cycloloma	Winged pigweed	
	5. Eurotia	Winter fat	
	6. Sarcobatus	Grease wood	
	7. Suaeda or Dondia	Sea blite or Alkali weed	
	8. Grayia	No common name	
	9. Salicornia	Glasswort	
	10. Monolepis	Patota	
V. Polygonaceae (Buckwheat or Smartweed Family) by Genera	1. Rumex	Dock	
VI. Plantaginaceae (Plantain Fam- ily) by Genera	1. Plantago	Plantain or ribwort	
VII. Certain Trees by Genera notably	1. Populus	Cottonwood	
	2. Fraxinus	Ash	
	3. Quercus	Oak	
	4. Juglans	Walnut	
	5. Hicoria or Carya	Hickory	
	6. Juniperus	Cedar	
	7. Acer	Maple	
	8. Ulmus	Elm	

placed in botanic families, there are six families, together with a group of certain trees, that contain practically all of the wind pollinated plants that may cause hay-fever. This makes seven groups: (1) *Gramineae* or *Poaceae* (grass family); (2) *Compositae* (composite or sunflower family); (3) *Amaranthaceae* (amaranth or tumbleweed family); (4) *Chenopodiaceae* (goosefoot or lamb's quarter family); (5) *Polygonaceae* (smartweed or buckwheat family); (6) *Plantaginaceae* (plantain family), and (7) certain trees.

This list applies, not only for Arizona and the Southwest, but for the entire United States; a hay-fever plant, wherever growing, will almost always be found a member of one of these groups.

The seven groups may be still further divided into genera, and the genera subdivided into species in all families. In some of the larger families, as *Gramineae* and *Compositae*, the genera are grouped into tribes; in the smaller families there is no grouping into tribes, but the family is directly subdivided into genera. This is all shown in Table 1. The various species in any group are not included, because it would make the table too cumbersome. This table has been constructed so that one may use it to determine, at a glance, whether or not any plant under consideration is a factor in the production of hay-fever.

As it has been definitely proved that hay-fever is due to the pollen of wind pollinated plants, before one can rationally treat hay-fever, one must know what plants of this type are in the patient's vicinity and which ones produce hay-fever. To obtain this information, it is first necessary to make a census of all wind pollinated plants, with data as to their location, profusion of growth, amount of pollen and time of pollination and to gather the pollen of the plants which are possibly a factor and perform cutaneous tests for sensitization.

Grant Selfridge<sup>2</sup> of San Francisco, with the aid of Prof. H. M. Hall of Berkeley, began an investigation having to do with the Pacific Coast pollens, and at the time our work was started he was the only western man, so far as we know, who was doing any work on this problem, with the single exception of Key<sup>3</sup> of Texas, who showed that a certain winter type of hay-fever prevalent in his section of Texas was due to Mountain Cedar (*Juniperus sabinoides*). Since beginning his work several years ago, Selfridge has done much to clarify his part of the western hay-fever problem (California), and much credit is due him. If our botanic flora were only the same as that of California, which those not familiar with the variations of botanic flora might expect, on account of our joining California on the west, Selfridge would already have solved a number of our problems for us; unfortunately, however, west of the Mississippi basin the botanic flora of the country is divided into three distinct areas. The plants of each area differ from one another, and all differ from the flora of the rest of the country.

These areas are the Pacific Coast area, including the coast region of California, Oregon and Washington; the Rocky Mountain area, including the Black Hills of South Dakota, Colorado, Wyoming, the eastern half of Utah, southern Idaho, Montana, northern New Mexico and adjacent Arizona; and the Southwestern area, including southwestern Texas, the southern half of New Mexico, all of Arizona except the extreme northern part, southeastern California, and northern old Mexico. In spite of the variations in altitude in Arizona and the Southwest, the flora differs very little, until an altitude of about 4,500 feet is reached, when the flora resembles the Rocky Mountain region.

Owing to the difference in climatic conditions, etc., in the Southwest, the hay-fever problem is different and more complex than in the Eastern, Southern or Central states, for the reasons that: (1) The season

2. Selfridge, Grant: Spasmodic Vasomotor Disturbances of the Respiratory Tract, with Special Reference to Hay-Fever, California State J. Med. 16: 164 (April) 1918.

3. Key, S. N.: The Etiology of Winter Hay-Fever in Texas, Texas State J. Med. 13: 308 (Jan.) 1918.



for pollination is a long one, frequently from the last of January or first of February, until the first or middle of November. (2) There is a great variety and an abundance of wind pollinated plants. (3) The relatively low humidity and meager rainfall favors wind pollination. (4) The variation in the annual rainfall results in a changeable flora to a certain extent. For example, abundant winter rain favors one type of flora and light winter rain and abundant summer rainfall

pollen; they must be located near enough habitations so that their pollen can be carried this distance by the wind; their fluorescence must be associated with hay-fever; they must produce positive skin tests. In indicating the plants of importance in the hay-fever problem in Arizona and the Southwest, all of the foregoing prerequisites have been considered in submitting the list of wind pollinated plants given in Table 2, which includes all plants growing in any

TABLE 2.—PLANTS CAPABLE OF PRODUCING HAY-FEVER IN THE SOUTHWEST

I. Gramineae or Poaceae	Grass family	II. Compositae—Continued	Sunflower family
Tribe Maydeae	Corn	Ambrosia psilostachya	<input type="checkbox"/> Western ragweed
Zea mays	Corn	Franseria ambrosioides	<input type="checkbox"/> Bur ragweed
Tribe Andropogoneae	Sorghum grasses	Franseria discolor	<input type="checkbox"/> Low ragweed
Andropogon sorghum halepensis	<input type="checkbox"/> Johnson grasses	Franseria acanthicarpa	<input type="checkbox"/> Prickly ragweed
Andropogon sorghum vars.	Cultivated sorghum	Franseria tenuifolia	<input type="checkbox"/> False ragweed
Andropogon saccharoides	Silver top	Franseria deltoidea	<input type="checkbox"/> Rabbit bush
Andropogon halepensis sudanensis	Sudan grass	Franseria dumosa	<input type="checkbox"/> Desert ragweed
Tribe Zoysiaeae	Galleta grasses	Iva xanthifolia	<input type="checkbox"/> Marsh elder
Hilaria cenchroides	Texas mesquite	Iva ambrosiaefolia	<input type="checkbox"/> Coarse ragweed
Hilaria rigida	Desert galleta	Iva axillaris	<input type="checkbox"/> Poverty weed
Hilaria mutica	Galleta grass	Xanthium commune	<input type="checkbox"/> Common cockle bur
Tribe Paniceae	The millet grasses	Hymenoclea monogyra	<input type="checkbox"/> Jecote
Panicum sanguinale	Crab grass	Hymenoclea salsola	<input type="checkbox"/> No common name
Tribe Oryzcae	Rice grasses	Dicorea brandegii	<input type="checkbox"/> No common name
Tribe Phalarideae	Canary grasses	Dicora canescens	
Phalaris caroliniana	Southern canary grass		
Tribe Agrostideae	Bent grasses	III. Amaranthaceae	Pigweed or Tumbleweed
Aristida fasciculata	<input type="checkbox"/> Texas poverty grass	Amaranthus palmeri	⊕ Careless weed (Bledo)
Aristida divaricata	Texas poverty grass	Amaranthus retroflexus	⊕ Redroot (pigweed)
Aristida scabra	Mountain bunch grass	Amaranthus graecizaus	<input type="checkbox"/> Tumble weed
Muhlenbergia gracilis	<input type="checkbox"/> Beard grass		
Polypogon monspeliensis	<input type="checkbox"/> Sacaton grass	IV. Chenopodiaceae	Lamb's quarter (Goose foot)
Sporobolus wrightii	<input type="checkbox"/> Fine-top alkali grass	Chenopodium album	<input type="checkbox"/> Lamb's quarter [family]
Sporobolus airoides		Chenopodium ineanum	<input type="checkbox"/> Desert lamb's quarter
Sporobolus interruptus		Chenopodium fremontii	<input type="checkbox"/> Western lamb's quarter
Agrostis exarata		Atriplex rosea	<input type="checkbox"/> Red orach
Tribe Aveneae	Oat grasses	Atriplex wrightii	⊕ Annual saltbush
Avena fatua	Wild oats	Atriplex elegans	<input type="checkbox"/> Annual saltbush
Avena sativa	Cultivated oats	Atriplex canescens	⊕ Shad scale
Tribe Chlorideae	Gramma grasses	Atriplex canescens linearis	<input type="checkbox"/> Mesa shad scale
Bouteloua gracilis	<input type="checkbox"/> Blue grama	Atriplex polycarpa	<input type="checkbox"/> Many seeded saltbush
Bouteloua hirsuta	<input type="checkbox"/> Hairy grama	Atriplex lentiformis	<input type="checkbox"/> Silver and gold saltbush
Bouteloua rothrockii	<input type="checkbox"/> Rothrock's grama	Salsola pestifer	<input type="checkbox"/> Russian thistle
Bouteloua aristidoides	<input type="checkbox"/> Six weeks grama	Cycloloma atriplectifolia	<input type="checkbox"/> Winged pigweed
Bouteloua radicata	<input type="checkbox"/> Spruce-top grama	Eurotia lanata	<input type="checkbox"/> Winter fat
Bouteloua barbata	Six weeks grama	Sarcobatus vermiculatus	<input type="checkbox"/> Greasewood
Bouteloua procumbens	Carpet grama	Dondia suffrutescens	<input type="checkbox"/> Quelite salado
Bouteloua eriopoda	<input type="checkbox"/> Wire grama	Dondia moquini	<input type="checkbox"/> Quelite salado
Capriola dactylon	<input type="checkbox"/> Bermuda grass	Monolepis nuttallianus	<input type="checkbox"/> Patota
Chloris elegans	<input type="checkbox"/> Annual finger grass		
Tribe Festueae	Fescue grasses	V. Polygonaceae	Buckwheat or Smartweed
Bromus arizonicus	<input type="checkbox"/> Arizona brome grass	Rumex hymenosepalus	<input type="checkbox"/> Canaigre [family]
Tridens pulchella	<input type="checkbox"/> Low desert grass	Rumex crispus	<input type="checkbox"/> Curled dock
Arundo donax	Giant reed grass	Rumex mexicanus	<input type="checkbox"/> Mexican dock
Eragrostis major	<input type="checkbox"/> Stink grass		
Eragrostis pilosa	<input type="checkbox"/> Love grass	VI. Plantaginaceae	Plantain family
Distichlis spicata	<input type="checkbox"/> Salt grass	Plantago lanceolata	<input type="checkbox"/> Ribbon grass
Poa annua	<input type="checkbox"/> Annual spear grass	Plantago fastigiata	<input type="checkbox"/> Indian wheat
Poa pratensis	⊕ Blue grass (June grass)	Plantago ignota	<input type="checkbox"/> Indiau wheat
Poa fendleriana	<input type="checkbox"/> Mutton grass		
Tribe Hordeae	Barley grasses	VII. Miscellaneous trees	Cottonwood or Poplar fam-
Agropyron smithii	<input type="checkbox"/> Western blue grass (Wheat grass)	Salicaceae	<input type="checkbox"/> Native cottonwood [ily]
Agropyron pseudorepens	<input type="checkbox"/> Slender wheat grass	Populus wislizeni	<input type="checkbox"/> Black cottonwood
Hordeum sativum	Cultivated barley	Populus acuminata	<input type="checkbox"/> Narrow-leaf poplar
Hordeum murinum	<input type="checkbox"/> Wall barley (Foxtail)	Populus angustifolia	⊕ Macdougall's cottonwood
Hordeum jubatum	<input type="checkbox"/> Squirrel tail	Populus macdougall	
II. Compositae	Sunflower family	Oleaceae	Olive or Ash Tree family
Artemisia tridentata	<input type="checkbox"/> Sagebrush	Fraxinus Toumeyi	<input type="checkbox"/> Arizona ash
Artemisia filifolia	<input type="checkbox"/> Narrow leaf sage		
Artemisia dracunculoides	<input type="checkbox"/> Tall wormwood	Fagaceae	Oak family
Artemisia gnaphaloides	<input type="checkbox"/> Mugwort	Quercus turbinella	<input type="checkbox"/> Scrub oak
Artemisia canadense	<input type="checkbox"/> Canadian wormwood	Quercus emoryi	<input type="checkbox"/> Bellota (Black oak)
Artemisia biennis	Annual wormwood	Quercus oblongifolia	<input type="checkbox"/> Blue oak
Ambrosia aptera	<input type="checkbox"/> Tall ragweed	Quercus arizonica	<input type="checkbox"/> Arizona oak (White oak)
		Quercus submollis	<input type="checkbox"/> Post oak
		Juglandaceae	Walnut family
		Juglans major	Arizona walnut
		Aceraceae	Maple family
		Acer negundo	Box elder

Key: ☐ Plants probably of secondary importance; ☐ plants probably of primary importance; ⊕ plants probably the very most important of those of primary importance; plants probably of little importance are all those that are not marked with any of foregoing symbols.

favors another type, so what causes hay-fever one year may not cause it the following year. Although our assertion is not founded on statistics, it appears that there is considerably more hay-fever in Arizona and the Southwest than the usual 1 per cent. in other regions. From these facts we believe that the problem here assumes more importance than in other areas.

As stated before, plants to be an important factor in hay-fever must be wind pollinated; in addition, their pollen must be susceptible of being carried a considerable distance and therefore must be small and buoyant; they must grow in profusion and produce abundant

abundance in Arizona that are capable of producing hay-fever. Probably the majority exist in so few places and grow in such amounts that they are not a factor, except in very occasional cases. In presenting this list, we believe it as complete as it is possible to make it. In indicating the relative importance of the various species of plants in the hay-fever problem, however, we wish it understood that further experience will show changes, particularly by elimination in those plants marked of secondary importance, and so we submit their relative importance as a working basis subject to future revision.



## DESENSITIZATION

It has been stated by two or three investigators, particularly by Scheppegrell<sup>4</sup> and by Goodale,<sup>5</sup> that a patient sensitized to any grass may be desensitized by an extract made from any other member of the grass family and particularly timothy; also that a patient sensitized to any member of the *Compositae* may be desensitized by any other member of the same family. Scheppegrell<sup>4</sup> has gone even further and grouped all *Rumex* (*Polygonaceae*), chenopods and amaranths together, asserting that they are so closely related that any member of the three groups may be used to desensitize against any other member of the same three groups. It is our opinion that further study and observation will prove that these statements are incorrect. Our skin tests and study have already convinced us of this, and we believe that the continued promulgation of these ideas, which many men accept as true, simply tend to confuse the subject and retard results. For example, we have found here that most reactions in the grasses are due to Bermuda grass; and most of the hay-fever that we have seen caused by grass was caused by Bermuda grass. According to the prevalent expressed opinion, hay-fever patients sensitive to Bermuda grass could be desensitized by using an extract of timothy pollen. We do not believe this, for the larger number of our cases who showed a reaction to Bermuda grass were absolutely negative to timothy. The same thing obtains in the *Compositae*—there were several patients who reacted to *Franseria tenuifolia* (slender ragweed), for instance, who gave no reaction to *Ambrosia elatior* (common ragweed), although both of these are *Compositae* and belong to the ragweed tribe. There were any number of patients who reacted to *Amaranthus palmeri* (careless weed) who gave no reaction at all to *Rumex* (docks) or chenopods (goose-foots). According to Scheppegrell,<sup>4</sup> any of these three should desensitize for any of three others, for they are all members of his chenopod group.

Certainly no one could expect to desensitize with any pollen that would not show a skin reaction. Such reasoning is not logical, and is, we believe, the result of trying to simplify the treatment problem too far. We think that, in all probability, it will be shown ultimately that for the grasses, one member of the same tribe may have the same noxious element as all the other members of that tribe, and so it may be used to desensitize against any other member of the same tribe; and in other families, any member of a genus may probably be used in like manner. In other words, we believe that finally it will be shown that one may desensitize to some pollen by any other member of that pollen's genus or possibly tribe, but not by any member of the family or different families, though even this might occur in exceptional instances. It is to be remembered, however, that an extract of the particular species of pollen which is shown by the skin test to be the offender is always the pollen extract to use. It is very likely that one of the reasons more perfect results are not secured in the treatment of this disease (outside, of course, of the cases caused by animal emanations, bacteria, food, etc.) is that the treatment has not been specific enough, that is, it has depended too much on large group reactions. While these group reactions certainly occur to a certain extent in the grass family, and in the ragweed tribe of the *Compositae* family,

yet they do not in a great many instances. The utilization of the principle of group reactions in diagnosis and treatment may be quite satisfactory in the Central, Southern and Eastern states, where the great majority of hay-fever cases is caused by one member of the grass family (timothy) and one member of the ragweed tribe (common ragweed). But in view of our observations in the Southwest, where there are many other factors, the use of this principle in the situation here, it appears, would not only produce unsatisfactory results, but would retard hay-fever progress.

## TREATMENT WITH POLLEN EXTRACTS

The attempt to relieve hay-fever in the Southwest by stock pollen solutions based on group reactions, with no attention paid to the marked difference in flora between the East and the West, will largely fail. Selfridge<sup>6</sup> of California has called attention to this fact. The components of stock pollen solutions heretofore sold by drug houses are based on the flora of the East, not of the West. This method of treatment in the Western states is all the more irrational since it has been shown by Walker<sup>7</sup> that it is advisable to use a single pollen extract if possible, and make a maximum injection contain from 2,000 to 2,500 units of pollen extract, which is impossible with an extract containing four or more plant pollens. If good results are going to be obtained in the treatment of hay-fever in the Southwest, it would seem necessary to administer the pollen extract of the specific offending plant. This method will be available soon, as at least one commercial pharmaceutical house is already making extracts of the pollens responsible for hay-fever in this section of the country, and we are informed that these will be available for making skin tests and desensitization in the near future.

## CONCLUSIONS

1. In distinction to the Rocky Mountain region, the artemesias (wormwoods) have little if any importance in producing hay-fever in the Southwest.
2. Amaranths are an important factor, and their pollen is very active; in fact, it will probably be shown that amaranths here are the principal cause of fall hay-fever, taking the place of the ragweeds in the East and the artemesias in the Rocky Mountain region. Some seasons *Atriplex wrightii* will probably take the place of *Amaranthus palmeri*. *Franseria tenuifolia* is probably a less important cause of fall hay-fever.
3. *Capriola dactylon* (Bermuda grass), causing the spring, summer and fall types, will probably prove to be the common grass causing hay-fever at altitudes up to 4,500 feet, and *Poa pratensis* (June grass) above that altitude.
4. *Gaertneria deltoidea* (rabbit bush) and *Atriplex canescens* (shad scale) are probably the most important plants causing the spring type of hay-fever.
5. Trees are probably not an important factor in causing hay-fever; but when they do cause it, they cause a very early type, and the most important trees are, first, cottonwood and, second, ash.
6. The principle of group reactions is not applicable to the hay-fever situation in Arizona and the Southwest.
7. It is advisable therapeutically to administer the specific pollen or pollens responsible for hay-fever.

123 South Stone Avenue.

4. Scheppegrell, William: The Classification of Hay-Fever Pollens from a Biological Standpoint, Boston M. & S. J. 177: 42 (July 12) 1917.

5. Goodale, J. L.: Pollen Therapy in Hay-Fever, Boston M. & S. J. 177: 42 (July 8) 1915.

6. Selfridge, Grant: Endocrine Glands and Their Relation to Vaso-motor Disturbances of the Air Passages, Hay-Fever and Asthma, with the Past Year's Report, California State J. Med. 17: 106 (April) 1919; 17: 139 (May) 1919.

7. Walker, I. C.: Frequent Causes and Treatment of Seasonal Hay-Fever, Arch. Int. Med. 28: 71 (July) 1921.



# CALCULATING DIETS CONTAINING A MINIMUM AMOUNT OF CARBOHYDRATE

FOR THE TREATMENT OF ARTHRITIS

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The question of the influence of diet on the excretion of increased amounts of the acetone bodies, acetone, acetoacetic acid, and beta-hydroxybutyric acid in the urine, has been discussed for many years. It has been recognized for a long time, first, that fat, either fat fed or fat drawn from the reserve supplies of the body, furnishes the principal source of these compounds, and, secondly, that in general these compounds are not found except when the organism is burning decreased amounts of glucose. Such a failure to burn glucose may result from a deficiency of foodstuffs furnishing this compound in the diet, or from an inability of the organism to oxidize the food properly when supplied, as in diabetes. The acetone bodies found during starvation are formed largely from the body fat, and are present in increased amounts because of the absence of carbohydrate intake and the depletion of the glycogen stores of the body. Besides fats, which form the source of the larger part of the acetone bodies, protein—specifically leucine, tyrosine and phenylalanine, which form a part of the protein molecule—furnishes an additional source of these compounds.

In three papers recently published, Shaffer<sup>1</sup> has discussed the relationship which glucose and fat burned in the body must bear to each other to prevent the appearance of acetone in the urine, and has suggested a diet which will prevent the appearance of these compounds, and which will not furnish more glucose to the subject than is necessary for this purpose. In calculating this diet, he made allowance for the amount of glucose which can be derived from the glycerin residue of fat. Woodyatt<sup>2</sup> has published similar calculations, and has come to conclusions similar to those reached by Shaffer. Holmes<sup>3</sup> has published a paper in which the calculations of Woodyatt are discussed and illustrated by tables.

Pemberton<sup>4</sup> has stated that diets low in carbohydrate are of value in the treatment of arthritis; by using diets similar to those suggested by Shaffer and Woodyatt, it has been found possible in this clinic to furnish very small amounts of this foodstuff, with a very slight disturbance of the general metabolism. Preliminary reports of the effects observed have been published by Wright and Hubbard<sup>5</sup> and by Hubbard.<sup>6</sup> Further

studies were reported by Hubbard, Wright and Nicholson at the meeting of the American Society of Biological Chemists, in December, 1921. In the present communication there is presented a method for calculating the diets used which has been found convenient.

For the purpose of calculating such diets, it is necessary that some idea of the probable metabolism of the patient should be formed. If this is not done, and a diet is fed which contains less food than the patient actually needs, material will be drawn from the tissues to furnish the balance, and this material is largely fat. If the diet received by the patient is low in carbohydrate, the fat so utilized may lead to the production of acetone bodies when they would not be formed otherwise. In the cases treated here, the basal metabolism was determined by the Benedict calorimeter<sup>7</sup> (estimation of the basal metabolism of the subject

from the height and weight tables of Du Bois<sup>8</sup> could be used for the purpose) and the probable metabolism of the subject was estimated from the data obtained. The number of calories furnished above the basal requirement varied with the activity of the patient. The weight of a patient who was practically bedridden was maintained unchanged for more than a month when a diet which furnished 20 per cent. more calories than the basal requirement was fed, but it was necessary to feed as much as 50 per cent. more than the requirement to maintain the body weight of patients who were not bedridden, but whose activity was markedly limited by their condition.

After estimating the calories burned by the patient, diets containing the smallest amount of carbohydrate which would prevent the appearance of acetone in the urine were fed to him. Ten per cent. of the total calories so estimated were fed as protein, 20 per cent. as carbohydrate, and the balance as fat, or, for each hundred calories fed, 2.5 gm. of protein, 3.75 gm. of carbohydrate, and 8.35 gm. of fat were provided. The amount of protein was kept lower than that generally fed to reduce as much as possible the increase in metabolism

which that foodstuff produces. In spite of the low intake of protein, nitrogen equilibrium was maintained by the diet.

Since both protein and carbohydrate furnish glucose to the organism, it is evident that a change in either of these constituents of the diet should be accompanied by a change in the other, if the total amount of glucose furnished is to be kept as low as possible. The full line on the accompanying chart shows the various combinations of protein and carbohydrate, expressed as grams per hundred calories, which will furnish the minimum of carbohydrate needed. It should be stated that diets containing less than 2 gm. of protein for each hundred calories are probably not practical, as they cannot be easily fed in a way that will maintain nitrogen equilibrium, while diets containing relatively large amounts of protein—more than 6.5 gm. for each hun-

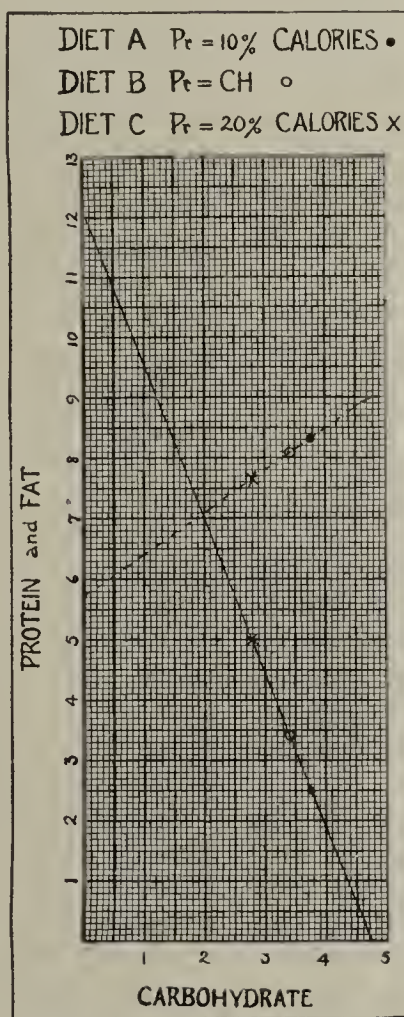


Chart for calculation of diets.

1. Shaffer, P. A.: *J. Biol. Chem.* **47**: 433, 449 (July) 1921; **49**: 143 (Nov.) 1921.

2. Woodyatt, R. T.: *Objects and Method of Diet Adjustment in Diabetes*, *Arch. Int. Med.* **28**: 125 (Aug.) 1921.

3. Holmes, W. H.: *Simplification of Woodyatt Method for Calculating the Optimal Diabetic Diet*, *J. A. M. A.* **78**: 22 (Jan. 7) 1922.

4. Pemberton, R.: *Am. J. M. Sc.* **63**: 678 (May) 1917.

5. Wright, F. R., and Hubbard, R. S.: *New York State J. M.* **21**: 403, 1921.

6. Hubbard, R. S.: *J. Biol. Chem.* **49**: 357 (Dec.) 1921.

7. Benedict, F. G.: *Boston M. & S. J.* **178**: 667 (May) 1918.

8. Lusk, Graham: *The Elements of the Science of Nutrition*, Ed. 3, Philadelphia, 1917, pp. 126-129.



dred calories—should be avoided because of their increase on the metabolism which this food causes. The amounts of protein discussed by Holmes—from 1 to 2.5 gm. per kilogram of body weight—fall into this range of values. When the amount of protein to be fed has been determined, the amount of carbohydrate which must be fed for every hundred calories, if a minimum intake of glucose is to be fed, can be read directly from the chart. Find the point on the solid line at which the horizontal line corresponding to the number of grams of protein for each hundred calories crosses it, and drop a perpendicular to the bottom of the chart; the reading at this point represents the corresponding amount of carbohydrate expressed in grams. If it is wished to feed enough fat to maintain the body weight of the patient, the amount can be found by noting the point at which this vertical line crosses the dotted line in the chart, and reading the height of this point above the base line.

Three different diets, expressed as grams per hundred calories, are shown by points on the chart, and in figures in the table, to illustrate the method. In Diet A, protein forms 10 per cent. of the total calories; in Diet B the amounts of protein and carbohydrate are equal, and in Diet C protein forms 20 per cent. of the total calories.

GRAMS PER HUNDRED CALORIES IN THREE DIETS

Diet	Protein Gm.	Carbohydrate Gm.	Fat Gm.
A .....	2.5	3.75	8.35
B .....	3.4	3.4	8.10
C .....	5.0	2.8	7.70

The results are expressed in terms of grams of the foodstuffs for each hundred calories; if they are multiplied by the number of calories which the patient needs divided by 100, the result will give the border line diet for that patient. Such diets, when fed in actual cases, cause an excretion in the urine of not more than 0.2 gm. of acetone from all the acetone bodies.

The chart has a further value in relation to the treatment of diabetes. The points on the solid line represent different combinations of carbohydrate and protein fed for each hundred calories burned by the patient which will prevent the formation of acetone bodies, if the amounts so fed do not cause an excretion of glucose; and the corresponding points on the dotted line represent the amount of fat which must be fed simultaneously to maintain the weight of the patient. The effect of varying amounts of the different foodstuffs on the tolerance of diabetic patients for glucose, and, apparently, for fat also, makes the figures given in the chart represent a goal to be approached in the treatment of that disease rather than a guide to the foods to be furnished to the patient at any given time.

**Serum Sickness from Local Application of Horse Serum on an Extensive Burn.**—G. Blechmann and de Frenelle publish in *Hôpital* 9:1043, 1921, what they believe to be the first instance of serum sickness from local application of horse serum. The woman of 30 had never had a previous injection of animal serum but had suffered from febrile polyarthritis several years before. The burn involved the left shoulder and neck. The amount of serum used daily was 40 c.c. After the tenth application the patient complained of pains in the joints of the left arm and in various muscle groups. By the thirteenth application, generalized urticaria appeared, becoming intermittent, with edema, punctiform erythema and joint pains even to the small joints of the foot, but no albumin in the urine.

## A CASE OF CHOREA AND ERYTHREMIA

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The primary form of polycythemia with chronic cyanosis, known as erythremia, is a rare disease which was first observed by Rendu and Vidal in 1891, and brought to the attention of physicians by Vaquez<sup>1</sup> in 1892. Since that time it has been called Vaquez' disease, Osler's disease and splenomegalic polycythemia. The rarity of the disease is emphasized by the work of Lucas,<sup>2</sup> who in 1912 compiled from the literature 179 cases of so-called polycythemia, of which he considered 149 as unquestionable cases of this disease.

The disease is of unknown origin, occurs most frequently between the ages of 40 and 60, affects males more frequently than females, and is characterized by a marked, persistent, absolute increase of red blood cells, and increase in viscosity and in total volume of the blood. Clinically it is characterized by cyanosis (usually most marked in the face with florid congested appearance), enlargement of the spleen, and changes in the eyegrounds. In the cases compiled by Lucas, there were noted particularly headache (31 per cent.); tinnitus (5 per cent.); lassitude, weakness and dyspnea (19.5 per cent.); asphyxiation attacks, palpitation and vertigo (34.5 per cent.); fulness in the head; pain in the chest and hypochondrium; cramps in the legs, and neuralgic pains in the toes and fingers.

Attention has been called on several occasions to the prominence of nervous symptoms occurring in this disease. Lucas enumerates apprehension, nervousness, excitability, irritability, hypochondriasis, disturbed mentality, insanity, delirium, insomnia, muscular atrophy, numbness, epileptiform attacks, muscular twitchings, shivering, tremor, loss of consciousness, aphasia, paralysis and choreiform movements.

Christian<sup>3</sup> particularly called attention to the frequency of nervous symptoms "because failure to keep them in mind has led to diagnostic mistakes." The symptoms which he mentioned were vertigo, fulness in the head, headache, pains, prickling sensations in the extremities, tinnitus, loss of consciousness, and blurring of vision. He reported ten cases, with nervous symptoms in eight. The most frequent symptoms were headache and dizziness, disturbance of vision (fatigue, blurring, scotomas, scintillating scotoma, transient blindness and diplopia), paresis and paralysis.

Marsh<sup>4</sup> reported fifteen cases, in eight of which there were symptoms referable to the nervous symptoms: headache, dizziness, auditory disturbances, nervousness, insomnia, disturbances of vision, loss of energy, numbness of extremities, loss of memory and paralysis.

Although the nervous system may be concerned in some way with the production of the various symptoms enumerated, in some instances it may not be primarily related to them. Some of the symptoms probably are accidental, as in a case of *idée fixe* (Cassirer and Bamburger<sup>5</sup>), probably insanity and hypochondriasis. Some of the symptoms are due to functional disturbance, as cerebral hyperemia: perhaps the headache,

1. Vaquez: *Compt. rend. Soc. de biol.*, 1892, series 9, p. 384.
2. Lucas, W. S.: *Erythremia, or Polycythemia with Chronic Cyanosis and Splenomegaly*, *Arch. Int. Med.* 10: 597 (Dec.) 1912.
3. Christian, H. A.: *Am. J. M. Sc.* 154: 547 (Oct.) 1917.
4. Marsh, H. E.: *Med. Clinics N. America* 3: 741 (Nov.) 1919.
5. Cassirer and Bamburger, quoted by Bordachzi (Footnote 7).



fulness in the head, dizziness, apprehension, nervousness, irritability, insomnia, etc. (A physician suffering from this disease described his feeling to me as "of being on constant tension, as he imagined a patient with a toxic goiter would feel.")

Some of the symptoms may be due to circulatory disturbance in the extremities, as prickling sensations and numbness. The visual symptoms (fatigue, blurring, scotomas, transient blindness, etc.) may be due either to affection of the optic nerve, the eyegrounds very frequently showing changes, at times a marked optic neuritis, or to organic change in the brain, as in the case of Hutchinson and Miller,<sup>6</sup> with loss of vision in which thrombotic softening was found in the occipital lobe. The symptoms referable to the ear, dizziness, Ménière's syndrome (three cases of Stern's quoted by Bordachzi), and tinnitus may well be due to labyrinthic disturbances.

Certain symptoms, however, seem to be based on organic changes in the brain. There are loss of consciousness, epileptiform attacks, muscular twitching, aphasia and paralysis.

Hemorrhages occur frequently in erythremia (in 23 per cent. of the cases, according to Lucas, who found 3 per cent. in the brain). Cerebral hemorrhage, therefore, may explain many of the cases of apoplectiform paralysis. Bordachzi especially mentions the cases of Cantley, Senator and Westhoeffler.

The increased viscosity of the blood predisposes to thrombosis; and, in the case of Hutchinson and Miller, there was thrombotic softening in the left lenticular nucleus and the right optic thalamus. Especially interesting is the case of Löwe and Popper (quoted by Bordachzi), in which there was a thrombosis of the carotid artery and cerebral arteries with ensuing encephalomalacia.

A case of polycythemia with chorea was described by Bordachzi<sup>7</sup> in 1909:

A woman, aged 50, three months before admission to the hospital developed sudden twittings, beginning in the right hand and spreading rapidly to the whole body. At the time of admission, she showed the picture of a severe chorea. She was very excitable, throwing herself forward and backward, bending and stretching the fingers, and to a smaller degree the hands and arms. Less frequently she moved the lower extremities at the knee and hip joints. She continuously grimaced. At times the movements became more vehement when she tossed around; she protruded the tongue, and the choreiform movements involved the muscles of the head and neck. The speech was slow, and, because of the continuous masticatory and tongue movements, hardly comprehensible. She was able to walk only with support and with great difficulty. Often the movements were so violent that she was unable to feed herself. About five months after the development of the chorea, the movements became less marked; and, seven months after the onset, she was able to leave the bed, shortly afterward being discharged as cured of the chorea.

On admission, there was found 10,900,000 erythrocytes, 7,000 leukocytes, and a hemoglobin of 135. On the day of discharge, the erythrocytes numbered 9,300,000, the leukocytes 16,000, and the hemoglobin 115.

It is especially interesting that, during the patient's sojourn in the hospital, she developed a hematoma of the rectus abdominalis, and numerous cutaneous hemorrhages.

There was no history of endocarditis or rheumatism, and Huntington's chorea could be ruled out. Bordachzi

thought that the chorea was the result of cerebral hemorrhage or thrombosis. He stated that only one observation would speak against such a hypothesis; namely, that whereas cerebral hemorrhage and thrombosis are common in erythremia, chorea had not been described as a symptom of that disease.

Particularly illuminating, both as to the possibility of chorea resulting from the effects of an erythremia and as indicative of the pathogenesis of hyperkinesis, is the case of Hutchinson and Miller in which twitching in the muscles of the face was observed, and the left lenticular nucleus and the right optic thalamus were found to be disintegrated. The inclusion of Huntington's chorea with other diseases, comprising the group of dystonia lenticularis, points to the possibility of the occurrence of chorea as the result of some lesion in the basal ganglions. What the nature of such a lesion may be will remain conjectural until histologic study of such a case is made.

#### REPORT OF CASE

The following case of chorea in erythremia is reported because of its rarity, to indicate further the possible causal relation of erythremia to chorea:

*History.*—F. W., a woman, aged 38, married, of Jewish extraction, was admitted to the Cook County Hospital, July 9, 1921, complaining of defective speech, involuntary movements of the extremities, and dyspnea. She had been taken ill six months before with dizziness, headache, vomiting, cyanosis and dyspnea. Usually the headache, dizziness and dyspnea occurred in attacks, more frequently occurring when the patient was recumbent. The attacks would begin suddenly, and would as suddenly and spontaneously disappear. They would last from half an hour to several hours. The headache consisted of a throbbing pain, the pain being accentuated at each heart beat. It was located in the frontal and occipital regions. It was worse on movement of the head. The dizziness was not a true vertigo, and consisted of blurring of vision, with the appearance of floating specks before the eyes and a feeling of impending loss of consciousness. Dyspnea usually occurred during the attack, and at this time the patient would note a marked cyanosis of the face. Vomiting, of sudden onset, not related to eating, nor associated with the attacks of dyspnea, occurred at irregular intervals. It was not projectile in type.

She consulted a physician, and was treated with radiotherapy and rapidly improved. For the last two months she had had no dizziness, vomiting or headache. Three weeks prior to admission, she noticed a defect in speech which rapidly became worse, to the extent that often her speech was unintelligible. At the same time she developed involuntary jerking of her upper and lower extremities, grimacing, and similar movements of the jaws and tongue. These movements were uncontrollable, and produced marked interference with function, becoming so marked that she could not walk alone. They ceased during sleep and were increased on excitement. During the last week she had had marked and constant dyspnea, increasing on the slightest exertion.

Of past illnesses, she had typhoid fever thirteen years before, and measles, diphtheria, scarlet fever, smallpox, whooping cough and mumps as a child. There was no history of rheumatism, endocarditis, tonsillitis or a former attack of chorea. She had eight children, all living and well. The menstrual history was negative.

*Examination.*—The patient was short and stout. Her skin was cyanotic; there was a bluish-red tinge particularly involving the face and neck, where the color was more red than blue. The color of the skin over the chest, abdomen and extremities was not greatly changed from normal. The finger tips showed slight cyanosis, but no clubbing. The face was turgid, the lips full, the eyelids heavy. The conjunctiva was markedly injected. The mucosa of the vagina and rectum appeared normal, whereas the lips and mucosa of the mouth were cyanotic. No adenopathy was present.

6. Hutchinson and Miller: *Lancet* 1:939 (March 17) 1906.  
7. Bordachzi: *Prag. med. Wchnschr.* 34:253, 1909.



The heart and lungs seemed normal, and roentgenograms of the chest disclosed no pathologic condition. The abdominal wall was flabby, and there was some diastasis of the recti. The liver was not palpable. The spleen was definitely enlarged, firm and not tender; the splenic notch was readily felt. The systolic blood pressure was 140, the diastolic 90. The blood showed 8,100,000 erythrocytes; 8,500 leukocytes, and a hemoglobin of 115. There was rather marked anisocytosis. The urine was negative. There was no rise in temperature. Neurologic examination showed the deep reflexes to be variable, but equal and within normal limits. The superficial reflexes were normal. The pupils were equal, regular, and reacted promptly to light and accommodation. No bladder or rectal disturbance was present. Ophthalmoscopic examination revealed only engorged vessels. No extra-ocular muscle disturbance was found, and with the exception of the choreiform movements of the face, jaws and tongue, the cranial nerves were normal. Sensation was nowhere disturbed. There was no paralysis or muscular atrophy.

Incessant choreiform movements were observed affecting the head, trunk and extremities. The patient was unable to stand alone or walk. When lying in bed she was in continuous motion, twisting from side to side. The upper extremities and face were involved more than the trunk and legs. The upper extremities showed continuous, purposeless involuntary movements, more marked proximally, with rapid jerking of the muscles involved. There seemed to be two components to the movements, a rapid and a slow one. The rapid movement affected chiefly the flexors, but frequently the extensors as well; after a sudden jerk in a group of muscles there occurred a relaxation and a slower movement in the opposite direction. The movements were brusque, irregular, followed no anatomic plan, and were quite uncontrollable. They were inimitable, and increased markedly on excitement. She grimaced incessantly, and the movement of the jaws and tongue was so marked that eating was very difficult, and speech at times so impaired as to make it unintelligible. Frequently, contractions occurred in the abdominal muscles, unaccompanied by respiratory irregularity or expiratory grunts. The legs were in constant motion, but the range of movement was not so great as in the arms. Twisting and tilting of the pelvis often occurred, and extension of the lumbar spine, producing marked lordosis, frequently took place. She was unable to feed herself, and disarranged her bedding continuously.

*Treatment and Course.*—Several venesections were performed, with no appreciable change in her condition. July 20, the long bones of the body were exposed to the roentgen rays, and this treatment was continued at weekly intervals. July 30, the movements were not so marked, and the dysarthria was less. August 8, she was markedly improved; there were 7,800,000 red cells to the cubic millimeter. She was discharged, August 22, the choreiform movements having ceased with the exception of some in the tongue. The dysarthria was barely noticeable. The red blood cells numbered 6,400,000. The spleen remained distinctly palpable; cyanosis was distinct, but much less pronounced than at entrance.

#### COMMENT

It is notable in the case of Bordachzi that the choreiform movements disappeared, although the erythremia persisted. It is indicative of the supposition that the choreiform movements are not produced by any change in the blood but rather by a definite pathologic condition in the brain, such as hemorrhage or thrombosis. The same observation is true in the case here reported. Although there was a diminution in the number of red cells, the amelioration of the hyperkinesia was entirely out of proportion to the change in the blood, spleen or cyanosis. The indications were against a direct relation of the changes in blood content to the chorea.

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## INEFFICIENCY IN PUBLIC HEALTH ADMINISTRATION \*

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During the late war, efficiency was everywhere demanded. For a time, the term thrilled the nation. Later, through excessive use, it became a fulsome by-word. A few months of overaction was followed by exhaustion; when the war terminated, relaxation occurred and in the place of efficiency there followed a period of general inaction, which still continues in every field of human endeavor. Stress has been followed by rest, and efficiency has to a great extent been supplanted by inefficiency. This is true of public health activities to a greater or less degree almost everywhere; particularly is it true of some localities in which public health work of late has greatly declined with deplorable conditions in some instances resulting.

Mine is not a neutral mind, and, as the title indicates, it is in the nature of a criticism and, without doubt, will be productive of opposition; but it is intended to incite greater activity in public health work among health officials generally.

The causes of health work inefficiency are manifold. To enumerate these causes is not contemplated; only a brief mention of some of the principal ones will be attempted.

#### TWO CAUSES OF INEFFICIENCY

Ignorance and indifference on the part of the public regarding the value of efficient public health work are among the greatest hindrances to successful health administration. To overcome opposition and create active public interest in sanitation and preventive medicine should be the aim of all health workers. This branch of public health activity should be pushed until realization is attained and a most potent obstacle to public health work removed. How this work can best be accomplished should be left to the determination of the public health authorities, time and experience being required for its development and fulfilment.

In rural districts, where public health work is usually undervalued, a cause of inefficiency in health administration is found in the local boards of health. Obviously, if ignorance and indifference exist in the public mind, these will influence and hinder the activities of boards of health. What can be expected of a local board of health, the personnel of which is made up, principally, of members of the town boards? Deficient in sanitary knowledge and unwilling to acknowledge its benefits, many of its members become obstructionists to public health measures and hinder the activities of the health officer to an extent that may practically nullify his work.

If rural boards of health are to continue to exist, should they not do so as independent bodies and be clothed with ample powers to promulgate, regulate and enforce all needful sanitary measures? And should they not be compelled to meet at regular stated intervals of from four to six times yearly for the transaction of public health business, and receive for their services a per diem fee of not less than \$5? The stimulus of a fee would induce attendance, and by this means the members would be speeded to action and better health work effected. In fact, if the members

\* Read before the annual meeting of the Central New York Public Health Association, Syracuse, N. Y., June 7, 1921.



of every health board were paid a per diem fee for attendance on board meetings, health work, it is believed, would everywhere be greatly advanced and one of the chief causes of inefficiency in public health administration removed.

In every municipality, efficient health administration depends largely on the efforts of the health officer. If he is negligent of duty, indifferent to the responsibilities of his office, and wanting in aggressiveness and administrative ability health administration will fail under him in direct ratio to his deficiencies.

Many city boards of health are notoriously inefficient, and it is the belief of some sanitarians that all boards of health could be dispensed with without detriment to the public, and their places filled by single health commissioners, who should have full authority in matters affecting the public health within their municipalities.

#### SYSTEM FOR CITIES OF THE THIRD CLASS

A uniform, single headed health system for all third class cities should be enacted by the legislature, and full time health commissioners, with ample authority, should be placed in control of all health work. Sufficient funds for such work should be provided. A per capita tax of not less than 50 cents nor more than 75 cents, it is believed, would cover the ordinary health expenditures in cities of this class.

The health commissioner of a third class city should have an experience of not less than five years in the general practice of medicine, and have completed a course of public health instruction in hygiene and sanitation and complied with all of its requirements such as are now prescribed by the public health council for health officers. He should give full time to the discharge of his duties, and receive a salary of not less than \$3,000 per annum with all necessary expenses paid. He should be empowered to appoint necessary assistants for the conduct of health work, and fix their salaries within the limit of the appropriations made therefor. His term of office and that of his appointees should be for not less than five years. Power of removal of appointees under the commissioner should be vested in him.

The health commissioner should be subject only to the authority of the state commissioner of health in matters affecting the public health, and to the local authorities, solely, as to money expenditures. He should have supervision and control over all health work, both private and public. All charity organizations undertaking any kind of welfare work involving the public health should not be permitted to engage in such work without his permission, as duplication in health work leads to inefficiency.

A public health system somewhat along the lines indicated would, it is believed, largely remove the present inefficiency in health administration which exists in the third class cities of the state.

#### SANITARY SUPERVISORS

As a further means of promoting health efficiency, sanitary supervisors have been appointed to supervise and assist in the proper enforcement of health administration within their sanitary districts. Particularly, it is the duty of the sanitary supervisor on the appearance of any communicable disease within his district to investigate the cause of the spread of the disease and, when necessary, institute measures for its control. He is also charged with the duty of studying the causes of excessive mortality from any disease occurring

within his jurisdiction and to aid in the enforcement of the public health law and the provisions of the sanitary code.

If he is indifferent to the responsibilities imposed upon him and is deficient in administrative ability, health efficiency in his district will not be maintained. On the contrary, if he is properly qualified for his duties and is energetic in their discharge, health efficiency under him will attain a high standard, and his efforts will gain the approval and support of health officials and the general public.

#### CONTROL OF CONTAGIOUS DISEASES

In a locality not far distant, outside this sanitary district, where health administration work has seriously declined, conditions have existed, and others still continue, which disclose a state of gross inefficiency in the general conduct of health affairs which demand attention and for which correction should be undertaken. To illustrate the inefficiency of health control in this locality, two conspicuous instances are cited:

Within a county approximating 70,000 population are two cities. The larger has a population of nearly 24,000, and the smaller slightly more than 13,000. For this county in 1920, thirty-five deaths from communicable diseases are recorded in the published vital statistics reports for that year. Of these deaths, twenty-two were from measles, six from whooping cough, and seven from diphtheria. In the larger city, the deaths from measles numbered seven, from whooping cough one, and from diphtheria two. In the smaller city, the deaths from measles numbered eight, from whooping cough two, and from diphtheria three.

The striking feature of these deaths is the excessive mortality from measles, particularly in the smaller city, where they numbered eight. In this city, in early winter, measles first made its appearance and slowly spread over the city and extended into the adjoining towns. In this case, had the health authorities exercised proper vigilance, an epidemic could easily have been prevented and most, if not all, of the lives that were needlessly sacrificed to this disease would have been spared. Practically nothing was done to control the progress of the disease by the health authorities. Apparently, they were without knowledge of the gravity of the situation, and that human lives were being lost by their inaction was unknown to them. In fact, it is doubtful whether any one in this city realized the seriousness of the epidemic, or had previously known that eight deaths from measles occurred in this municipality within the space of a few weeks. Apparently, too, the sanitary supervisor, within whose district this excessive mortality from measles occurred, had no knowledge of the virulent character of the epidemic, as he did not, so far as can be ascertained, do anything to prevent the spread of the disease. He must have known that an epidemic of measles of large proportions was prevailing within his district, as the cases in the larger city, which is his home, numbered nearly 700; and only a few miles away, in the smaller city, they numbered 321 cases. It is evident that this large number of cases of measles did not escape his attention, and had he exercised the vigilance expected of a sanitary supervisor, a number of lives might have been saved.

There appears to be only one excuse for the negligence that cost so many lives. This is based on the widespread belief that measles cannot be effectively controlled and that nearly every person must, sooner or later, have the disease. This belief, too, is largely



shared by health authorities. This is erroneous and affords no legitimate defense for the loss of lives which the experience of energetic health officials has demonstrated may be saved by the exercise of an efficient control when first cases appear.

An epidemic of measles, or of any other disease, occurring in rural districts and the smaller cities may be controlled by the exercise of vigilance on the part of the health authorities. A few years ago, in a third class city, outside of which measles extensively prevailed, a health officer by vigilant work prevented an epidemic from occurring. Seven different times, within a year, the disease was brought into the city. Only twenty-two cases developed, more than half of which were among schoolchildren, and these came from the first case of the disease. In the six subsequent appearances of the disease only eight cases arose, all of which were confined to their original sources of six families, at widely separated points within the city. This is an excellent example of the control that can be exercised against the spread of a contagious disease by vigilant work on the part of health officers.

If measles produced the fear that cases of hydrophobia and smallpox do, they would rarely be seen, and epidemics from them would seldom or never occur.

Fear has always been a potent factor in the control of contagious diseases, and ever will be until the public has learned that these may be brought under effective control through the enforcement of existing sanitary regulations. Sooner or later, it will realize that this is possible, as well as desirable from an economic standpoint and, eventually, better control will prevail, and the contagious diseases which now flourish will largely disappear. This is not a dream, but something to be realized, which all health workers should seek to hasten.

Unquestionably, considerable time will be required to attain this desideratum. Energetic action by every one interested in public health work would, it is believed, decrease the communicable diseases to the extent of 50 per cent. within the space of a single year. This, however, cannot be accomplished under the present lax control.

Considerable inefficiency in health control work is due to the failure of physicians to live up to the rules and regulations of the sanitary code. Most physicians occasionally violate the regulations, and quite a number of them are constant violators, and it is these who harass the health officer in the performance of his duties and render his work inefficient.

Failure to report contagious diseases promptly is a potent factor in causing epidemics for which physicians are largely responsible. Enforcement of the penalties for these violations would greatly decrease their number. Health officers should try to prevent these offenses by promptly reporting the offenders to the state commissioner of health. If this were more often done, there would be fewer offenses to report and less to condone.

Failure to report communicable diseases, when no physician is in attendance, is a prolific cause in the spread of these diseases which, many times, end in serious epidemics. Parents, teachers, nurses and other persons whose duty it is to report cases of communicable diseases to the health officer should be held responsible for their neglect to comply with the regulations of the sanitary code. Too often, sanitary officers are guilty of condoning or overlooking these omissions of duty.

#### LAX ADMINISTRATION

Returning to the subject of health conditions in the smaller city previously mentioned:

Five years ago, in accordance with the rules and regulations of the sanitary code, there was established a system of milk inspection and grading with bimonthly bacteriologic examinations. This was continued with good results for more than two years, when, through the neglect and indifference of the health authorities, it was discontinued. No bacterial counts have been made during the last two years, and other milk inspection work has been greatly neglected, with the result that there has been a marked deterioration in the quality of the city milk supply.

Other equally valid criticisms of the conduct of the health affairs of this city could be made. Sufficient, however, has been said of what, without doubt, constitutes an inexcusable inefficiency in the administration of its health affairs.

It is certainly unpleasant to live in a locality in which health administration is so lax that, at any time, lives may be imperiled and lost through the spread of preventable diseases which efficient health control can prevent.

Unquestionably, there are other cities in which better health conditions prevail, and it is undoubtedly true that there are cities, still, wherein the health conditions are as bad as, and possibly worse than, in the city mentioned. The things which make these wide differences in health administration are many and can be determined only by a study of existing local conditions and the varying character of the health problems presented.

Insufficient funds for the proper conduct of health affairs may be the cause of inefficiency in one municipality, while in another it may arise from deficient help. In still another, both causes may be important factors. These may seriously hinder health administration, but the greatest of all hindrances is the lack of sufficient interest in their work by health officials.

In a sense, many health officers are merely accidents of our political system or of their environment, appointed usually without regard for qualifications. Too often, they manifest no real interest in health work, and the result is inefficiency. Obviously, the best remedy for inefficient health administration is a real interest in health work on the part of health officials. If they possess this, they will be earnest and energetic in their work, and success will attend their efforts.

#### CONCLUSION

Let every health worker keep in mind the words of Gladstone: "The health of the people is the foundation on which repose the power and happiness of any country, and the care of public health should be the first concern of every statesman." With these words ever in mind, inefficiency in health administration will be lessened and an era of better health work will prevail with ever increasing health improvement.

216 Oneida Street.

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**Physician Should Witness Operation on His Patient.**—In more senses than one the operating theater may be made a link between the ward and the postmortem room. When a physician fails to witness the operations which are performed on his patients, he not only neglects a fruitful source of information for his own future guidance, but he also deprives the surgeon of the very great advantages which accrue from consultation on questions which may arise during the course of an operation.—Percy Sargent, *Brain* 44:313, 1921.



## Clinical Notes, Suggestions, and New Instruments

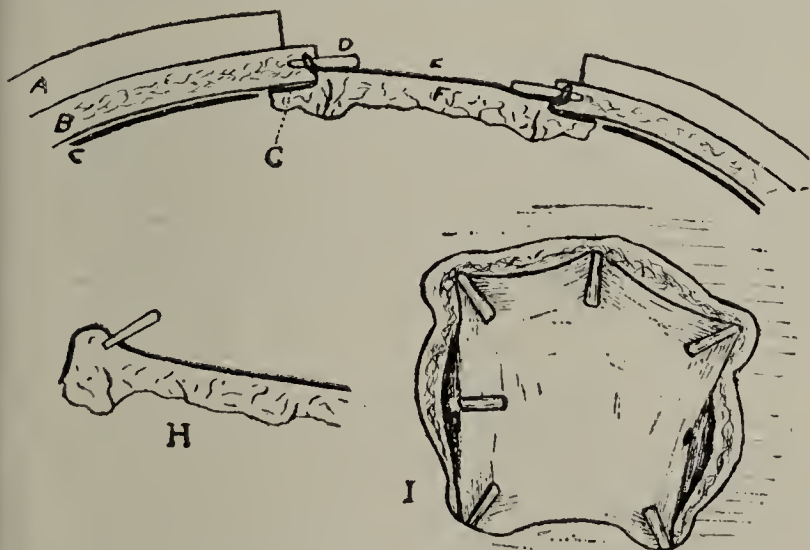
### A METHOD OF RETAINING FREE FAT AND FASCIA TRANSPLANTS IN CLOSING DEFECTS IN THE DURA

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Assistant Surgeon, St. Luke's Hospital, Chicago

In certain cases of defect of the skull, the pia has become adherent to the bone at the margin of the defect and to the overlying skin. After the separation of the pia from the overlying structures, before closure can be attempted, it is necessary to fill up the defect in the dura. For this purpose a fat and fascia transplant is used, the fascia lata ordinarily being utilized for this purpose.

The present methods in use for holding the transplant in place between the brain and the skin and skull are not satisfactory. The slight bulging of the brain which accompanies the defect causes the transplant to slip out from between the brain and the skull, and after the operation the adhesions will again occur. If the transplant can be sewed to the dura, this objectional feature is eliminated.

It frequently happens, however, that the dura has retracted to some distance from the bone margins or has become adherent to the bone so that no sutures can be put in it without great danger of injury to the brain substance. Sutures



Method of retaining free fat and fascia transplants in closing defects in the dura: A, skin; B, bone; C, dura; D, peg; E, fascia; F, fat; G, free margin of fascia; H, method of inserting peg in fascia; I, five pegs in place, one ready to be driven into diploe, and puncture made for seventh.

to the periosteum are not satisfactory, as the graft then fills up the bony defect but does not protect the brain from the overlying bone.

In the method here described, the edges of the transplant extend under the bone edges and keep the brain and bone from touching. A piece of fascia lata with attached fat 1 inch (2.5 cm.) larger in each diameter than the defect to be filled is removed and trimmed down to the shape of the defect. Five or six small punctures are made in the fascia, equidistant and about one-half inch (1.25 cm.) from the margin. The transverse distance between the punctures is just less than the diameter of the defect to be filled. A previously prepared peg of beef bone or of the patient's tibia, three-quarters inch (1.9 cm.) long and one-eighth inch (3 mm.) in diameter, is inserted in each of the holes as shown at H in the illustration, and carrying the overlying fascia with it, driven into the diploe. After the graft is firmly in place, further pegs may be driven in to bring the fascia and bone in to closer approximation.

The pegs serve two purposes: (1) to attach the fascia to the bone, and (2) to prevent the free edge of the fascia from becoming doubled back under the attached portion. The fascia being doubled upon itself where the pegs are driven

into the bone gives an increased amount and density at this point. This portion is held down by the projecting ends of the pegs and kept from bulging up into the wound. The free margin of the graft will remain in the place of least resistance, which is under the margin of the bone.

480 Maple Avenue.

### AN UNUSUAL CASE OF ECTOPIC PREGNANCY

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It is of very little interest to report isolated cases, especially of a condition so frequently encountered in gynecologic practice as ectopic gestation; but the case to be described presented such unusual features that it was thought of sufficient importance to warrant a full description.

L. W., aged 37, admitted to the Lying-In Hospital, Feb. 24, 1921, had last menstruated, Dec. 15, 1920, and had felt well until the afternoon of the day of admission, when she had had violent abdominal cramps and had fainted twice. This story, with the patient's condition, which was evidently one of shock, rendered the diagnosis of ruptured ectopic pregnancy probable. The usual measures to combat shock were resorted to, and, about one and one-half hours after admission, a laparotomy was performed and the right tube and ovary, the former the site of a ruptured tubal pregnancy, were removed. The abdomen contained a considerable amount of fluid and clotted blood. A citrate transfusion of 900 c.c. was performed by Dr. J. R. Losee, while the patient was still on the table; her condition rapidly improved, and within a few hours she was fairly comfortable.

On the second day afterward she developed a consolidation of the right lower lobe. Two days later, the fourth day after operation, she developed a right parotitis; the pneumonia began to clear up, but the parotid increased markedly in size. Local applications were made to the right parotid region, and though there was considerable redness and edema of the overlying tissues, and the swelling so great at first that the patient could not open her mouth more than half an inch (12 mm.), the parotitis after seven or eight days began to subside and ultimately cleared up entirely.

On the second day after admission a detailed history was obtained from the patient, and then reference to the hospital records disclosed the features that make the report of this case interesting.

She had been admitted, March 25, 1917, with the history and symptoms of an ectopic pregnancy, and had been operated on by Dr. J. W. Markoe, March 27, when the left tube and ovary were removed for a ruptured ectopic gestation, about the size of a small orange. The abdomen was full of blood clots. In two days she developed signs of pneumonia, and on April 4, seven days after operation, she developed a marked left parotitis. This was incised, April 6, and, though no pus was obtained, a culture from the serum showed *Staphylococcus aureus*. By April 9 the swelling had almost entirely disappeared. She was discharged well, April 13.

An additional item of interest in connection with this case is that the patient was readmitted to the hospital one and one-half years later, Nov. 10, 1918, in active labor with non-engagement of the head. At that time, in view of the previous operation and the lack of progress, an abdominal cesarean section was performed by Dr. R. McPherson. On this occasion she went through a normal puerperium without any complications.

#### SUMMARY

This patient presents the following interesting features:

1. Laparotomy for left ruptured ectopic pregnancy in March, 1917, with pneumonia and left parotitis as complications.
2. Abdominal cesarean section in November, 1918.
3. Laparotomy for right ruptured ectopic pregnancy in February, 1921, with pneumonia and right parotitis as complications.

20 West Fiftieth Street.



# THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 11, 1922

## DELETERIOUS EFFECTS OF ACACIA FOR TRANSFUSION

The use of acacia for intravenous injections in the treatment of shock, hemorrhage and allied conditions has its supporters and opponents. Whereas the promoters had the field during the war, the opponents are now gradually coming into their own. The use of acacia, like some other therapeutic measures which suddenly appeared during the World War, was not based on that sober second thought which is especially valuable in determining the real value of any new therapeutic remedy or procedure. At least, however, it helped to serve one purpose, namely, the stimulation of research in shock. There is no longer any doubt as to the deleterious effects of the use of this substance.

Bayliss,<sup>1</sup> who introduced the intravenous use of acacia, originally showed that it can agglutinate cat corpuscles in vitro, although he regarded this as a temporary phenomenon and of no consequence in vivo. Acacia, however, like many other colloids, is a labile substance, and can change its properties and probably those of other colloids readily, so that, at another time, and depending on the conditions, it may agglutinate permanently and even cause injury. This was shown to be the case by the researches of Kruse<sup>2</sup> and of Hanzlik and Karsner.<sup>3</sup> These investigators demonstrated that acacia, in the concentrations in which it is used intravenously, agglutinates red blood corpuscles of man and other species. In addition, Hanzlik and Karsner demonstrated the presence of emboli and thrombi in the pulmonary vessels of guinea-pigs which showed anaphylactoid symptoms after intravenous injection of acacia. In their recent studies on blood fibrin in dogs, Foster and Whipple<sup>4</sup> of San Francisco show that intravenous injections of acacia interfere with the prompt return of fibrin to its normal value, the restoration after acacia being much slower than that after injection of Locke's solution. They show, further, that blood which is removed immediately after injection of acacia

does not clot, and normal coagulation is obtained only by the use of serum. At times there is delay in coagulation for many hours. Therefore, its use would hardly be valuable in certain kinds of hemorrhages. Finally, Olivecrona<sup>5</sup> of Stockholm reports the death of a woman from the intravenous injection of acacia, and warns against its indiscriminate use. These reports are in harmony with the unfavorable opinions of some surgeons based on their experiences with it during the war,<sup>6</sup> and also with the statement of Stewart<sup>7</sup> of Cleveland that the use of acacia is unphysiologic.

Moreover, as pointed out by Henderson and Haggard<sup>8</sup> in this issue of THE JOURNAL, acacia solution, although apparently distinctly beneficial immediately after injection, does not improve the chance of recovery of animals which have been subjected to the so-called "standard hemorrhage." Its only value is the replacement of plasma, and such results are scarcely better than no treatment at all, since the really significant element in hemorrhage seems to be the loss of red corpuscles. It is the decrease in the capacity of the blood to perform its functions, and not chiefly the fall of arterial pressure, that is the critical factor in hemorrhage.

An additional lesson to be drawn from the results of these investigations is that the intravenous method of administering drugs is always accompanied by considerable risk of injury to the patient. It is unjustified with new and untried remedies, and even with those which chemically and pharmacologically appear to be inert and inactive.

## RICKETS AND TETANY

The numerous recent contributions to the study of rickets indicate that a variety of factors may contribute to the pathogenesis of the disease. Out of the confusion of the earlier investigations on the experimental rickets of animals, in which characteristic osseous defects could be induced by a diversity of dietary deficiencies, clarity is beginning to ensue. Thus, it has been found that a serious deficiency in calcium or phosphorus or both in the food intake is a predisposing factor in rickets in both animals and human subjects. However, rachitic symptoms can be averted in many instances through exposure of the susceptible individuals to sunlight or ultraviolet rays; and cures can be effected when the signs of the disorder have already made their appearance.<sup>9</sup> An unidentified factor contained in cod liver oil can effect a similar cure or exert

1. Bayliss, W. M.: Intravenous Injection in Wound Shock, Brit. M. J. 2: 553 (May 18) 1918.

2. Kruse: Am. J. Physiol. 49: 137, 1919 (Proc.).

3. Hanzlik, P. J., and Karsner, H. T.: J. Pharmacol. & Exper. Therap. 14: 379, 425 (Jan.), 449, 479 (Feb.) 1920.

4. Foster and Whipple: Am. J. Physiol. 58: 393, 1922.

5. Olivecrona, H.: Acta chir. Scand. 45: 1, 1921.

6. Robertson, O. H.: Central Med. Dept. Lab. Div. Surg. Research, A. P. O. 721, France, Oct. 27, 1918.

7. Stewart, G. N.: Am. J. Physiol. 49: 233 (July) 1919.

8. Henderson, Yandell, and Haggard, H. W.: Hemorrhage as a Form of Asphyxia, J. A. M. A., this issue, p. 697.

9. Hess, A. F., and Unger, L. J.: Proc. Soc. Exper. Biol. & Med. 18: 298, 1920-1921; The Cure of Infantile Rickets by Sunlight, J. A. M. A. 77: 39 (July 2) 1921. Hess, A. F.; Unger, L. J., and Pappenheimer, A. M.: Experimental Rickets in Rats, III, The Prevention of Rickets in Rats by Exposure to Sunlight, J. Biol. Chem. 50: 77 (Jan.) 1922. Heliotherapy and Rickets, editorial, J. A. M. A. 78: 195 (Jan. 21) 1922.



a preventive influence. The current probability in respect to rickets has been summarized by expert investigators<sup>10</sup> in this field by the statement that when a rat, the favorite experimental animal in the study of this subject, is deprived of certain active light rays and an unidentified factor contained in cod liver oil, a pathologic condition corresponding in all fundamental respects to rickets in human beings can be produced through the diet in two ways: (1) by diminishing the phosphorus and supplying the calcium in optimal quantities or in excess, or (2) by reducing the calcium and maintaining the phosphorus at a concentration somewhere near the optimum. There is reason to believe that in the human being, similarly deprived of light and the unidentified factor, true rickets may arise through the maladjustment of the calcium and the phosphorus in the diet in the ways just mentioned.

The considerations outlined have recently led to the conviction that there may be more than one kind of rickets.<sup>10</sup> We are told that one is characterized by a normal or nearly normal blood calcium and a low blood phosphorus (low phosphorus rickets); the other by a normal or nearly normal blood phosphorus but a low calcium (low calcium rickets). It is well known that a low blood concentration of calcium is also characteristic of children suffering from manifest tetany.<sup>11</sup> An explanation, therefore, at length seems to be at hand for occasional but not invariable association of tetany with rickets. A recent writer<sup>10</sup> has pointed out that cases of rickets, even very severe rickets, exist in which tetany does not supervene, and, in all likelihood, never will. In other cases of rickets, tetany either in the manifest or in the latent form is present for weeks, and numerous observers have pointed out that it is with the less severe forms of rickets that tetany usually allies itself. If tetany is essentially an expression on the part of the nervous system of an insufficiency of the calcium ion, whereas rickets is the expression on the part of the skeleton of disturbed relations between the calcium and phosphate ions of body fluids, it is readily conceivable how the two disorders may be simultaneously manifested. Furthermore, the curative procedures should be made to vary with the indications. Experience has indeed shown, as Shipley, Park, McCollum and Simmonds have pointed out, that a cure in rickets accompanied by tetany is most easily accomplished through the administration of calcium and cod liver oil or by calcium and heliotherapy, whereas in rickets uncomplicated with tetany the cure is most readily accomplished by means of the administration of cod liver oil or heliotherapy with or without phosphate. The assumption that tetany is merely a sign of healing rickets<sup>12</sup> is no longer tenable.

With reference to the chemical nature of the curative factor in cod liver oil, some novel questions have been raised by the newer studies of rickets. Heretofore it has been identified, without specific evidence, with the "fat-soluble A" present alike in this oil and in butter fat, the vitamin concerned in growth and in the prevention of the ophthalmias that are liable to occur when the factor is missing in the diet.<sup>13</sup> But McCollum, Simmonds, Shipley and Park<sup>14</sup> have cast doubt on the identity of vitamin A and the antirachitic factor. Cod liver oil seems to be so much more effective than is butter fat in promoting the use of a low calcium supply by the osseous tissues that one may properly question whether there are not "two distinct organic factors operating in the nutrition of a mammal which is associated with certain fats." One of these is comparable in its action with sunlight; the other may not be. Heliotherapy, as well as chemotherapy, is entering on a new experimental era.

#### MEDICAL ENGLISH AS SHE IS WROTE

"Medical terminology," says Lubarsch, editor of *Virchow's Archiv*, "has never distinguished itself by its exactitude, clarity and precision." He then yields to the impulse that has assailed many another medical editor, and relieves his emotions by scolding the tribe of medical authors.<sup>15</sup> He particularly directs his lance at the practice of misusing the word cirrhosis, a sin shared by both Teutons and Anglo-Saxons and which is of itself a none too pleasant commentary on the prevalence of loose writing by medical men. The word cirrhosis is applied to every possible sort of condition associated with hardening; for example, cirrhosis of the kidney as a synonym for chronic forms of nephritis with fibrosis. Probably the reason for this misuse lies in the fact that the cirrhotic liver is fibrotic or sclerotic, and that the word cirrhosis sounds not unlike sclerosis. But cirrhosis is from the Greek word meaning yellow or tawny, carries no reference to sclerosis, and was applied to the diffuse hepatic fibrosis because often the liver in this condition is yellow, either from fat or from bile. The sclerotic kidney, however, is not usually yellow, and the "cirrhotic" lung is generally black with coal pigment. At the best, cirrhosis is a poor term even for the hepatic fibrosis, since often the cirrhotic liver is far from yellow, and its only justification is usage.

Then there is apoplexy, used to designate hemorrhages into almost any part of the body, despite the fact that its Greek ancestor referred only to the loss of consciousness and paralysis which result from hemorrhage into the brain; in origin, apoplexy does not mean

10. Shipley, P. G.; Park, E. A.; McCollum, E. V., and Simmonds, Nina: Is There More Than One Kind of Rickets? *Am. J. Dis. Child.* **23**: 91 (Feb.) 1922.

11. Kramer, B.; Tisdall, F. F., and Howland, John: Observations on Infantile Tetany, *Am. J. Dis. Child.* **22**: 431 (Nov.) 1921.

12. Hulschinsky, K.: Die Beeinflussung der Tetanie durch Ultraviolettlicht, *Ztschr. f. Kinderh.* **26**: 5, 1920.

13. Osborne, T. B., and Mendel, L. B.: Ophthalmia and Diet, *J. A. M. A.* **76**: 905 (April 2) 1921.

14. McCollum, E. V.; Simmonds, Nina; Shipley, P. G., and Park, E. A.: Studies on Experimental Rickets, XII, Is There a Substance Other Than Fat-Soluble A Associated with Certain Fats Which Plays an Important Role in Bone Development? *J. Biol. Chem.* **50**: 5 (Jan.) 1922.

15. Lubarsch, Otto: Einiges zur Kritik der medizinischen Nomenclatur, *Virchow's Arch. f. path. Anat.* **232**: 480, 1921.



hemorrhage, for the apoplectic condition may result equally well from embolism or thrombosis unassociated with hemorrhage. A difference between infectiousness and contagiousness seems not to exist in the minds of some writers, while others describe the inoculation of animals or patients with serum, as if inoculation and injection were synonyms. The distinction between tuberculous and tubercular is apparently too subtle for many, including writers of excellent repute, who seem to forget that if there exist such things as tubercular leprosy, tubercular syphilids, and normal anatomic tubercles of many sorts, then the words tubercle and tubercular cannot possibly be understood to mean specifically infections with *Bacillus tuberculosis*, even if some of the lesions produced by this germ are tubercular; many tuberculous lesions are not tubercular, and many tubercular lesions have nothing to do with tuberculosis.

Perhaps the worst of it is that we keep on adding errors and monstrosities to our medical nomenclature, so that sometimes it seems more like a jargon than a language. Take the word vaccine. The word is as badly misused as the principle. Its classical parent means cow, and "vaccine" was used, of course, because cow pox was the disease transmitted by Jenner in the prophylaxis of smallpox. Certainly the present use of the word vaccination for injection of every possible sort of pathogenic bacteria, to say nothing of pollens and food proteins, has no justification on an etymological basis, and its use for all these things unrelated to the cow is an etymological bull. But, like many another atrocity of the same sort, its careless usage has become so widespread as to fix it, presumably for all time. We are, however, a little encouraged to see that some careful writers have made a slight impression on the prevalent error of speaking of deviation of complement when fixation of complement is meant. Some of these errors we owe to the Germans, who are remarkably lax in their scientific terminology, but one particularly grievous sin we get from the German literature through no fault of the Germans, namely, the literal translation of the compound adjective without rearranging it into English. From this source we get such sentences as "the blood contains bacteria destroying antibodies" when, of course, the reverse is meant, for the bacteria are destroyed, not the antibodies. We read, likewise, "albumin containing urine" or "blood destroying poisons," phrases that shriek loudly for at least a missing hyphen if they cannot have a real English construction. Sometimes it is necessary to rewrite a dozen sentences in a single article just to get around this failure to arrange in English form the translation of the gloriously compounded German adjective, concerning which Mark Twain wrote so lucidly and with so much feeling. As for the habitual and unlimited misuse and abuse of the words "case" by medical men and "operate" by surgeons, we have on

other occasions expressed our views. The observant physician, however, is beginning to realize at least the fundamental rules governing their usage.

#### VIRCHOW AND MODERN PATHOLOGY

The year just closed marked the centenary of the birth of Rudolf Virchow, the founder of cellular pathology, with whose name the rise of modern medicine is inseparably connected.<sup>1</sup> Although the pre-eminent significance of the magnificent contributions to science so succinctly summarized in Virchow's aphorism *Omnis cellula e cellula* is highly appreciated in America, it may seem strange to many thoughtful persons that an anniversary so fraught with interest to medicine should have received so little public notice in scientific circles in this country. A partial explanation of the apparent apathy may be found in the remnants of nationalistic feeling inevitably engendered by the World War. It is a platitude that science knows no national boundaries; nevertheless, intense human passions and enthusiasms often tend for the time to obscure even the greatest of undeniable deserts elsewhere when motives of patriotism and loyalty have been aroused to express themselves. Such passing prejudices are characteristic of our social structure.

In the case of Virchow, however, there is little doubt that other factors have been responsible for the lack of expression of deserved enthusiasm on a memorable occasion. In the splendid volume of tributes to Virchow's genius edited by Lubarsch as a *Gedenkband* of the journal known everywhere as *Virchows Archiv*, which the great pathologist founded in 1847, James Ewing<sup>2</sup> of the Cornell University Medical College, New York, has ventured an interpretation of the influence of Virchow on medical science in America. He points out that at the most fruitful period of the German investigator's scientific activities, American students of medicine who traveled abroad were accustomed to wend their way to London, Edinburgh and Paris. The teachings of Virchow, however, found a ready acceptance in this country, not primarily by personal transmission through the intermediation of eminent pupils, as has happened, for example, in the dissemination of Ludwig's influence on the progress of physiologic research in the United States, but through the recognized publications of a great master. Indeed, Ewing ventures the belief that America possesses more copies of Virchow's writings than does any other country.

Furthermore, the rise of modern bacteriology under the leadership of Robert Koch somehow attracted a larger group of American students of the genesis of disease; their interest in micro-organisms as a domi-

1. Virchow Centenary, editorial, J. A. M. A. 77:1427 (Oct. 29) 1921; Celebration of Birthday of German Pathologist, *ibid.* 77:1903 (Dec. 10) 1921.

2. Ewing, James: Virchows Arch. f. path. Anat. 235:444 (Oct. 13) 1921.



nant factor in pathologic processes tended to overshadow the cellular aspects of the subject as championed by Virchow. Ewing has pointed out with ill concealed disapproval that in America the development of medicine on the basis of scientific procedures has been dominated by physiology, bacteriology and chemistry rather than general pathology, and further, that its progress has been directed in many instances by persons whose preliminary training has not been primarily medical. It is, after all, futile to evaluate the impulses and forces which lead to discovery and advancement of science. "There is glory enough for all." Perhaps the recollection of Virchow's fundamental belief that "there are no specific cells in disease, but only modifications of physiologic types," will act as a stimulus to awaken new enthusiasm for pathology as a fundamental discipline in medical studies. We need not bemoan the assumption that the pathologist is today looked upon by many as a servant of the clinic whose foremost duty is to furnish a record of bodily changes that have occurred, whereas the physiologist and biochemist appear to be in ascendancy as the philosophers and guides of the clinician. It was Virchow who made pathology mean something more than postmortem observation; he it was who demonstrated that pathology, rightly considered, embodies all the cognate sciences in its effort to produce a true picture of morbid processes in life. Were it not for Virchow's championship of a broader conception of his subject, Ewing writes, the pathologist of today might still remain a mere servitor of the clinician, a dispenser of skilful diagnoses, a compendium of anatomic data.

## Current Comment

### OUR NEW POSTMASTER GENERAL

It is gratifying to physicians that a member of their profession is in the President's cabinet, even though he is there as Postmaster General, and not as the head of a national department of health. Dr. Hubert Work, the first physician to be thus honored since Dr. James McHenry served as Secretary of War in the cabinets of Washington and Adams, gained his present high position, not through political influence, but because his year as First Assistant Postmaster General proved him to be a man thoroughly qualified for the higher office. This was emphasized by the fact that his appointment was unanimously confirmed, without the usual reference to a committee, and within an hour after his nomination was received by the Senate. And this in spite of the fact that senators and representatives were bombarded with telegrams, letters and petitions from the antimedical faddists in general, and in particular from those to whom scientific medicine is anathema. During the war, Dr. Work was medical adviser of the Provost Marshal General, and in this position

his diplomatic qualities were of inestimable service in correlating the work of the medical department of the army with that of the Provost Marshal General's Office. For several years he represented his state as a member of the Republican National Committee, a position of no small importance in our political system. Dr. Work always has been interested in the welfare of his profession, and it is said that he was the youngest man ever elected president of the Colorado State Medical Society. For four years he was president of the board of health of that state. He was the first Speaker of the House of Delegates of the American Medical Association, having been elected in 1916 as head of the body in which he had served continuously as a member since 1904 and being reelected each year until he was made President-Elect of the Association in 1920. He is now serving as President of the Association. Those who know Dr. Work realize that he possesses all of the fundamental qualities required for fulfilling his high position—courtesy, tact, honesty and justness.

### FIGURES NEVER LIE—BUT FIGURERS DO

Those practitioners of the healing art who maintain that all pathologic conditions, from cancer to chilblains and from soft corns to hardening of the liver, are due to subluxated vertebrae impinging on spinal nerves are republishing their annual batch of "statistics" on the chiropractic treatment of influenza. The standard advertisement runs, in part, as follows:

The Following Statistics of the 1918 "Flu" Epidemic  
are Respectfully Submitted:

One of Every 16 Patients Died Under Medical  
Treatments.

One of Every 127 Patients Died Under Osteopathic  
Treatments.

One of Every 513 Patients Died Under Christian  
Science Treatments.

One of Every 886 Patients Died Under Chiropractic  
Adjustments.

These figures, of course, are evolved from the inner consciousness of those gentlemen that furnish verbal ammunition for chiropractic advertising campaigns. But, even assuming them to be correct, just what do they prove? They prove that many more people die when under the care of a physician than die when under the care of an osteopath, a Christian science practitioner or a chiropractor. The medical profession is perfectly willing to admit this; it is equally willing to admit that the vast majority of those who die, die in bed. Neither of these somewhat self-evident propositions, however, argues that scientific medicine is more dangerous than chiropractic, "Christian science" or osteopathy, or that a bed is a dangerous place. They do prove that most people who are sick enough to be in danger of death are usually in bed and under the care of a physician. Any one who is familiar with the facts may admit that comparatively few people die while directly under "chiropractic adjustment" or any other of the fad "treatments." There are two outstanding reasons for this. The first is that the man who relies, for example, on chiropractic for the relief of some passing indisposition precipitately



deserts this cult when he realizes that he is dangerously ill. Then he calls in a physician; should he die, he dies under "orthodox medical treatment." The second reason is that, should a patient die under "chiropractic adjustment," the law would require an inquest, as in very few states in the Union are these gentry permitted to sign death certificates. It is notorious that when the "patient" of a chiropractor becomes dangerously ill, the chiropractor urges the family to call in a physician!

#### ENDOWMENT FOR HOPKINS SCHOOL OF HYGIENE

The magnificent gift of \$6,000,000 by the Rockefeller Foundation to the Johns Hopkins University for endowment of its School of Hygiene, mentioned elsewhere in this issue of *THE JOURNAL*, represents a recognition by the foundation of the great strides that preventive medicine has made in the last decade. When the Hopkins school was opened in 1918, the Rockefeller Foundation consented to make annual contributions for a series of years, but the school had not an assured and definite income on which it could build for the future. Of the present gift, \$1,000,000 is to be utilized for the construction of a building, plans for which have already been drawn, and the remaining \$5,000,000 is to constitute a permanent endowment which is expected to yield an annual income of \$250,000 for maintenance. Since its establishment, the School of Hygiene has exercised a great influence in advancing the cause of preventive medicine. At present, there are enrolled 131 students, who include representatives from twenty-seven states and ten foreign countries. Dr. William H. Welch, director, and Dr. William H. Howell, assistant director, have laid emphasis on the training of men and women competent to accept positions as health officials in communities of importance. In addition to outlining a regular course of study leading to the degrees of Doctor of Public Health, Doctor of Science in Hygiene, and Bachelor of Science in Hygiene, it is planned to give short courses or institutes for health workers already in service. It is interesting to learn also that the state of Maryland has encouraged the giving of such contributions as the Rockefeller Foundation has made to the Hopkins school by passing a law exempting such gifts from taxation.

#### OUR KNOWLEDGE OF VITAMINS

Commenting on the trend of medical research concerning vitamins, the latest report of the British Medical Research Council says:

The present situation is a curious one, upon which posterity will probably look back with great interest. We still have almost no knowledge of the nature of these elusive food substances or of their mode of action, but we have gained empirical knowledge already of the greatest practical value for the prevention of scurvy and of other grave diseases and for the promotion of health and beauty in the population.

This statement, it will be noted, emphasizes the foundation on which rests our present use of vitamins. From time to time *THE JOURNAL* has com-

mented on our lack of actual knowledge of these mysterious substances, emphasizing particularly the generally accepted fact that the taking of a well-balanced diet results in providing the individual with such vitamins as are necessary to his growth and nutrition. Last week appeared a brief report of a meeting of the Chicago Medical Society devoted to this subject, and it was gratifying to have the conservative view which *THE JOURNAL* has emphasized substantiated by many of those who took part in the discussion. Moreover, the *British Medical Journal*, in its leading editorial for February 11, reiterates that an abundant supply of vitamins exists in all fresh vegetables, and that a considerable quantity occurs in milk and meat, provided the latter substances are obtained from animals fed on fresh foods. "A normal adult," it says, "living on an ordinary diet containing a reasonable proportion of fresh vegetables is, therefore, certain of obtaining a plentiful supply of vitamins." Of all the mass of evidence which has accumulated relative to these substances, this fact is the point of greatest importance. It is, however, very unfortunately, the one point which those commercially inclined are unwilling to recognize.

#### LEGISLATION FOR PAY OF OFFICERS

Last week *THE JOURNAL* published the fundamental facts<sup>1</sup> regarding the proposed bill for the readjustment of pay of members of the Army, Navy, Public Health Service, Coast and Geodetic Survey, and Coast Guard. Unless some action is taken on this bill prior to July 1, 1922, officers of these services will automatically revert to the 1908 pay schedule, notwithstanding the fact that today the purchasing value of the dollar is greatly diminished. As will have been noted by a study of the material published, the new bill is based on the principles that:

1. Length of service should be a controlling factor in determining rates of pay.
2. There should be an element in the compensation of an officer that will increase or decrease the total compensation as the cost of living increases or decreases.
3. The conditions under which an officer lives are so dissimilar to those existing in civil life that some extra compensation should be allowed to enable him to care for his family under these conditions.
4. A junior officer requires somewhat less in the matter of living conditions than older officers.

In the general readjustment to be effected by this bill, an actual saving over the 1923 budget is assured. As our readers know, the physicians who take commissions in these government services virtually commit themselves to a life of renunciation so far as financial independence is concerned. It will, therefore, be no more than their due that the government give them a satisfactory living wage. The bill is sponsored by Senator James W. Wadsworth, New York, and Representative John C. McKenzie, Illinois. Physicians may aid the enactment of this legislation by writing directly to them, expressing approval of the proposed measure.

1. Government Services, J. A. M. A. 78:663 (March 4) 1922.



## Association News

### ST. LOUIS SESSION

#### Automobile Accommodations

The Local Committee of Arrangements with the cooperation of the St. Louis Convention, Publicity and Tourist Bureau has made arrangements so that Fellows who may wish to do so can use the Tourist Camp in Forest Park during their stay in St. Louis. This camp will accommodate approximately 150 automobiles. It is equipped with camp stoves, toilet facilities, shower baths, running water and sinks for washing articles of any kind, also with a temporary rest room. The camp is located in the western part of Forest Park just off Wells Drive, about a quarter of a mile east of Skinker Road. It is a pleasant shaded spot. Physicians who wish to camp out during their stay in St. Louis, should apply for permits, either directly to Mr. Fred W. Pape, Commissioner of Parks and Recreation, or to the Hotel Committee, Dr. Louis H. Behrens, Chairman, at 3525 Pine Street, St. Louis.

#### Hotel Accommodations

The Committee on Hotels announces that at all large hotels at St. Louis there are one or more large rooms with bath which will accommodate from four to six persons. These are desirable rooms, and when several persons are coming from the same community these groups can be consigned to one of the larger hotels if they will room together.

These accommodations can be secured when it would not be possible to quarter the physicians in the same hotel under other conditions.

Parties who desire to use such rooms should write direct to the chairman on the Committee on Hotels, Dr. Louis H. Behrens, 3535 Pine Street, St. Louis.

### ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS

*Held in Chicago, March 6-10, 1922*

#### MEDICAL EDUCATION

MONDAY, MARCH 6—MORNING

#### A Constructive Program

DR. ARTHUR DEAN BEVAN, Chicago: The right conception of medical education must recognize the fact that its ultimate object is to secure to every person the great benefits of modern scientific medicine. It would be a great mistake for the university to develop its medical school as a school of science without proper regard for the fact that the people and the medical profession of that community have an important and vital everyday interest in its organization and workings. For almost twenty years the American Medical Association has been making an intensive study of medical education through its Council on Medical Education.

What is the primary purpose of the medical school? I cannot do better in presenting this thought to you than to quote from a report made by President Henry S. Pritchett in the latest (1921) report of the Carnegie Foundation. He says: "The primary purpose of the medical school is to train practitioners for the medical profession. There are many by-products of this primary intention, but as Huxley so clearly pointed out a generation ago, these are by-products whether one considers the service of the school to the public health, to medical research or to any other related field of endeavor. All experience goes to prove that these by-products will be greatest when the medical school conceives most clearly its fundamental purpose and bends its effort most directly to it."

The last ten years have shown a notable advance in medical education. The result has come primarily from the leaders of the medical profession. Through them the Ameri-

can Medical Association and its Council on Medical Education have exerted a salutary influence to weed out the unfit medical school, to promote a sounder and more sincere medical education, and to raise the standard of medical practice. The epoch-making report written by Mr. Abraham Flexner ten years ago voiced in effective fashion the views of the wisest medical men in America.

The medical school should be located in and about the hospital and the dispensary because it is here that we can best have access to the patient who is the object of our study. The laboratories and class rooms used to teach the daughter sciences of anatomy and physiology, pathology and pharmacology should be grouped about the hospital and dispensary. The opposite point of view, that the sciences of anatomy and physiology, pharmacology and pathology together form the science of medicine and that medicine is simply the application of these sciences, and because of that fact that the medical school should be located at the university in touch with these departments, is not sound and should not be considered by university trustees in organizing and locating the medical department.

#### TEACHING HOSPITAL

The expense of conducting a hospital large enough for a teaching hospital for a medical school is great, and it should not be borne by the medical school. The primary function of a hospital is to care for the sick; its secondary functions are teaching and research. In serving its primary purpose it is doing an essential work in the community, and its cost should be properly borne by the community which it serves. In addition to the teaching hospital there should be an outpatient department which is essential in medical teaching and a diagnostic clinic, such a plant as the Mayo Clinic building, where the staff of the hospital can have its consultation and examining rooms, clinical laboratories and every facility to examine and care for pay outpatients. I believe that the time has come when we should recognize such a diagnostic clinic as one of the most essential plants in our medical school scheme. In addition to the general teaching, hospital affiliation should be made with special hospitals, as maternity, and children's orthopedic hospitals, for teaching purposes, and when possible, these should be built around the general medical center. The training school for nurses is an essential part of the hospital, and the teaching should be under the control of the medical staff. The trained nurse is an assistant to the physician, and it is the duty of the medical staff to see that she is properly trained. I emphasize this because it is a duty which is too often neglected.

#### TIME IN MEDICAL CURRICULUM

In constructing the medical curriculum, proper consideration must be given to the element of time. We should aim to bring students to the medical school at the average age of 20, and complete the medical course, including the intern year, at the average age of 25. This will require a saving of about two years, as the present average age at completion of the intern year is 27 plus. One outstanding fact that seems clear in the light of our studies of medical education and its relation to the American college course of four years is that the purposeless four year college course is an anomaly and a menace to national efficiency, and that it definitely should be done away with and its place taken by a specific preliminary two years' course preparatory for the professional schools, medicine, law, engineering, teaching, etc. The premedical requirement of physics, chemistry and biology is sound and is now generally accepted. The year spent by the student in the hospital should be a required part of his medical course. The intern year should be required by both the medical school and the state licensing board. I want again to urge the medical schools to make provision to train specialists and to provide postgraduate courses for medical practitioners. It is clearly their duty to do these two things and it is not an impossible or difficult task.

#### Problems Resulting from the Recent Improvements in Medical Education

DR. N. P. COLWELL, Chicago: The enlargement of the medical school, with its laboratories, its larger utilization of hospitals and its more complex curriculum is resulting



also in a revolution in the practice of the healing art. Indeed, several important problems have resulted largely from the modern training now obtained by medical graduates and the essentials for the practice of modern medicine. Some of these problems are stated as follows: (a) The cost of furnishing a medical education has been greatly increased; (b) medical schools are finding it necessary to limit the enrolment of students; (c) there is a rapid trend toward specialization in the practice of medicine; (d) there is an increasing development of group clinics; (e) there is a growing demand for hospitals, and the number is rapidly increasing; (f) there is an increasing demand for interns, and (g) there is an increasing shortage of physicians in the smaller towns and rural communities.

#### EXPENSE OF CONDUCTING MEDICAL SCHOOLS

Medical school expenses have been greatly increased; the larger buildings entail greater cost for lighting and heating and for janitor service; there is a larger number of expensively equipped laboratories; there is the larger expenditure required for medical research; there is a greater expense for the maintenance of libraries with their series of medical periodicals, and of medical museums including the cost for the preparation of new material and, unless provided by the city, state or private benefactors, there is the large expense for the maintenance of dispensaries and hospitals. The largest single item of cost, however, is for salaries paid to the essential expert instructors who devote their entire time to teaching and research. The carrying out of the modern curriculum also requires a larger expenditure for administration, for records and for clerical assistants. It is not surprising, therefore, that at present the cost of furnishing a medical education is nearly four times greater than the income obtained from students' fees, even though there has also been an increase in the tuition fees charged.

Reports obtained from sixty-nine medical schools in regard to income and expenditures for the last fiscal year show that the average income was \$130,671.87, including \$35,135.37 (26.8 per cent.) obtained from students' fees, and \$95,536.50 from other sources. The average expenditure by each college was \$125,041.46, including \$46,161.60 (37 per cent.) for all-time teachers, \$21,131.42 (17 per cent.) for part-time teachers, \$19,679.46 for wages, and \$38,068.98 for maintenance and supplies. Of these sixty-nine medical schools, the average yearly fee obtained from each student was \$185.08, and the average amount which the medical school expended in order to furnish his instruction was \$655.05. In 1916 the average fee paid by each student in eighty-two colleges reporting was just \$150, and the average expenditure for each student was \$419. In the five years, therefore, the average expenditure has increased 56 per cent., while the tuition fee has increased only 24 per cent.

#### LIMITATION OF STUDENTS

As the medical curriculum became more complex, and the teaching of students in small sections became more general, especially in dispensaries and hospitals, a larger number of individual teachers were required, and administration became more difficult. To prevent confusion and to establish greater efficiency, therefore, it became necessary for medical schools to admit only such students as their teachers, laboratory space, and available hospital and dispensary facilities would permit. Forty-seven medical schools are now limiting the number of students admitted to each class, this limit varying from twenty to forty students per class in the smaller, and from eighty to 170 students in the larger colleges. These forty-seven colleges with their limited enrolments have a total capacity for 11,925 students. The remaining nineteen Class A colleges have an estimated capacity, based on inspection, for 4,400 students. The sixty-six Class A medical schools now existing, therefore, have a total capacity for 15,925 students.

Sixteen of the Class A medical schools report that, by adding several teachers, making certain increases of laboratory space, or by other minor modifications, provision could be made for enrolling approximately 1,500 more students, which would increase the capacity of the sixty-six Class A schools to 17,425 students. This is about 1,500 more students than are now enrolled in all existing medical schools, including those in Classes A, B and C.

As entrance requirements were being raised, anxiety was expressed lest this would cause a dearth in the number of

medical students and eventually a shortage of physicians. At present, however, the numbers of premedical students are so large that universities are wondering whether all can secure admission to medical schools. It was expected that a reduction in enrolments would follow the adoption of higher entrance requirements, and the total gradually decreased until in 1919 only 13,052 students were enrolled, or less than half of the number (28,142) enrolled in 1905, the time this country had more than half of the world's supply of medical schools. Since 1919, the total enrolment has increased by about 1,000 students each year, and during the present session approximately 15,967 students are enrolled, an increase of 1,095 since a year ago. The present number represents the largest enrolment of medical students since 1914. The great majority of these students are in the seventy-six (94 per cent.) medical schools requiring two or more years of college work for admission and which have also undergone many other improvements. In 1914, however, only 44 (43 per cent.) of the medical schools were requiring the higher entrance qualifications.

#### SPECIALIZATION

During the last twenty years, the number of physicians entering the specialties has been rapidly increasing, and the proportion remaining in general practice has been correspondingly decreasing. This is the result that naturally follows the enlargement of the field of medical knowledge, the greatly improved medical schools, the more complex medical curriculum, and the modern methods of medical instruction. The medical education given in the average medical school prior to 1900 could result only in the turning out of general practitioners. Physicians were not trained to become specialists until after several years of general practice, or after securing a considerable amount of postgraduate medical education. In that period, the medical curriculum did not include even the essential instruction in the specialties now properly given in medical schools. The fields of medical knowledge and of practice are now so wide that no one can secure the highest degree of efficiency and skill in the diagnosis and treatment of diseases unless he limits his practice within certain narrow lines, leaving diseases in other fields to other specialists.

It also appears that medical graduates, only too frequently, begin practicing some specialty immediately after finishing their intern year, without first obtaining as a foundation to such practice the valuable experience obtainable through five or more years of general practice. In the rapid development of the medical schools, therefore, their primary object should not be overlooked, namely, that of training physicians for the general practice of medicine. A revision of the medical curriculum with this object in view is an exceedingly important matter.

#### GROUP CLINICS

Another development resulting from the rapidly widening field of medical knowledge is the group clinic, the hospital staff, the partnership, or other scheme whereby several specialists cooperate in their practice, so that each will be free to do such work as comes within his specialty. Such groups, if properly conducted, may be of service to the patient, who goes to the clinic, pays one fee, and is examined and treated by specialists. At present, unless he is a charity patient and goes to a free dispensary, he is shunted from one specialist to another at a great loss of time, undergoes several examinations, and pays several large fees.

#### HOSPITALS

During the last fifteen years, the number of hospitals has been tremendously increased. In 1913, there were approximately 2,500 general hospitals having more than twenty-five beds, including 924 having a hundred beds or more and about 1,500 others having from twenty-five to 100 beds, the total capacity being approximately 200,000 beds. In 1920 the number of general hospitals increased to 4,012, having a total bed capacity of 307,358. The latter figure does not include about 2,000 other hospitals, such as government hospitals, sanatoriums for the insane, state sanatoriums for the tuberculous, penitentiary hospitals, or homes for the aged, blind, incurables, etc.

#### SUPPLY OF INTERNS

In recent years three factors have greatly increased the demand for interns. One is the improved qualifications of



the present day graduates in medicine as compared with fifteen or more years ago. In former years, many hospitals did not use interns and would not have them in the hospital. Ten years ago, in fact, there were not enough internships available for the 4,483 students who graduated in that year. With the improvement of the qualifications of medical graduates, however, more of these hospitals have made use of intern service.

The second factor in the increased demand for interns is the rapidly increasing number of hospitals. The supply did not fail to meet the demand until during the World War, when so many graduates who had planned to take hospital internships secured commissions in the government medical services. Beginning at that time, the demand for interns has become more and more pronounced. In 1918 there were 1,126 hospitals seeking interns. These hospitals had a total of 270,000 beds, providing internships for approximately 6,000 medical graduates, more than were turned out even in 1902. Hereafter, the training of interns may with advantage be restricted to the hospitals having the facilities and methods for providing a fifth year of actual medical instruction. Other hospitals will need to employ house physicians or to arrange otherwise for the services usually done by interns. A third factor in the demand for interns has been the improvements resulting from the campaign to improve hospital service, which has called for better records, including histories of patients, records of physical examinations, records of laboratory analyses, records showing the patients' progress, and end-results.

#### SHOTAGE OF PHYSICIANS

For this increasing shortage of physicians in such communities there are several reasons. Foremost is the economic reason that physicians can no longer make a living in such communities. The rapid progress in the prevention of disease has diminished the cases of sickness in rural districts as well as in cities. The development of the automobile, the improved roads and interurban car lines has added to the country practitioner's difficulties in that well-to-do people in the country are going more and more to physicians in the cities, leaving only the emergency and charity cases for the country doctor. No wonder the country doctor, after he left the government medical service, preferred to seek a location somewhere else. Another reason has been the revolution in the practice of medicine through the general recognition of the advantages of hospital practice in the diagnosis and treatment of human diseases. This also has induced many of the wealthy country patients to go to the city for treatment, to the detriment of the country doctor. A third reason is the general trend of population from rural districts to the cities.

The most certain method of insuring a supply of competent physicians for rural communities is to have a community hospital established in every center of population having people enough in the town and surrounding country to support it.

#### Report on Undergraduate Medical Curriculum: What Subjects, If Any, Should Be Transferred to the Graduate Medical School?

DR. RAY LYMAN WILBUR, Palo Alto, Calif.: The essential aim of the undergraduate medical curriculum is to provide clinical training to a student already versed in laboratory methods so that he will know how to practice medicine. The degree of Doctor of Medicine should mean that its recipient has a large fund of immediately available anatomic, physiologic and clinical information with which he can aid and guide a patient after his well trained sense organs have gathered together as many facts as possible, and his brain has given them an orderly relationship. The development of the power of observation and of rapid, honest, unbiased reasoning, based on ascertained facts, is the specific problem before the medical student. Watch a trained clinician enter the sickroom. He is as keen as a bird dog on the scent. Every sense is alert. His eye takes in at a glance the surroundings of the patient, the evidences of care or lack of care, anxiety, repose, cyanosis, jaundice and a hundred other conditions. His ear tells him of voice changes, types of breathing. His nose adds its share; and when he touches the patient or percusses the chest, a combination of all the

senses helps him to build up a mental picture of the processes going on inside the human body which years of training have taught him to know so well. All the time his mind is busy arranging the facts ascertained, calling up former experiences, measuring values, reaching conclusions, mapping out plans for additional methods of seeking information and preparing a method of treatment. When well done, such a visit represents the height of ordinary human achievement, and at times it seems to bear the evidences of genius.

In the undergraduate medical years we are seeking to lay the basis for such work in medical practice. We can call it the art of medicine or the science of medicine. The two merge into one in real medical work, and a skilled technician must be the result. The main reason the present undergraduate course often fails is that we have tried to force into four short years the enormous and constantly growing fund of medical knowledge. I am reminded of the professor I heard lecture some years ago, who spent twenty minutes of a lecture hour in a general course in a carefully digested description of a very rare medical condition and who closed by saying, "Now I want you to remember this because when you get out into practice I want you to be able to say, no matter what kind of a case you may meet, that I covered it in my lectures."

#### WEAKNESSES OF FUNDAMENTAL TRAINING

The other great weakness of the present curriculum is that it was built up at a time when clinical teachers had no confidence in the basic training of the student, and they felt impelled to repeat fundamentals and reorient students in each so-called course. There are few medical schools even today in which the medical student is not taught the general phenomena of inflammation by from three to fifteen different teachers in different subjects. Repetition of elementary work, duplication and lack of coordination, too much informational material, rigid legal hour requirement, and the dead hand have made the present medical school a place where only those who can gorge can expect to come out well trained. In short, we have built up such a wonderfully intricate mechanism of hours, schedules, lectures, courses, that it has become scrambled, mixed up, unwieldy and inefficient. Why not scramble it entirely, look carefully over the mass, pick out the fundamentals and get a fresh start? Our students come to us now after a good preliminary training which has eliminated many of the unfit. They have a training in the basic sciences, and are able to do an increasing amount of independent and thoughtful work.

The fundamentals with which they must concern themselves are: (1) sound basic training in methods of thought, memory and honest reasoning; (2) the ability to observe; (3) the ability to use books and the tools of the profession; (4) the retention of a sound body with acute trained senses, and (5) the mental accumulation of essential facts immediately available for use.

The central core of medical training must include anatomy, physiology, chemistry, bacteriology, pathology, pharmacology, clinical and laboratory medicine, including pediatrics and mental diseases, clinical and laboratory surgery, obstetrics and gynecology, hygiene and public health. We can add for good trimming the history of medicine and medical jurisprudence. There is no need to include any of the so-called specialties except in an elementary way if the foregoing subjects are adequately taught. The professors of medicine and surgery can readily bring the main essential facts of every specialty into their routine teaching. The student can be left time enough for optional work in his four years so that he can enter any chosen special field for additional technical training. If he learns, though, how to examine thoroughly a single patient, he will have the principal tools and information required. The specialties, taught as they are at present, belong outside the undergraduate medical curriculum. They can be included in the medical curriculum when they are taught by men who can range over the body instead of having their vision limited largely to body orifices. Such men can come in and form part of the teaching staff of any one of the three great divisions of clinical medicine.

Without emphasizing any of the details, my ideas are: 1. Push some clinical work as far back into the medical course as is physically possible to heighten the interest of



the student and give him a sense of professional training. 2. Divide up the last two years between general medicine and pediatrics, including mental diseases, 40 per cent.; general surgery, 30 per cent.; obstetrics and gynecology, 10 per cent.; hygiene and public health, from 5 to 10 per cent.; optional work, such as special work along general lines, thesis, work in special fields, medical jurisprudence, history of medicine, etc., from 15 to 10 per cent. 3. Bring the laboratories into immediate conjunction with the clinics so that the eye of the student, still bearing the image of the anemic appearance of a patient, may see his red blood cells. 4. Have the clinician cross over freely into the domains now sacred to the specialists, bringing in the specialists to help him. 5. Have a committee on coordination of course content with regular reports of the ground covered by teachers to avoid duplication and to see that each class is exposed to a sufficient amount of well balanced and selected information. 6. Make hospital experience with responsibility a requirement for graduation either by the intern year or by some other device. One responsibility well met, no matter what the pathologic condition, is of more value in medical training than a dozen carefully dehydrated lectures. 7. Since all medical practice is of the nature of research and medicine is constantly growing, keep the spirit of research active all along the line in the medical course.

#### A New Curriculum: Report of Committee on Education and Pedagogics

DR. HUGH CABOT, Ann Arbor, Mich.: Perhaps the most striking thing about the curriculum of American medical colleges is its increasing tendency to rigidity of requirement. This rigidity might be considered from two points of view: first, in its effect on the student, and second, its effect on the individual school.

##### RIGIDITY OF THE CURRICULUM

The increased requirement has now become so great that almost the entire time of the student from entrance to graduation is prescribed in allotted hours. This inevitably results in enforcing individual conformity both in the amount of knowledge acquired in the different fields and also in the rate at which that knowledge must be acquired. This might easily have a tendency to produce a relatively uniform product and would do so if it were not for the notorious variation in the capacity and acquisitiveness of the human mind. It probably has to some extent tended to produce a similarity of product which is not clearly desirable and has had a tendency to put a premium on steady plodding work rather than on individuality of approach to the subject and the development of the personality of the student. The present course hurries students along without time for contemplation; and, while it may perhaps be true that every human mind is not capable of contemplation, still it is hardly safe so to plan the teaching schedule as to make it relatively impossible. Again, it tends to discount the notoriously different rate at which men acquire knowledge and to make it difficult for a student whose mind moves slowly but surely toward its goal to keep the pace, resulting perhaps in hardship to men of high grade though not rapidly moving minds.

The curriculum, as it is at present, has a definite tendency to produce a great similarity between Class A schools; and, while a certain similarity in the general level of the course offered is not only desirable but also essential, it would be unfortunate if the curriculum should have the tendency to standardize medical education beyond a reasonable point. It appears to us that individuality in schools is no less desirable in individuals, and it is clearly true that the conditions surrounding any given school will, when allowed reasonably free play, result in a high degree of individual development. To a considerable extent, the best result will be obtained in any particular school or in any particular locality if a reasonable chance be allowed to build the curriculum around the particular group of men who are or may become available. Rigidity of curriculum tends to make it difficult for each school to build its departments in such a way as to allow the widest scope for the chiefs of departments and to encourage them to develop teaching methods and the relation between required and desirable knowledge which their particular circumstances would permit.

##### CONCENTRATION OF PRECLINICAL SUBJECTS

Perhaps one of the most striking changes coming more or less as a result of the standardizing of medical teaching was the concentration of preclinical subjects. At the time this was done it was regarded by many as a pretty bold experiment; but there can be no doubt that it has constituted a definite advance over previous conditions. It is perhaps more important that such an arrangement should be made in the teaching of American students, as the criticism that they have lacked basic training has clearly been more or less valid. That the concentration has improved to a great extent the basic training and tended to offset this criticism will be generally admitted. On the other hand, this plan has now had an extended trial, and it appears proper to inquire whether or not it has developed any weaknesses. The obvious danger of this plan, undoubtedly foreseen from the start, was that it would tend to segregate medicine in the mind of the student and that he would come to think of the fundamental branches as somewhat removed not only in time but also in application from the clinical work. It is desirable that the medical student should be associated with things medical at the earliest point in his course, since the time that can be devoted to the study of medicine is all too short to develop proper understanding of the human body in health and disease, and particularly to develop in the student the art of dealing with human beings. It is probably true that, in the days before the concentration of preclinical subjects, the student did in fact acquire more knowledge of the manifestations of disease, though he clearly lacked a foundation on which to base his knowledge.

In attempting to work out a new curriculum, your committee prepared a tabular view based primarily on the recommendations of the two previous reports and showing what would have been the result if the plan of assigning a definite number of hours to each subject had been adhered to. You will note by reference to the tabular view that no startling changes would have resulted except a large increase of the hours required for the teaching of hygiene and preventive medicine from a requirement of fifty-four hours to a requirement of 170 hours. This, we believe, is entirely consonant with the widely held opinion that the absolute requirement in these subjects has been too small and that while in some schools an excellent course has been given, in others it has fallen below what might be regarded as necessary and has yet complied with the previous recommendation. There can, we think, be no doubt that the importance of these subjects is now generally recognized, and they must, therefore, be given a much more prominent position in the absolute requirements. The other most striking increases would have been one of 100 hours in the combined field of pathology and bacteriology, the increase being about equally divided between the two basic subjects and some increase in general medicine and also in pediatrics. It will be noted that the net result of these increases, large and small, would have been to add to what may be regarded as an already overburdened curriculum a total of some 440 hours. Such an increase our committee would feel very reluctant to make, as we entirely believe that the present absolute requirements are very high, and we have grave doubts whether they can be increased with safety.

We have therefore decided to recommend to the Association that the method of stating the requirement in terms of hours for each subject be abandoned. For this we would substitute a plan which we believe will maintain the present high standard, but relieve the curriculum of its present rigidity and allow individual development. Assuming the present premedical requirements, and also assuming the present required medical course of four years of eight months each, we would state the requirement in each subject in terms of percentages and not in hours. Thus:

Better	Per cent.
Anatomy .....	14 to 18.5
Physiology .....	4.5 to 6
Biochemistry .....	3.5 to 4
Bacteriology and pathology.....	10 to 13
Pharmacology .....	4 to 5
Medicine .....	20 to 26.5
Preventive medicine and hygiene.....	3 to 4
Surgery .....	13 to 17.5
Obstetrics and gynecology.....	4 to 5

Electives up to 25 per cent.

76 to 100



It will be noted that a variation of about 25 per cent. is allowed, and also that in the broad fields of medicine and surgery no specific allotment is made for the subdivision of specialties. Thus, each school may work out its own schedule with a very free hand and present electives or not as it thinks best.

## DISCUSSION

DR. WILLIAM DARRACH, New York: Our chairman (Dr. Bevan) painted a beautiful picture of the organization of the medical school, the hospital, and the clinical head of the departments, who is going to satisfy the demands made on him by the prominent clinician, to satisfy most of the demands made by the general public on him and to solve their problems, and also to run the hospital service in a way that it should be run and also to do the teaching. It is the kind of supermen we see in Chicago, but we do not find them in New York. Our experience is that the clinical teacher, who is trying to satisfy all the demands made on him, is very busy.

I can find nothing to disagree with in Dr. Wilbur's paper. He has opened up possibilities that are sound and sane for the future, and I am sure that the curriculum of the medical schools of the country five years from now will be much more liberal; that it is going to be one which will allow students to have that freedom of working out their own individuality which Dr. Cabot has emphasized without becoming mere receptacles of knowledge that is pumped into them. Nothing is more impossible than the present curriculum. As long as we limit teachers to the courses they are giving to undergraduate students, we shall find it impossible to prevent them from teaching those details in which they are most interested. If we provide some means or opportunity for teaching optional courses both to undergraduates and to graduates and university students, they will be more willing to confine their efforts to the fundamental lines of the undergraduate work than if we make that their only opportunity for teaching. For that reason, I believe that the best and most efficient methods of building up teaching work in the medical sciences lies in association with the undergraduate course, the undergraduate work, and all the other more special and more advanced courses, whether that is teaching for graduates in a general sense, or in a more restricted sense of public health work, university work, dental work, teaching nurses, and all the other branches which all come under the same group.

DR. E. P. LYON, Minneapolis: I have always been in harmony with the idea that the curriculum should be freed as much as possible of the rigidity mentioned by Dr. Cabot. We have enough elements of rigidity in the very nature of things, because we must get certain things in the course. The course must be based on anatomy, physiology, pathology and so forth, and we cannot go outside of these widely. Our Minnesota program at present is founded on the theory that a certain amount of elective work should be given as far as possible throughout the course.

DR. DAVID L. EDSALL, Boston: In regard to the fixation of the schedule, some of the things we have done are in consonance with the statements made by Dr. Wilbur. We have reduced the time of minor specialties down to a point at which they seem to contribute more to a knowledge of general medicine and general surgery, and not give a man the opportunity to feel that he knows anything about the practice of specialties, which are limited to thirty-six hours each in the third year. In the fourth year we have applied the whole time of one month to pediatrics, one month to additional obstetrics, and the remainder to general medicine and surgery and elective work, two months being free for a man to select what he sees fit.

Regarding the duplication of subjects referred to by Dr. Wilbur, that has been one of our greatest faults. It is a difficult thing to overcome, but by having combined exercises, namely, a certain amount of medicine and surgery, a considerable amount of pediatrics and medicine, giving it once instead of twice, we have gradually been increasing the amount of exercises given together. Let us take gastrointestinal conditions, such as gastric and duodenal ulcer. The medical man, surgeon and pathologist teach it together at one time. Or let us take cardiac irregularities. The physiologist will teach this subject in relation to cardiac irregularities along with the pathologist and clinician. By

a slow process of attempting to eliminate as much as we can a repetition of things, we guard against confusion in the mind of the student because these subjects are presented differently by different men.

DR. ALEXANDER PRIMROSE, Toronto: Instead of having what you call a four year medical course we have dovetailed that in with a two year premedical course and call it a six year medical course. This has helped us in some respects to solve some of the problems just discussed. In addition to the former ordinary entrance examinations to the university which admitted students of medicine, we have required an extra year preceding the course in medicine, requiring a student to take up certain subjects in which he has to pass an examination—English, mathematics, Latin or one modern language. In the six years' course we have introduced methods of option, and that has helped us to a considerable degree in meeting the defects regarding the standardization of students. It is an attempt to meet the problem that has been raised of putting all students through exactly the same mill, and not giving an opportunity for the development of the individual.

DR. H. GIDEON WELLS, Chicago: In making changes in the curriculum, one fundamental principle that should always be considered is that the medical student is a student throughout his life. He puts in under the present curriculum two years on the fundamental branches, and then when he graduates he has his whole life to improve his clinical knowledge. He has for the first few years to get the fundamentals on which his clinical knowledge must be built. Difficulties arose in previous years from the crowded curriculum, and lack of opportunity for original work and for initiative. Since we have introduced the quarterly system we have given a man an opportunity to elect what he wishes. He can make up his deficiencies brought about by illness or by the necessity of having to earn a living. We have been deeply impressed with the value of the quarterly system in many particulars.

DR. C. R. BARDEEN, Madison, Wis.: With reference to cutting down the clinical branches into two years, I think that what Dr. Wells said is correct, and yet I am inclined to think that the way the premedical courses are taught at present, we have too many grammarians teaching premedical courses—anatomy, physiology or other branches to the student—so that when the student gets into clinical medicine he finds his grammar too complex to use and gets along with a sort of stuttering language or a broken language the rest of his life, instead of having simply grammatical principles so that when he talks medicine, he talks it fairly logically.

DR. ALEXANDER C. ABBOTT, Philadelphia: There is need of more elasticity in the medical course. The medical student must be made to realize the relationship of the underlying sciences to the solution of clinical problems, from the time he enters a medical school. I can see no reason why sick patients should not be shown to the first year medical student as they are shown to the third year medical student, because unless premedical instruction in biology is made practical, the student who has not had instruction in general biology cannot appreciate what is going on in the animal body when he sees it. A competent teacher of the underlying sciences in the medical course can and should directly point out the relationship of the underlying sciences to "what is the matter with the patient," and in doing that it would be possible for the two subjects to be made infinitely more interesting than they are at present.

DR. NATHANIEL ALLISON, St. Louis: We have for the last two years been endeavoring to have a curriculum which gives the student more chances for initiative and to encourage him to develop resourcefulness. We are proposing to have a required course called a coordinated course. Unfortunately, we have not very well decided on how to give this course; but the idea is that the preclinical man should give certain things in medicine, and the medical man should give certain things in physiology, and so on, interchanging. This would be a required course throughout the four years, indicating to the student the value of some of the things he sees in the laboratory and in the clinic from the standpoint of correlation.

DR. C. A. HAMANN, Cleveland: We have reached the conclusion at the Western Reserve University that more elasticity in the curriculum is necessary. More opportunity



should be given for initiative, and in the last year particularly electives should be allowed. We should give opportunity in the form of electives to those men who wish to pursue laboratory branches. Needless to say, there is a dearth of laboratory men, and if a student in his second, third or fourth year manifests a disposition to go into laboratory branches, I think he should be afforded an opportunity in the choice of electives to do that.

DR. WALTER L. BIERRING, Des Moines, Iowa: A broader development of clinical teaching is largely based on the development of the medical sciences in this country and their closer affiliation with the clinical department. It is unfortunate, indeed, that there is a distinct line of division between the first two and the last two years, and it is gratifying to note that this is occupying the thought of the educator and that an effort is being made to bring these years closer together; yet there is a tendency in the discussion to attribute rather to the clinical heads the power of teaching medical physiology, pathology and the other fundamental branches when, in reality, all investigative work in the clinical departments should be in charge of the heads of the fundamental branches. Unless something is done to make the teaching of the fundamental sciences more attractive, to bring about closer affiliation, there will be a defect in the general training of the medical graduate, and in a short time the teacher of the fundamental sciences will only be a matter of history.

DR. CHARLES P. EMERSON, Indianapolis: I am fully convinced that if medical education is to develop progressively, and if we are to consider the curriculum with a view to future generations and the problems before us, we must hand over to them a better curriculum than that which we are planning now.

DR. LOUIS B. WILSON, Rochester, Minn.: From the standpoint of the graduate school, we of the University of Minnesota can thoroughly confirm the suspicions that things are not all right with the graduates that are being turned out from the undergraduate schools. They lack individuality. They come to us in a most receptive attitude, with very little initiative. They come to us with a tremendous burden of useless knowledge. They come to us knowing a lot of things that are not true, knowing few things that are worth while, and, above all, most uninteresting men. They lack culture, they know neither art nor literature; they know little of music, and certainly nothing of history and nothing of language. All these things they ought to have as gentlemen and as citizens in an intelligent community.

DR. FRANK BILLINGS, Chicago: The curriculum of the medical school needs modification chiefly because teachers are specialists in every branch, and because of that fact each branch is taught separately and distinctly and is usually unrelated to any other subject in the curriculum. In consequence, our students are unable in many instances to fit the bricks, so to speak, into the general structure of their education. It is a mistake that we have separated the fundamentals of medicine from the clinical branches, so that there is no real coordination of the branches, and there is no mixing of the faculty so that members may rub against one another and have a broad understanding of the work of each.

REV. C. B. MOULINIER, Milwaukee: The limitation of a curriculum in any kind of teaching in the whole field of human education must be based on the amount of knowledge and the intensity with which that knowledge is grasped by the mind; and if the medical profession continues to grow as it has been growing in the last few years as a teaching body, you are going to have medical textbooks for the undergraduate which permit me to call the bachelor's degree, and another set of textbooks which I call the master's degree. If it ever becomes possible for the medical profession to grade education, according to the intensity of knowledge, as the master, bachelor and doctor of knowledge, you will have covered the whole field as most of the other pedagogic fields are covered today.

MR. WALLACE BUTTERICK, President of the General Education Board, New York: In connection with this discussion I would like to quote the late Viscount Bryce as saying that standardization is the curse of education. Rigidity is a much more felicitous word than standardization, for standardization connotes the thought of thoroughness of a

curriculum that makes for the development of intellectual power. As teachers we are set to teach men and women to train their minds, to have the quality of moral earnestness and capacity for sustained education, so that they in turn may address themselves to the great problems not only in the medical profession but in all callings of life.

(To be continued)

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Medical Building for University.**—A contract has been let for a new medical building at the University of Alabama, Tuscaloosa, at a cost of \$82,000. Construction work will be started immediately.

### CALIFORNIA

**Personal.**—Dr. Alfred James Scott, Jr., Los Angeles, has been appointed a member of the state board of health to succeed the late Dr. Albert Lindley.

**Hospital News.**—Two adjoining tracts have recently been purchased by the Good Samaritan Hospital board, Los Angeles, for the erection of an additional building. The hospital will now cover an entire block.

**Physicians Lose Licenses.**—It has been announced by the secretary of the state board of medical examiners that the board has revoked the medical license of Dr. Jacob L. Arbogast, Sacramento, following his conviction for violation of the Harrison Narcotic Law. Dr. Arbogast was fined \$300. Five other physicians also had their licenses revoked, including Dr. Lawrence Bartlett, San Francisco.

**History of Medicine.**—The council of the Medical Society of the State of California announces that it is interested in securing histories of the organizers of medicine by counties throughout the state. Any physician who wishes to handle this matter for his own county is requested to communicate with the state secretary. Dr. Charles D. Ball, Santa Ana, is writing a history of the pioneers of Orange County.

### DISTRICT OF COLUMBIA

**Clinic of Applied Immunology.**—The Woman's Welfare Association, Washington, has established a clinic of applied immunology for working women and girls, in an effort to create better womanhood. Preventive inoculations will be given for smallpox, typhoid fever and diphtheria to those who desire them, at fees ranging from 25 to 50 cents. In the new clinic, the treatment of asthma, hay-fever and eczema will receive special consideration.

**Health Journal Suspends Publication.**—It has been announced by the League of Red Cross Societies that the *International Journal of Public Health*, which started July, 1920, and was printed in several languages, entailing a considerable expense, will be suspended. The league has decided to concentrate its efforts and resources on the promotion of popular health instruction through the American Red Cross. The *International Journal of Public Health* may be resumed later, through the financial assistance of international organizations.

### GEORGIA

**Hospital News.**—It is reported that the contracts have been awarded for the construction of seven government hospital buildings at Augusta, at a cost of \$283,000.

### ILLINOIS

#### Chicago

**Banquet for Dr. Robertson.**—A testimonial dinner was given, February 6, in honor of Dr. John Dill Robertson, former city health commissioner. More than 1,000 city health department employees, it is reported, attended the banquet. Mayor Thompson in speaking of Dr. Robertson's work said that he had reduced the death rate in Chicago from 15 to 11



per thousand during his term of office. Dr. William A. Evans was the toastmaster.

**Venereal Disease Conference.**—According to an announcement of the state department of public health, the venereal disease conference will be held in Chicago, March 13-18, under the auspices of the U. S. Public Health Service, the Illinois State Department of Health, the Chicago Department of Health and the Illinois Social Hygiene League. Dr. Hugh Neil MacKechnie, president of the Chicago Medical Society; Walter Dill Scott, Ph.D., president of Northwestern University, Chicago; Dr. Herman Neils Bundesen, health commissioner of Chicago, Dr. Charles Edward Humiston, president of the Illinois State Medical Society, and Dr. Isaac Donaldson Rawlings, director of the state department of health, Springfield, will give addresses at the meeting.

## INDIANA

**Hospital News.**—Plans have been made for the establishment of a hospital for incurable patients who are now in the Indianapolis City Hospital, as more room is needed for patients who can be restored to normal health.

**Lectures on Biochemistry and Experimental Medicine.**—A course of eight lectures on current problems of biochemistry and experimental medicine is being given at the Indiana University School of Medicine, Indianapolis. This course started February 15, and will be given on alternate Wednesday evenings at the university, under the direction of Prof. B. Bernard Turner, Ph.D.

**Woman's Council on Social Hygiene.**—A permanent organization of the council was effected, February 24, with the assistance of Drs. William F. King and James G. Royse of the state board of health. A representative of the Indiana Federation of Colored Women's Clubs will have charge of the work of the council among the colored women of the state.

**Personal.**—Dr. A. E. Rhyon has been appointed health officer of Parke County.—Dr. Crouch has been made county physician for Putnam County.—Dr. Ernest M. Conrad has been appointed health officer of Anderson, to succeed Dr. James A. Long.—Drs. Harry W. Fitzpatrick, Carrol C. Cotton and William H. Hoppenrath, Elwood, have been made members of the city board of health.—Dr. Louis A. Bolling, Attica, has accepted a position with the Veterans' Bureau, Washington, D. C.—Dr. George T. MacCoy, Columbus, has been elected president of the Indiana Tuberculosis Association.

## KENTUCKY

**Personal.**—Dr. Fred Anderson Jones has been appointed city physician of Paducah, to succeed Dr. Edward Adams.

**Protest Bill Affecting Institutions.**—Twelve members of the medical advisory board of the state board of charities and corrections have written to the Senate Committee on Penal and Charitable Institutions, protesting against the passage of Senate Bill 38, which defines the qualifications of members of the board, superintendents of the state institutions and employees. One of the qualifications is that the institution superintendent and employees must be residents of Kentucky, which, the medical board states, "would greatly augment the heavy handicaps already imposed on the board, as men trained in the care of the mentally deficient, the feeble-minded and the delinquent are difficult to secure in any state."

## LOUISIANA

**Hospital News.**—The contract has been let for the building of the Shriners' hospital for crippled children at Shreveport, at a cost of \$144,000. The institution will be ready for occupancy, Oct. 1, 1922.

## MARYLAND

**Hospital News.**—It has been announced that the Biedler-Sellman Hospital, Baltimore, has been purchased by Dr. Ira L. Fetterhoff, who will operate it under the name of the Homewood Hospital.

**Herter Foundation Lectures.**—The fourteenth course of lectures on this foundation was given at the Johns Hopkins Hospital, Baltimore, March 7-9, by Dr. William Maddox Bayliss, professor of physiology and dean of the faculty of science, University College, London, England.

**Coroners Appointed.**—The following physicians have been appointed coroners by Governor Ritchie, for two years, from the first Monday in May, 1922: Drs. J. Tyrrell Hennessy,

Harry K. Gorsuch, Otto M. Reinhardt, Thomas B. Horton, James M. Fenton, John J. Morrissey, William T. Riley, J. Knox Insley, and George C. Blades.

**Clinic for Children Who Work.**—A clinic, designed to bring children who are forced to earn their own living up to a higher standard of health and physical development, has been established by a group of women members of the First Unitarian Church, Baltimore. This is the first move of the kind ever made in the state and it is being encouraged by members of the state board of labor and statistics, to which children must apply for permits to work. Dr. Lawson Wilkins, of the Johns Hopkins Hospital, has already held a preliminary clinic at the parish house, and clinics will be held there every Friday morning.

**Donations to the Johns Hopkins University.**—The Johns Hopkins University has been given \$6,000,000 by the Rockefeller Foundation for the school of hygiene and public health. Of this amount, \$1,000,000 will be available for the erection of new buildings for the school and \$5,000,000 for an endowment covering its maintenance. The gift announced is said to be the largest ever made to any institution by any foundation. Work on the main building, the plans for which already have been drawn, is expected to start this summer. It will be located on a site which has already been acquired at the southeast corner of Monument and Wolfe streets and is so designed as to admit of liberal expansion. According to the provisions stipulated by the foundation, the annual contributions which the foundation has made to the school since it was opened in 1918 will be discontinued, and the trustees will assume full responsibility for the future needs of the school. A unique feature which the university authorities have planned in connection with the expansion of the school of hygiene is the eventual establishment, in the vicinity of the Johns Hopkins Hospital, of a "model" community, to be administered from the standpoint of public health and hygiene, on principles developed by the school as a result of its research studies. With the cooperation of the city and the residents, it is expected to include within the jurisdiction of this colony approximately 60,000 people. Such a colony has been established on a smaller scale by the school of hygiene at Hagerstown. Another gift to the Johns Hopkins Hospital is that of \$3,000,000, by an anonymous donor, on condition that the university raise an additional \$1,000,000. The offer was made last year and was referred to in the annual report. It was brought to the attention of the public with the announcement of the gift from the Rockefeller Foundation. Plans are being made for the expenditure of the gift and for the raising of the additional \$1,000,000 that is necessary before the gift becomes available. The university will shortly announce its plan for securing the money.

## MASSACHUSETTS

**Personal.**—Dr. George B. Magrath, Boston, has been renominated medical examiner for Suffolk County.—Dr. Benjamin Whitney Gleason, who recently resigned as member of the Athol board of health, has been appointed to the veterans' liability department, Boston.

**Harvard Board of Overseers.**—The nominating committee of the Harvard Alumni Association has selected Dr. William Sidney Thayer, Baltimore, former president of the Association of American Physicians, and Dr. Herbert Charles Moffitt, San Francisco, professor of medicine, University of California, as candidates for the Harvard board of overseers.

## MICHIGAN

**Tuberculosis Colony.**—A new colony for tuberculous patients will be located at Grand Haven, for which a company has been capitalized at \$75,000. Twenty cottages, so arranged that they will be open to the fresh air, will be in the colony, and a portion of the land will be cultivated for garden purposes so that all the vegetables used at the health haven will be grown on the property. Goat's milk will be used exclusively.

## MISSISSIPPI

**Hospital News.**—The Coahoma County Antituberculosis Society will purchase a portable cottage to be loaned to tuberculosis patients.—A new charity hospital will be erected at Meridian at a cost of \$100,000.

**Vaccination Mandate.**—According to a recent report, the Mississippi Board of Health has ordered that all persons visiting the carnival at Mobile, Ala., must be vaccinated, on account of the epidemic of smallpox at Mobile.



## NEW HAMPSHIRE

**Medical Profession Honors Members.**—A banquet was given, February 17, at the Nashua Country Club on the occasion of the seventy-fifth birthday of Dr. Alonzo S. Wallace, and to honor two other deans of the profession, Dr. Isaiah G. Anthoine, aged 76, and Dr. Alfonse W. Petit, 69. Postprandial exercises were the feature of the evening, and Dr. John M. Gile, professor of surgery, Dartmouth Medical School, Hanover, and Dr. Charles S. Walker, Keene, and Dr. Dennis E. Sullivan, Concord, president and secretary, respectively, of the New Hampshire Medical Society, were among the visiting physicians who were present.

## NEW YORK

**Child Welfare Bill.**—The state child welfare commission introduced a measure in the legislature, March 2, designed to include male children between the ages of 16 and 18 within the present law, which forbids the employment of females of that age in a factory for more than forty-eight hours a week or more than eight hours a day, and between the hours of 9 p. m. and 7 a. m.

**Personal.**—Dr. Raymond F. Kircher has been appointed district physician of Albany, to fill the vacancy caused by the death of Dr. Eddy S. Haswell.—Dr. Walter W. Palmer, Bard professor of the practice of medicine, Columbia University, New York City, has been elected a member of the administrative board of the Institute of Cancer Research, to serve until June 30, 1924.—Dr. Reuben Wilson Shelley, Newfane, has been appointed superintendent of the Niagara County Sanatorium, to succeed Dr. Walter E. Deuel.

**Lecture Course for Physicians.**—A series of twelve practical lectures, illustrated with lantern slides, will be given under the auspices of the Medical Society of the County of Kings, Brooklyn. This is an attempt to give busy practitioners, who are unable to devote the time necessary to enroll in a college, a short graduate course in medicine, covering the most interesting and most essential subjects. The first lecture was given, March 3, by Dr. John Osborn Polak, professor of obstetrics and gynecology, Long Island College Hospital, on the subject "Pelvic Inflammation in Women"; Dr. William Francis Campbell, chief surgeon, Trinity Hospital, Brooklyn, spoke on "Infection of the Hand," March 10. Dr. George D. Stewart, professor of surgery, Bellevue Hospital Medical College, New York City, will deliver the third lecture, on "The Interpretation of Abdominal Pain," March 17; March 24, Dr. Glentworth R. Butler, Brooklyn Hospital, will speak on "Cardiac Murmurs and Arrhythmias"; Dr. Roger H. Dennett, professor of pediatrics at the New York Post-Graduate Medical School, will deliver an address on "Infant Feeding," March 31. The second series will commence in October.

## New York City

**The New Hospital for Joint Diseases.**—Plans have been filed for the new home of the Hospital for Joint Diseases, which is to occupy the block front on the east side of Madison Avenue, between One Hundred and Twenty-Third and One Hundred and Twenty-Fourth streets. There will be two buildings, a seven-story hospital, the estimated cost of which is \$650,000, and a six-story service building, costing \$250,000.

## NORTH CAROLINA

**Hospital News.**—An addition will be erected at St. Peter's Hospital, Charlotte, at a cost of \$60,000, to contain operating rooms, maternity wards, nurses' homes and all modern equipment. The erection of this addition was made possible through contributions of J. H. Cutter and W. A. Erwin of \$50,000, and \$10,000 collected miscellaneous.—The contract has been awarded for the erection of the Baptist State Hospital, Winston-Salem, at a cost of \$133,690. Construction work will be started at once and the building will be completed within a year.

## OHIO

**Physician Convicted.**—It is reported that Dr. W. H. Black, aged 89, a veteran of the Civil War, has been sentenced to serve from one to seven years in the Ohio penitentiary, following his conviction on a charge of having performed an illegal operation, December 10, resulting in death.

**Endowment Fund for Medical School.**—The campaign for \$216,000, for the endowment fund of the University of Cin-

cinnati College of Medicine, to insure a gift of \$7,000,000 from the Rockefeller Foundation and \$2,000,000 from the Carnegie Foundation, contingent upon raising this sum, was brought to a close, February 14, with a total of \$224,196.

## OKLAHOMA

**Hospital News.**—A modern tuberculosis hospital has recently been opened at Talihina.

**State Medical Meeting.**—The annual meeting of the Oklahoma State Medical Association will be held at Oklahoma City, May 9-11, instead of May 16-18, as previously announced.

## PENNSYLVANIA

**Physician Acquitted.**—Judge Woodring directed the jury to return a verdict of not guilty in the case of Dr. Samuel Irvin Darnell, Easton, who was charged with committing an illegal operation.

**Personal.**—Dr. George A. Stock, Gettysburg, has been appointed assistant superintendent of the New Jersey State Sanatorium, Glen Gardner, N. J.—Dr. Ray McKelvey Alexander, Bolivar, has been appointed medical examiner of the Royal Arcanum in the state of Pennsylvania, to succeed the late Dr. William Wesley Wolfe, Pittsburgh.—Drs. George Burton Stull, Carson Coover and Arthur Leban Page, Harrisburg, have been appointed Pennsylvania Railroad surgeons.

**Social Welfare Conference.**—The annual Pennsylvania state social welfare conference was held, in February, at York. It was attended by social workers of the state engaged in philanthropic and charitable work. Dr. John M. Baldy, commissioner of public welfare of Pennsylvania, presented the plan and the scope of work for the newly organized department of public welfare. Dr. William C. Sandy, New York City, chief of the bureau of mental health, state department of public welfare; Dr. Victor V. Anderson, New York City; Dr. Ellen C. Potter, Harrisburg, director of the bureau of children, state department of public welfare; Dr. Mary R. Noble, Harrisburg, chief of the division of child health, state department of health, and Dr. Joseph H. Hart, Dudley, director of school social work for the state, gave addresses.

## Philadelphia

**Personal.**—Col. Alexander N. Stark, Medical Corps, U. S. Army, chief surgeon, third corps area, delivered the second of the series of lectures under the direction of the Seventy-Ninth Division, March 2, at the armory of the Philadelphia city troop.

**Dinner in Honor of Dr. de Schweinitz.**—The Philadelphia County Medical Society will give a dinner to the President-Elect of the American Medical Association, Dr. George Edmund de Schweinitz, at the Bellevue-Stratford Hotel, Tuesday evening, April 4.

## SOUTH CAROLINA

**Personal.**—Capt. Charles V. Akin, since 1918 officer in charge of the bureau for the control of venereal diseases in South Carolina, has been assigned to Jacksonville, Fla., to conduct field surveys in connection with the child hygiene investigations.

**Bill to Eliminate State Examination.**—It is reported that a bill was introduced in the House of Representatives, February 2, by Charles T. Smith, Jr., Richland, advocating that graduates of the South Carolina Medical College be permitted to practice their profession in that state without examination by the state board of medical examiners and be admitted to practice medicine on recommendation of the college faculty. Under this law, the medical graduates will be on the same basis as the graduates of the law department of the University of South Carolina.

**State Medical Meeting.**—At the annual meeting of the South Carolina Medical Association to be held at Rock Hill, April 18-20, under the presidency of Dr. Harry L. Shaw, Sumter, the following provisional program has been announced: Dr. Frank Billings, Chicago, will deliver the address on medicine; Dr. Thomas S. Cullen, Baltimore, will deliver the address on surgery; Dr. Marion R. Nobley, major, M. C., U. S. Army, will read a paper on "Some Anatomical Considerations of the Mastoid Process of the Temporal Bone"; Dr. William F. R. Phillips, professor of anatomy at the Medical College of the State of South Carolina, Charleston, and of the Baylor University College of Medicine, Dallas, Texas, will deliver an address; Dr. Charles J. Leamon,



Sumter, will speak on "The Diagnosis and Treatment of Toxic Goiters," and Dr. George H. Bunch will read a paper on "Acute Osteomyelitis in Children."

## TEXAS

**Hospital News.**—The new hospital being erected by the International and Great Northern Hospital Association, Palestine, at a cost of \$150,000, is nearly completed.

**Joint Medical Meeting.**—The medical associations of Austin, Burleson, Fayette, Grimes, Waller and Washington counties held a joint meeting at Brenham recently. Dr. Gustave L. Kusch, president of the Washington County Medical Association, presided at the meeting. A subdistrict association was formed and meetings will be held semi-annually, the next to occur in August, at Navasota.

**Personal.**—Dr. Houston Neeley, Beeville, has been elected president of the Southwest Texas District Medical Society. —Dr. Sterling Price Boothe, Cuero, has been appointed county health officer, to succeed Dr. Joseph R. Frobese. —Dr. George B. Cornick, San Angelo, recently gave up his practice and sailed to Russia, where he will do relief work, among the starving inhabitants, under the direction of the American Relief Administration.

## WASHINGTON

**The Seattle Surgical Society.**—At the annual meeting of the society held recently, under the presidency of Dr. Walter E. Kelton, the following officers were elected for 1922: Dr. John Hunt, president; Dr. Charlton Edward Hagyard, vice president, and Dr. Hubbard Thomas Buckner, secretary-treasurer. Dr. Henry Suzzallo gave an address on "The Surgical Society as an Education Force in the Community."

**Puget Sound Academy of Ophthalmology and Otolaryngology.**—At the annual meeting of the academy held recently, the following officers were elected for the ensuing year: president, Dr. Frederick W. Adams, Seattle; first vice president, Dr. Daniel Hughes Bell, Tacoma; second vice president, Dr. William G. Cameron, Tacoma, and secretary-treasurer, Dr. John Howard Harter, Seattle.

## WISCONSIN

**Physician Sentenced.**—It is reported that Dr. Emil C. Schoene, Milwaukee, has been sentenced to a four-year term in the state prison on a charge of second degree manslaughter.

**Personal.**—Dr. Halley A. Smith, Antioch, Ill., has been appointed assistant physician at the Wisconsin State Home for Feeble Minded, Chippewa Falls. —Dr. William J. McKillip has been appointed permanent superintendent of the bureau of venereal diseases of the health department, Milwaukee.

**Hospital News.**—At the annual meeting of the Deaconess Hospital staff, Milwaukee, Dr. George H. Fellman was elected president, Dr. Murdock F. MacRae, vice president, and Dr. Robert W. Blumenthal, secretary-treasurer. —The new addition to St. Mary's Hospital, Wausau, is practically completed and will be opened to the public early in the spring. This brings the value of the institution to approximately \$400,000. —The new hospital at Beaver Dam was opened early in February. Dedication services were held, January 29, under the direction of the local deaconess association.

## CANADA

**Personal.**—Dr. George A. B. Hall, chief medical referee of the Workmen's Compensation Board for the last five years, has resigned and will resume private practice.

**Committee of Mental Hygiene.**—The annual meeting of the Canadian National Committee of Mental Hygiene was held, February 17, in Montreal. Lady Byng and Sir Arthur Currie delivered addresses at the meeting.

**Ontario Academy of Medicine.**—At a special meeting of the academy, February 23, Dr. Frederick H. Baetjer, associate professor of roentgenology, Johns Hopkins University Medical Department, Baltimore, delivered an address on "Radiology of Diseases of Bone."

**Medical Meeting.**—At the annual meeting of the Northwestern Manitoba Medical Association, held recently, the following officers were elected for the ensuing year: president, Dr. George Clingan, Virden, and secretary-treasurer, Dr. Murrough C. O'Brien, Rosburn.

## GENERAL

**Association of American Medical Colleges.**—At the annual meeting held in Chicago, March 7, the following officers were elected: president, Dr. Charles P. Emerson, Indianapolis, University of Indiana; vice president, Dr. Irving S. Cutter, Omaha, University of Nebraska; secretary-treasurer, Dr. Fred. C. Zapffe, Chicago. The next annual meeting will be held at Ann Arbor, Mich., in 1923, at such time as may be decided by the executive council of the association.

**Southern Public Health Laboratory Association.**—The annual conference will be held, March 17-18, at Jackson, Miss., under the chairmanship of Dr. Clarence Albert Shore, Raleigh, N. C. The membership of this association is limited to directors of state, municipal and county health laboratories, but all who are interested in health laboratory work are invited to attend. Discussions will pertain to laboratory technic and to the standardization of containers and report forms.

**Donations by the Rockefeller Foundation.**—Following the decision of John D. Rockefeller to permit the general education board to distribute the principal as well as the income from its funds to colleges, the sum of \$600,000 has been given to the Northwestern University Medical School, Evanston, Ill., toward the \$2,000,000 fund now being raised; the Illinois Wesleyan University, Bloomington, Ill., received \$135,000 toward a \$400,000 fund; Lincoln School, New York City, received \$153,100 for a new building and equipment, and \$184,475 was given for negro education. Donations totaling \$1,811,666 were also distributed.

**Roentgen-Ray Laboratories Regulated.**—At a meeting of the New York Board of Health, January 26, a resolution was adopted that Article 7 of the Sanitary Code be amended by adding thereto a new section, to read as follows: Section 107. No person shall maintain, operate or conduct a roentgen-ray laboratory or advertise or hold out to the public that a roentgen-ray laboratory is maintained, operated or conducted, wherein radiographs are taken, diagnoses made or human beings examined or treated by roentgen rays, without a permit therefor issued by the board of health, or otherwise than in accordance with the terms of said permit and with the regulations of the said board.

**Bequests and Donations.**—The following bequests and donations have recently been announced:

American Society for the Control of Cancer, \$50,000, as a memorial to Harry M. Lasker, New York City, by his family.  
Tacoma General Hospital, Wash., \$40,000, by the will of Jane C. Bradley.

Columbia University, New York City, her residuary estate, in addition to a direct bequest of \$30,000 for chemical research, by the will of Cora M. Perkins.

St. Peter's Hospital, Charlotte, N. C., \$30,000, for an addition to the institution, by J. H. Cutter; \$20,000 to be used for a memorial to his grandson, by Dr. Erwin, Durham.

The Eldora Hospital, Iowa, \$10,000, from J. E. Booth, in memory of his wife; the name of the hospital to be changed to the Eldora Booth Memorial Hospital.

Mount Sinai Hospital, New York City, \$150,000; the Hebrew Orphan Asylum, the Sanatorium for Poor Children and the Lenox Hill Hospital, \$5,000 each, by the will of Alfred S. Heidelberg.

The North American Sanatorium for Children, Atlantic City, N. J., \$1,250; Home of the Merciful Saviour for Crippled Children, \$1,000, by the will of Mary C. Ihling, Philadelphia.

The Neversink Mountain Tuberculosis Sanatorium, Reading, Pa., \$960, by the commissioners of Berks County.

The Episcopal Hospital and the Pennsylvania Hospital, Philadelphia, \$100 each, by the will of Catherine C. Wentz.

Cheerfield Farm, Shelby County, Tenn., \$500, from the result of a prize contest.

Schenck Memorial Hospital, Seymour, Ind., a home for nurses, as a memorial to her husband, by Mrs. Louise Schenck.

## LATIN AMERICA

**New Officers of a Medical Society.**—The medical society of Caracas, Venezuela, recently elected the following officers: president, Dr. B. Perdomo Hurtado; vice president, Dr. V. Peña; secretary, Dr. E. González; treasurer, Dr. J. Sanabria Bruzual; librarian, Dr. Luis Rivero, and editor of the journal, Dr. D. Luciani.

**Personal.**—Dr. J. F. Medina of Mexico City has sailed for Europe, after spending several months in this country visiting hospitals in Chicago and eastern states. —Dr. A. Herrera Vegas of Caracas is now in Spain. —Dr. J. R. Risquez, a professor of the medical school of Caracas, has returned to his country after taking graduate courses in Paris and Berlin.

**The Sixth Latin-American Medical Congress.**—The *Revista de Medicina y Cirugía* of Havana brings the details of the organization of the next Latin-American Medical Congress which is to convene at Havana, Nov. 20 to 25, 1922. The



appeal is signed by Dr. Juan Guiteras as president of the committee of organization, and Dr. F. M. Fernández, Prado 105, Havana, as secretary.

### FOREIGN

**The Markham Skerritt Prize.**—The University of Bristol, England, has awarded the Markham Skerritt Prize to Sir J. Herbert Parsons, F.R.C.S.

**Fellowship for Woman Physician.**—Dr. Nellie Wall-Mesham of South Africa has been granted an international fellowship in bacteriology at Liverpool University, England.

**Medical Publisher Awarded Honorary Degree.**—One of the partners of the J. Springer medical publishing house at Berlin, F. Springer, has had an honorary medical degree conferred on him by the medical faculty of Frankfurt on the Main.

**Italian Congress for Industrial and Agricultural Hygiene.**—The fifth national congress of this kind is to convene at Florence, June 11 to 14, 1922. The six subjects appointed for discussion are hygiene of the workers in malarial districts; new and old views on lead poisoning; shifts in work; legislation on workmen's compensation; new horizons in medicosocial ethics, and prevention of medical disability.

**International Neurologic Reunion.**—Our Paris exchanges state that the Third Annual International Neurologic Reunion is to meet at the Salpêtrière at Paris, June 2 and 3, 1922, mornings and afternoons. The subject appointed for study is the symptoms from pituitary insufficiency. Roussy and Camus of Paris will discuss it from the standpoint of anatomy and pathologic physiology, and Froment of Lyons from the clinical and therapeutic standpoint.

**Abortionists in the Courts.**—In the *landgericht* at Munich recently a group of eighty-one women and girls were accused of criminal abortion, and twenty-two were condemned to prison for from six to eight months; thirty-two were condemned for from six weeks to three months as although they had tried to commit abortion they had failed; twenty were acquitted. The *Münchener medizinische Wochenschrift* adds that the medical abortionist is to be tried by a jury.

**The National Medical Association of China.**—The annual conference of the association was held, January 21 to February 4, in Shanghai, under the presidency of Dr. C. Voon-ping Yui, Shanghai. Dr. Hata; Dr. Shiga, director of the government medical school, Seoul; Dr. Edward Hume of the Hunan-Yale College of Medicine, Changsha, and Prof. Harold Balme, F.R.C.S., dean of the Shantung Christian University School of Medicine, Tsinanfu, author of "China and Modern Medicine," were among visiting physicians who attended the session. Dr. E. S. Tyau, Shanghai, and Dr. Shchuan, Peking, are vice presidents; Dr. W. S. New, Shanghai, is the English secretary-treasurer, and Dr. E. P. Hsieh, Peking, is the Chinese secretary of the association.

**The Social Hygiene Dispensary at Bordeaux.**—THE JOURNAL mentioned last spring the laying of the cornerstone of the antituberculosis dispensary presented by the Rockefeller Foundation to the Protestant Hospital at Bordeaux. The dispensary is now completed, and the *Journal de Médecine de Bordeaux* gives illustrations of the institution and describes its scope and the ceremony of its inauguration. It is at Bagatelle, at the city limits. The regular program includes hygiene of the respiratory passages, Tuesday and Friday afternoons; hygiene of infants, Wednesday afternoon; hygiene of the pregnant, Friday afternoon, and roentgen rays, Tuesday and Friday mornings. The new training school for nurses, the American memorial to the nurses who lost their lives in the war, is well along in its construction.

**Reciprocity in Degrees with Italy.**—There has been considerable agitation in Italy recently in regard to accepting credentials as to medical degrees from countries which do not accept Italian degrees. At the Congresso Federale degli Ordini, held at Rome in 1920, it was voted not to accept the credentials even when the degree had been conferred by an Italian university, if the candidate's country did not accept Italian degrees. In spite of these protests, the Italian government has recently registered Dr. E. Renold of Porto Maurizio, close to the French border, and the *Riforma Medica* states that the organized physicians in that district, forming the "Medical Order," have appealed to the profession at large to have nothing to do with this Dr. Renold, and have appealed to the pharmacists to refuse to dispense his prescriptions. At the same time, the *Rivista della Stampa Medica* announces an official communication from the Soviet government of Russia agreeing to accept reciprocity with Italy. It is signed by Samascko, commissioner of public health.

### Deaths in Other Countries

Dr. G. C. Bright, last surviving son of Dr. Richard Bright, at Cannes, France, January 21, aged 81.—Dr. T. F. Pedley, January 13, at Rangoon, Burma.—Dr. Lovel Moss, ophthalmologist, Algieras, died in a hospital at Gibraltar, January 24, from injuries received when the car in which he was driving was struck by a troop train.—Dr. D. Gorokhoff, professor of surgery and gynecology, University of Moscow, from epidemic encephalitis.—Dr. Vincenzo Guilfrida-Ruggeri, professor of anthropology, University of Naples, December 21.—Dr. W. H. Robinson, major general, Indian Medical Service, sanitary commissioner for the government of Bengal, in Calcutta, aged 58.—Dr. F. Pecirka, professor of skin and venereal diseases at the University of Prague, vice president of the national public health service, aged 63.—Dr. V. E. Núñez of Buenos Aires, lieutenant-colonel in the medical service of the army, and director of the *parque sanitario*.—Dr. M. Perrin of Avenches, Switzerland.—Dr. C. Secretan-Mayor, the dean of the profession in Switzerland, aged 87.—Dr. J. de Giacomi, instructor at Berne, known by his stain for certain bacteria.—From Haiti comes the notice of the deaths of Dr. A. Mucci and of Dr. J. Fleury, the latter medical officer of the port of Port-au-Prince.—Dr. E. Chappet, dean of the profession at Lyons, aged 97.—Dr. G. Ernest, physician to the Association des Journalistes Parisiens.—Dr. E. Rivière of Paris.—Dr. S. Khoury, medical officer of the Suez Canal Company.

## Government Services

### Watson-Dyer Bill Approved by Secretary Mellon

The Watson-Dyer bill, giving a permanent status to reserve officers of the U. S. Public Health Service, has attained additional advancement as a result of its approval by Secretary of the Treasury A. W. Mellon. In a formal letter to Senator McCumber, chairman of the Senate Committee on Finance, before which the bill is pending, Secretary Mellon thus endorsed the measure:

The uncertainty of the tenure of office among the reserve medical officers tends to create an unrest among them and detracts from the efficiency of their services. This uncertainty prevents foresighted doctors from providing for prudential consideration of their future and those who are able to find opportunities in private practice will leave the Service. Furthermore, it is reasonable to suppose that such opportunities of leaving the Service will come most frequently to the most skilled and efficient.

In my opinion some legislation should be enacted to provide for permanent tenure of office for a limited number of these medical men. In view of the fact that such physicians will necessarily have to be subject to change of station and financial hardships of temporary residence and the inability to engage in private practice, I know of no better way than to authorize the transfer to the regular commissioned corps of a limited number of these officers along the lines proposed in the bill under discussion.

I am mindful of the fact that the government desires to furnish to the disabled man and woman the very best medical service. It is an obligation of the government which is now being met by approximately 1,000 medical men, who are themselves veterans of the World War. I am, therefore, also mindful of the fact that the government has some obligation to the medical veterans now in the Public Health Service. This obligation of the government will be provided for in the bill which you have submitted.

Secretary Mellon suggests a modification of the bill so that, instead of 550 reserve officers being transferred to the permanent corps, the number will be reduced to 350. Thereafter, should additional doctors be required, further legislation may be enacted. In concluding his endorsement of the measure, Secretary Mellon points out that it will not require any increase in appropriations of government funds. The bill has already been endorsed by Director Forbes of the Veterans' Bureau and by the American Legion in its annual convention at St. Louis.

### Second Deficiency Bill

A second deficiency bill for the present fiscal year has been presented to the House of Representatives by the Appropriations Committee. The measure carries an appropriation of \$93,993,112 additional for the U. S. Veterans' Bureau, divided thus: \$73,714,182 for vocational training of ex-service men and \$20,278,930 for medical and hospital supplies. This makes a total for the U. S. Veterans' Bureau for the year of \$178,714,182 for vocational training, and of \$78,278,930 for medical and hospital services.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Feb. 13, 1922.

#### School Clinics

A special course of instruction for school medical officers and physicians desiring to undertake the work of school clinics on a part time basis has been inaugurated at the London Hospital. Sir George Newman, principal medical officer of the ministry of health, delivered an opening address. The course, he said, presented rare opportunities and was of peculiar interest. One of the difficulties experienced in the school medical service was in drawing the attention of the whole and part time school medical officers and assistants to the fact that, fundamentally, the service must rest on a clinical basis, if it was to be a success. He emphasized this fact, because it was difficult to retain the clinical spirit when a man became an administrator. He was anxious that physicians throughout the country should understand a little more fully what the school medical service was and what it involved. Without universal military service, we could not get particulars of the physical condition of adults, but we now had got hold of the children by means of the school medical service. That service has grown until now some 2,250,000 children are medically inspected every year, receiving treatment when necessary. It has been found that it is not practicable for private physicians to treat complaints of the eye, teeth, ear, nose and throat (including removal of adenoids) and the skin, and various minor ailments. The government has been compelled to take up these branches of medical work among schoolchildren and to provide for them either in hospitals or in school clinics. Disease in the child was of great importance. If the State could solve the problem of the child's health, it could solve the problem of the national health, because, fundamentally, it was in the child that we had the opportunity to prevent disease in the nation. If the problem was not dealt with, we should never pick up the lost threads. If it were dealt with, we should turn off the tap of a great deal of disease. In childhood, not only could disease be prevented but how to avoid disease could be taught also. Infant mortality was perhaps the most sensitive index of the health of a nation; in fact, it was more sensitive than the death rate. Love of personal hygiene is a vastly greater preventive of disease than the various external forms of sanitation. Nine hundred school clinics have been established throughout the country. He could not conceive a more valuable preparation for students and for physicians than the course which was about to be started.

#### White Lead Poisoning in New South Wales

The Board of Trade of New South Wales has issued a voluminous report on an inquiry into the question whether white lead is so injurious to painters that its use should be regulated or prohibited. The board states that white lead is usually a basic carbonate of lead, though a basic sulphate is sometimes used. The poisonous qualities of a lead compound are determined, first by the size of the particles and consequently by the ease with which they can be disseminated through the air, and second, by their solubility in the body fluids. Lead carbonate and lead sulphate produce toxic symptoms when given in quantities of 0.1 gm. per kilogram of body weight per day. The chief cause of lead poisoning is dust or vapor. Inhalation of lead dust is more dangerous than ingestion. In the case of painters, there is no danger from lead vapor, since the vapor pressure of lead salts at room temperature is practically nil. Lead may be ingested

in industrial conditions, but it is rendered insoluble in the stomach and the greater part is passed out in the feces. The lead dust enters the lungs and in due course is absorbed by the phagocytic cells without producing fibrosis. It is carried by the blood and deposited thereby in the tissues. It is eventually excreted by the bowel and to a slight extent, by the kidneys. Evidence given by Professor Chapman and Dr. S. A. Smith showed that lead remains stored in the tissues for a long time. They found it postmortem in the lungs of miners who worked at Broken Hill and had died from other causes. Under the conditions in the painting industry, absorption through the skin is negligible. Some important evidence was given by the technical commission of inquiry at Broken Hill, showing how slowly toxic symptoms develop in men exposed to lead dust. The following table is illustrative:

Length of Exposure to Lead	Number of Men	Showing Symptoms of Lead Poisoning Per Cent.	Not Showing Symptoms Per Cent.
Under 10 years.....	741	9.3	31.7
10 to 20 years.....	544	12.5	87.5
20 to 30 years.....	289	33.0	67.0
Over 30 years.....	123	26.0	74.0

In England, Dr. Legge, chief inspector of factories under the Home Office, showed that lead dust produced in the process of rubbing down painted surfaces before a fresh coat is applied is responsible for the dust which causes poisoning in painters and that exhaust ventilation is the proper mode of combating the danger from lead dust. Among the miners at Broken Hill, lead poisoning has been found in 9 per cent. of those exposed to dust containing lead sulphid and oxid. A trial of the regulations in force in Great Britain for the avoidance or removal of dust or spray containing lead is recommended. If they fail, prohibition must be introduced.

#### A Diploma in Tuberculosis

The Welsh National School of Medicine has established the first diploma in tuberculosis in this country. The diploma is in connection with the tuberculosis chair recently founded at the school by Major David Davies, M. P., and now occupied by Prof. Lyle Cummins. The new diploma will be a guarantee that its possessor has devoted a certain amount of time to the special study of tuberculosis and has passed a standard examination. Physicians with five years' experience as whole time workers at tuberculosis may present themselves for the examination without further courses of study. This should stimulate them to extend their reading beyond their immediate work. It is also hoped that the initiative of the University of Wales may be followed by other universities. If this occurs, it may be anticipated that, in a few years, only possessors of the diploma will have any chance in competing for a tuberculosis appointment. This would definitely raise the standard of tuberculosis work in the country.

### PARIS

(From Our Regular Correspondent)

Feb. 10, 1922.

#### Professor Moureu's Impressions of the United States

One of our most learned chemists, Monsieur Charles Moureu, professor in the Collège de France and well known for his researches on the chemistry of rare gases, who, during the war, devoted all his time and energy to supplying the Frency army and the armies of the allies with new asphyxiating gases, has recently been spending some time in the United States, where he went as technical expert to the Commission des gaz asphyxiants. It was interesting to us to learn what impressions he received during his sojourn. Monsieur Monreu states that the chemical industry of the



United States has undergone a tremendous development of late, and that, inside of ten years, it will surpass the German industry. Dyes and rare gases are, he says, made the subject of careful study in the magnificent laboratories found in the universities and in the large American manufacturing plants. At Harvard University, Monsieur Moureu attended one of the meetings of the university professors which take place every week at which they discuss their researches, show what they are working out and invite the criticism of their colleagues. He found this a very ingenious method of conducting researches and one which seemed to promise excellent results. Moureu expressed his admiration for the University of Columbia in New York City.

#### Death Resulting from Painting a Tonsil with Tincture of Iodin

Dr. Mounier recently published in the *Journal de médecine de Paris* the report of a case which gives further evidence of the possible harmful effects of inconsiderate applications of tincture of iodine, especially if it is old. Dr. Mounier was called by a confrère in consultation in regard to one of his woman patients who, while suffering from sore throat, had painted the left tonsil extensively with tincture of iodine. Three days afterward, an examination of the throat revealed a mass of gangrenous tissue covering the whole left tonsillar region and a portion of the veil of the palate. In front and on the velum, the gangrene was confined to the surface, but the posterior pillar was sloughing off in shreds. The lesions were very deep at this point, and with the laryngoscope an edema of the left lateral portion of the epiglottis was noted. Under the influence of local treatment the condition seemed to improve somewhat during the first twenty-four hours, but the day following the temperature rose suddenly to 39.5 C. (103.1 F.). The local condition appeared better in that the lesions had not gained in extent or depth, but all the ulcerated surface was covered with a thick white coat which suggested diphtheria. An antidiphtheritic serum was injected immediately, and, as the gravity of the case was recognized, it was decided to transfer the patient to a hospital, where she could be given better care. The following morning, while the preliminary preparations were being made for her removal to the hospital, the patient suddenly died without giving any evidence of respiratory difficulty. As a necropsy was not performed, it is difficult to speak positively in regard to the immediate cause of death, which seemed to be due to an embolism or to toxic phenomena. From statements made by the patient and the family, it seems that the tincture of iodine was not fresh and that the tincture had been applied twice. This unfortunate woman, who was in the thirties, had never been seriously ill in her life and seemed to be in perfect health up to the onset of the sore throat which caused her to use the iodine.

#### Paying Patients in the Hospitals of Paris

At a recent meeting of the Syndicat médical de Paris, Dr. A. Lapointe read a report on the admission of patients who were possessed of means to the various establishments of the Assistance publique de Paris. He mentioned, in this connection, two changes that have been introduced by the administration of the Assistance publique. The first consists in applying the Breton tariff, which regulates the medical fees chargeable in the roentgenographic laboratories of the hospitals for the treatment of patients suffering from industrial accidents, to all patients whom the administration considers to be sufficiently supplied with funds as not to be entitled to receive gratuitous service. As far as the roentgenographic laboratories, at least, are concerned, the administration has decided to make a charge for medical attendance and thus erect a sort of barrier to prevent the improper use of these laboratories by patients with means. The second innovation

is, unfortunately, far from being as satisfactory to the medical profession. The director of the Assistance publique has issued instructions to the superintendents of hospitals to establish a strict control in the consultation services with a view to exacting the regular fees from persons who are able to pay (the schedule is fixed at 4 francs). As Lapointe points out, the profession does not understand why a medical procedure which is charged for when it is performed by a roentgenologist is rated at zero when it is performed by a physician or surgeon. It is held by many that this innovation, far from driving away patients who have means, will rather attract them, for why should they refuse to take advantage of hospital consultations that are open, without restriction, to any one who will pay a registration fee of 4 francs? The direct outcome has been that the Syndicat médical de Paris has issued a protest against the decision which accords to patients of means free access to hospital consultations by merely paying to the administration a nominal registration fee without any further charges for medical attendance.

The syndicate holds that, in principle, the hospitals of the Assistance publique should be reserved for patients who are without funds. Regretting that this principle is not plainly written into the law and taking account of the difficulties that its strict application might engender, the syndicate considers one of the best ways of solving the problem is to exact not only a registration fee from patients with means but to make a charge for medical attendance as well. It is thought that this method will materially reduce the number of patients soliciting medical attendance in the hospitals of the Assistance publique when they in reality have sufficient means to secure treatment elsewhere.

#### Death of Dr. E. Rivière

Dr. Emile Rivière of Précourt, founder and president of the Société préhistorique de France, died recently in Paris, aged 87. After studying medicine and spending a few years in the field of medical journalism, Emile Rivière devoted his whole life to paleontology and prehistory. His numerous works on these subjects, more particularly the excavations that he undertook in the grottoes of Menton, where he brought to light several fossil human skeletons which are now preserved in the Museum of Natural History in Paris, and also his explorations in the caverns of the Central Plateau, procured for him a worthy reputation in the scientific world.

#### A Rare Complication of Malaria

Dr. Braquehay of Tunis has recently called attention, in the *Revue tunisienne des sciences médicales*, to a rare complication of malaria that he had an opportunity of observing, during the war, in the Serbian soldiers that were hospitalized in one of the hospitals of Tunis. When admitted, the patients presented paroxysms of mammary congestion. At every attack, at the moment of the onset of the fever, the mammary gland enlarged and became painful, sometimes on one side and sometimes on both sides. Clinically, the symptoms recalled those of mammitis in adolescents. The patients were, furthermore, young men, aged from 20 to 25. Under the influence of injections of quinin and moist compressive dressings applied to the mamma, the congestion retrogressed rapidly. Braquehay has been unable to find in the treatises devoted to malaria any reference to such symptoms.

#### Opening of the Ecole du Val-de-Grâce to Civilians

The minister of war has announced that, from now on, physicians, pharmacists and civilian students will be permitted to pursue courses of study and to take advantage of the resources of the museum and the library of the school of application of the military sanitary service of the Ecole du Val-de-Grâce.



## MADRID

(From Our Regular Correspondent)

Jan. 30, 1922.

### German Professors in Spain

Two roentgenologists, Chaould of Munich, and Warnekros of Berlin, accompanying the physicist Freidrich, have come to Spain at the invitation of Professor Otero, a gynecologist of Granada, who has organized in his institute a course in theoretical and practical roentgenography. The first lectures were delivered by Dr. Recasens, professor of gynecology and dean of the Madrid Medical School. When the course was over at Granada, these professors gave lectures in Madrid. Professor Friedrich defined the different elements involved in roentgenotherapy, explained the roentgen spectrum, its analogy to the light spectrum, and how he, together with Knipping, had demonstrated the correctness of Lauer's theory, as to the diffraction of the several rays of the roentgenographic spectrum, which enabled him later to discover the third electron in the atom of lithium. He explained his substitution of lineal squares to demonstrate solar diffraction for prisms made from several crystal salts; as, for instance, sodium chlorid, the atoms of which have a structure which modifies roentgen-ray radiations and makes visible, on the one hand, the complexity of these radiations and, on the other, the arrangement of the atomic elements. Professor Chaould devoted a session to the exhibition of several roentgenograms of the duodenum, with the patient in a recumbent position. The portion photographed lay half way between the ventral and the right lateral decubitus, pressure being exerted on the abdomen to create a temporal occlusion of the distal portion of the duodenum or proximal portion of the jejunum. This permits a good view of the duodenum and shows the typical nests of cancers, diverticula, stenoses, etc. Professor Chaould's second conference was devoted to an exhibition of a device in which the patient who is to be roentgenographed is placed. It is a box lined with a very thick coat of paraffin. This coat is for the purpose of generating secondary rays to compensate those lost on the way to the patient because of the distance of the ampule. This device saves time in centering on the focus a definite quantity of radiation. Professor Warnekros presented, in his first lecture, a beautiful collection of roentgenograms of pregnant women. They show most admirably the fetus and permit following of the actions of the forces acting on it during labor. They demonstrate that in normal presentations the fetal position is the best adapted to preserve physiologic normality. The head is not dislocated, nor the spinal column pressed down. Everything is prearranged so as to save the baby trouble. In all other positions, it is otherwise: in all of them the fetus suffers. In his second lecture, Professor Warnekros commented on the results obtained with roentgen-ray treatment of cervical cancer of the uterus as practiced by him in Bumm's clinic in Berlin. He stated that his greatest success had been secured by combining radical surgery with preventive roentgen-ray and radium treatment.

### Sauerbruch Lectures on Cineplastics

Professor Sauerbruch of Munich has given several lectures in Madrid, two of them at the medical school. In his first lecture, he exhibited an artificial hand of his own designing, which is a mechanical wonder, inserted in two tunnels made in the biceps and triceps muscles. Crippled individuals, after some training, succeed in controlling the hand and make all kinds of motions, as Sauerbruch actually demonstrated in a former soldier. This man, who had lost both hands, moved the artificial hand in a most wonderful way, picking coins from the ground, rolling cigarets, writing, etc. Sauerbruch's trip, precisely at the time when the

Moroccan campaign was claiming many victims, has brought hope and relief to several crippled soldiers. In another lecture, Sauerbruch dealt with the results of lung surgery.

### Voronoff Lectures in the Madrid Medical School

Dr. Voronoff, of the physiologic station of the College of France, has given, in the Madrid Medical School, a lecture on organ transplantation. As available material, Dr. Voronoff recommended: (1) organs of persons dying through accidents, since there is a difference of several hours between the death of the individual as a whole and that of tissues and organs; (2) organs furnished voluntarily; as regards thyroid transplantation, donors usually are mothers; in the case of testicular grafts, they might be obtained from patients with cryptorchidism; (3) material taken directly from anthropoid apes, such as the gorilla, chimpanzee and orangutan. Organs removed from apes and grafted by Voronoff in man have "taken" and performed several functions with better results than those of human origin. This is perhaps due to the fact that the organs of the former are younger and perhaps stronger. Voronoff has had such success that he is urging the creation of farms devoted to the growth of anthropoid apes. These animals could render great service, since the analogy of their plasma with that of man permits its use in many ways in human medicine.

## PRAGUE

(From Our Regular Correspondent)

Feb. 1, 1922.

### National Council on Social Hygiene

January 21, a meeting of the National Council on Social Hygiene took place in Prague. The council was formed a year ago on the initiative of Miss Alice G. Masaryk, the president of the Czechoslovak Red Cross, and of Prof. Selskar M. Gunn of the Rockefeller Foundation. The council represents a federation of eight of the most prominent private health and social agencies. The ministries of health and social welfare are represented in the council in an advisory capacity. The efforts of the last year have been spent largely on matters of study and organization. The council deals only with such things as have been delegated to it by the participating organizations. The question of the training of the health personnel was referred to the council last year and, through a committee, a revised schedule for a school already existing in Prague was worked out. Since the organization of the council, it has been felt that it must serve as a new channel for providing finances to the organizations which are members. The creation of the republic was followed by the speedy development and foundation of new private associations. The state, through its subsidies, was largely instrumental in their creation. Therefore, the associations grew more rapidly than their natural resources allowed. When the wave of economy swept the state, it became more difficult to get assistance from the government, and the private associations had to look to themselves to provide the necessary money. The result has been a great number of public drives, and every opportunity has been used for collecting money. It was quite natural that the public should resent this, and finally the associations became dissatisfied because the output of the collections grew smaller and smaller as the collections and drives became more numerous. At the meeting referred to above, it was decided that next year only two nation-wide drives would be held, and that the income from the drives would be divided on the basis of the expenditures of the different organizations for the previous year. In addition, the council will ask the government to grant for its purposes the receipts of a state lottery and to issue stamps and postcards for its benefit. For the purposes of better mutual information, a quarterly bulletin will be issued, in



which the activities, proposals, etc., of the organizations will be summarized. Whereas 1921 brought about the coordination of the central organizations, it is now planned to extend the idea of coordination into the field, during 1922. A special committee for the coordination of child welfare work is being considered. It is generally admitted that the creation of the National Council of Social Hygiene, which term in Czechoslovakia has a much broader meaning than in America, has been one of the strongest contributions toward the development of health activities in the country during the last year.

#### Public Health Nursing

There is a great need of public health nurses in Czechoslovakia. The steadily increasing number of tuberculosis dispensaries and child welfare stations is causing a more and more urgent demand. At the present time, there is no center for the training of such workers in the country. The state school for nurses in Prague, which is now under the direction of Miss Parson of the American Red Cross, was reorganized two years ago, but has facilities and courses for the training of bedside nurses only. On the initiative of a group of influential sociologists, a school of social work was created in Prague late in 1918. The graduates of this school have had considerable difficulty in finding places for which their training has fitted them. It was only natural that they accepted positions in dispensaries when there were no positions as public health nurses open. Experience showed, of course, that their education was insufficient to prepare them for public health work. This state of affairs caused the directors of the school for social work to reorganize it so that both public health nurses and social workers could be trained in the same school. The reorganization has been carried out, but the results are not satisfactory. The prominent health workers feel that the pupils are getting very little practical experience for their future task and think that a combination of a school for public health nurses with a school for bedside nurses is more desirable than a combination with a school for social workers. On the other hand, it would be advantageous if a school combining the training of a public health nurse and that of a social worker could be established. This would be particularly desirable for smaller communities, especially those which cannot afford to pay two school personnels. There is a tendency on the part of health workers toward the creation of a new school for public health nurses in close connection with a school for bedside nurses. This will probably not be established in Prague, so it will not interfere with the development of the Prague school of social service.

#### BERLIN

(From Our Regular Correspondent)

Feb. 4, 1922.

#### Departure of the American Quaker Mission

After having spent two years in Germany, during which time they have done a great deal of good, the Quakers have now taken their departure. Some of them are returning to America and some intend to go to Russia, where they will create a new organization for the aid of starving Russian children. During their two-year sojourn in Germany, the Quakers have distributed 350 million meals to German children and mothers. Whereas in the beginning only 10,000 meals per day were distributed, the relief work of the Quakers has grown until now about 600,000 meals are being served daily. In Berlin alone, 37,000 meals are given, in the suburbs about 40,000 meals, and if the system continues in vogue until July of this year it is thought that, on an average, 500,000 children and 50,000 mothers will be thus aided. Though the Quakers are leaving the country, the work that they established is to be continued in very much

the same form. The administration of affairs will be placed in the hands of the executive committee for foreign assistance, and the meals will continue to be served in the various cities and districts through the aid of the schools and with the cooperation of the teachers and various public welfare societies. The food distribution was made possible by the foundation established two years ago by Herbert Hoover and it has been kept up by constant subscriptions. The German-Americans have now taken over the work and have founded the so-called three million dollar fund and have guaranteed that the children will continue to be given this supplementary feeding until July, at least. The name of this foundation has, for German ears, a somewhat startling sound when one stops to consider the value of the dollar in German money. But it must be remembered that 500,000 meals per day are to be served; that the foodstuffs, cocoa, lard, flour and sugar, are all brought from America and that the children pay nothing whatever for the meals. The small sum of 25 pfennigs (lately increased to 60 pfennigs), which is paid by children whose parents are able to pay something, is used only to cover the cost of the local administration; but the expense of the food and all transportation costs are borne by the fund. In the cases of some children the increase in weight has amounted to 22 pounds (10 kg.). The selection of the children is made without reference to social position, religion or the financial condition of the parents.

#### STATISTICS ON THE CAUSES OF DEATH FOR THE STATE OF PRUSSIA DURING THE WAR YEARS, 1916-1918

Year	Deaths in Prussia	Deaths Among the War Injured
1913.....	620,455	.....
1914.....	766,828	101,227
1915.....	902,025	238,758
1916.....	787,669	170,977
1917.....	848,479	143,480
1918.....	1,015,660	182,824

Leaving out of consideration the deaths due to the direct action of force (war injuries), there are four main causes of death (diseases) that have left their stamp on the mortality during the three years 1916 to 1918, inclusive. These are: (1) influenza; (2) pneumonia, which is so closely associated with influenza; (3) tuberculosis, and (4) senility, so far as old age may be regarded as a distinct disease.

Deaths from influenza in 1913 were: 3,010 (0.72 per 10,000 of population); in 1914, 3,121 (0.74); in 1915, 4,016 (0.95); in 1916, 4,249 (1.01); in 1917, 4,411 (1.04), and in 1918, 120,612 (28.43).

Deaths from pneumonia in 1913 were: 50,084 (12.03); in 1914, 50,002 (11.84); in 1915, 53,886 (12.76); in 1916, 55,542 (13.15); in 1917, 63,803 (15.04), and in 1918, 107,965 (25.45).

Deaths from tuberculosis in 1913 were: 56,861 (13.65); in 1914, 58,577 (13.87); in 1915, 61,006 (14.45); in 1916, 66,544 (15.76); in 1917, 87,032 (20.52), and in 1918, 97,581 (23.00).

Deaths from senility in 1913 were: 65,442 (15.71); in 1914, 71,783 (17.00); in 1915, 76,489 (18.12); in 1916, 82,291 (19.49); in 1917, 99,517 (23.46), and in 1918, 92,965 (21.91).

Disregarding the deaths from war injuries, to these four causes were due, in the years 1916 and 1917, more than one third, and, in 1918, more than one half of the total number of deaths.

The war, with its baleful effects resulting from the food blockade, the scarcity of coal, the lack of physicians, the lack of medical remedies, etc., exerted a decisive influence in bringing about an increase of deaths due to the four named causes—even though we leave the malignity of the influenza epidemic entirely out of account.



## Marriages

**WILLIAM H. WOOLSTON**, Chicago, to Miss Alice Marie Gilmore of Detroit, at Evanston, Ill., February 24.

**LEWIS WILBUR ALLEN**, Westport, N. Y., to Miss Bardwell Field of Greenfield, Mass., February 25.

**WARREN ENCELL McCRARY**, Lake City, Iowa, to Miss Mary Ashton in Clarion, Iowa, November 28.

**EDWIN G. BANNICK**, Wilton Junction, Iowa, to Miss Vesta Meredith of Atlantic, Iowa, recently.

**GEORGE THOMAS RANKIN**, Akron, Ohio, to Miss Maude Foard of Chicago, February 25.

**ALBERT R. TORMEY**, Madison, Wis., to Miss Beatrice Barnes of Milwaukee, January 18.

## Deaths

**Edward Mussey Hartwell**, Boston; Miami Medical College, Cincinnati, 1882; secretary of the statistics department, City Hall, Boston; died, February 19, at Jamaica Plain. Dr. Hartwell was born in Exeter, N. H., in 1850, and received his Ph.D. at Johns Hopkins University, Baltimore, 1881; former vice principal of the high school at Orange, N. J., and teacher at the Boston Latin School; associate physical training, and director of the gymnasium at Johns Hopkins University, 1879-1880; chairman of the Massachusetts Commission for the Blind; served as special expert agent of the U. S. Department of Labor in Europe, 1888-1889; member of the Boston Society for Medical Improvement and the American Statistic Association.

**Daniel McMartin Stimson**, New York; Medical Department of Columbia College, New York City, 1868; formerly visiting surgeon to St. Peter's Hospital, and the Alms House and Lunatic Asylum, Albany, N. Y.; attending surgeon Presbyterian Hospital, Mount Sinai Hospital, New York Skin and Cancer Hospital, and other institutions; formerly professor of anatomy, Woman's Medical College, New York; member of the Medical Society of the State of New York; died, February 21, aged 78, from senility.

**Frank Byrnes** ☉ Chicago; Rush Medical College, Chicago, 1894; clinical professor of surgery, Bennett Medical College, Chicago; formerly on the staff of the Cook County Hospital; formerly assistant professor of anatomy, Rush Medical College, and instructor in surgery at the Illinois Medical College, Chicago; died, February 1, at the John B. Murphy Hospital, aged 59, following an operation for carcinoma of the bladder.

**Joseph Ward Battershall**, Attleboro, Mass.; College of Physicians and Surgeons in the City of New York, 1874; member of Medical Society of the State of New York; specialized in roentgenology; formerly physician in the Pacific Mail Steamship service and physician in the British emigration service in London, Australia and China; died, February 24, aged 79.

**Leona Estelle Todd** ☉ Willard, N. Y.; Cornell University Medical College, Ithaca, N. Y., 1905; formerly physician at the Memorial Hospital, Worcester, Mass., the Hudson River State Hospital, Poughkeepsie, N. Y., and the Buffalo State Hospital, Buffalo; member of the American Medico-Psychological Association; died, February 21, aged 51.

**Simeon A. Pennington**, Port Arthur, Texas; Medical Department, University of Nashville, 1900; former member of the Louisiana state legislature; specialized in ophthalmology, otology, laryngology and rhinology; died, February 16, aged 45, in the Mary Gates Hospital, following an operation for appendicitis.

**Heber Bishop**, Boston; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1882; formerly on the staff of St. Thomas' Hospital, London, England; member of the College of Physicians and Surgeons, Montreal; surgeon, C. A. M. C., Quebec, since 1882; died, February 20, aged 63, from heart disease.

**Marshall Ford Morris**, Atlanta, Ga.; Medical Department of Emory University, Atlanta, 1916; member of the Medical Association of Georgia; on the staffs of the Grady Hospital, the Georgia Baptist Hospital and the Davis-Fischer Sanatorium; died, February 18, aged 27, from heart disease.

**John Andrews Ballard**, Galesburg, Ill.; Chicago Medical College, Chicago, 1868; formerly surgeon of the Burlington and Milwaukee Railroad, La Crosse, Wis.; veteran of the Civil War; died, February 18, aged 80, in St. Mary's Hospital, from heart disease.

**Joseph Watson Martindale** ☉ Camden, N. J.; Jefferson Medical College, Philadelphia, 1895; secretary and historian of the Camden City and County Medical Societies; member of the Philadelphia Medical Society; died, February 22, aged 57, from pneumonia.

**J. H. Tripp**, Tullahoma, Tenn.; University of Tennessee College of Medicine, Memphis, 1885; Confederate veteran; in 1905 organized the Tullahoma Cavalry, First Tennessee Regiment, and served as captain of the company; died, February 10, aged 79.

**John Jason Owen**, Newcomb, N. Y.; Dartmouth Medical School, Hanover, N. H., 1894; member of the Medical Society of the State of New York; died, February 16, aged 55, at Moses-Ludington Hospital, Ticonderoga, N. Y.; from pleuropneumonia.

**Lewis Lee Thompson**, Gridley, Calif.; University of California Medical School, San Francisco, 1902; former health officer of Butte County; at one time served as surgeon, U. S. Navy; died, February 16, aged 45, following a long illness.

**Neill Duncan MacArtan**, Tucson, Ariz.; North Carolina Medical College, Charlotte, 1909; first lieutenant, M. C., U. S. Army, retired; medical officer in charge of U. S. Public Health Service Hospital No. 51; died, February 8, aged 38.

**Theodore Frickenstein**, Brooklyn; New York Medical College, 1864; member of the Medical Society of the State of New York; practitioner in Brooklyn for more than half a century; died, February 22, aged 87, from heart disease.

**Wyatt Reid Arnold**, Bedford, Va.; College of Physicians and Surgeons, Baltimore, 1886; member of the Medical Society of Virginia; died, January 21, at the Lewis-Gale Hospital, Roanoke, aged 56, from tuberculosis.

**Adrian Young Reid**, New York; Medical Department of the University of the City of New York, 1880; member of the Medical Society of the State of New York; died at Pleasantville, N. Y., February 18, aged 73.

**James Woodbury Twombly**, Stoughton, Mass.; Medical School of Harvard University, Boston, 1911; died, February 21, aged 37, at the Massachusetts Eye and Ear Infirmary, following an operation for mastoiditis.

**William Rice Marshall**, Cleveland, Tenn.; Medical Department University of Nashville, Tenn., 1887; member of the Tennessee State Medical Association; died, February 17, aged 69, from cerebral hemorrhage.

**John N. Phifer**, Chicago; St. Louis Medical College, St. Louis, 1878; practiced in Shumway, Ill., for forty years; died, February 26, at the Washington Park Hospital, aged 73; from uremia, following an operation.

**Merchant R. Billington**, Chittenango, N. Y.; Castleton Medical College, Castleton, 1860; coroner of Madison County for fourteen years; member of the state legislature, 1877; died, February 15, aged 86.

**Harry N. Chamberlain**, Chicago; Jenner Medical College, Chicago, 1904; was found in a hallway suffering from a fractured skull, and died, February 24, aged 42, at the Cook County Hospital, Chicago.

**Henry Augustus Reynolds**, Worcester, Mass.; Medical School of Harvard University, Boston, 1864; formerly city physician of Bangor, Me.; veteran of the Civil War; died, February 13, aged 82.

**William N. Williamson**, Indianapolis; Medical Department of Butler University, Indianapolis, 1880; president of the Northwestern State Bank; formerly a schoolmaster; died, February 21, aged 67.

**Harry Crawford Many**, Honesdale, Pa.; Jefferson Medical College, Philadelphia, 1897; formerly served as assistant surgeon, M. C., U. S. Army, Manila, P. I.; died, February 17, aged 45.

**Augustus E. Ackerson**, Jersey City, N. J.; Medical Department of the University of the City of New York, 1892; was

☉ Indicates "Fellow" of the American Medical Association.



found dead in bed, February 23, from gas asphyxiation, aged 51.

David F. Wilson, Hampton, Ark.; Arkansas Industrial University Medical Department, Little Rock, 1891; member of the Arkansas Medical Society; died, January 28, aged 60.

Charlotte Hooker Fay, Chicopee Falls, Mass.; Women's Medical College of Pennsylvania, Philadelphia, 1883; formerly a school teacher; died, February 15, aged 69.

York Russell, New York; Howard University School of Medicine, Washington, D. C., 1898; member of the Medical Society of the State of New York, died recently.

Darwin Crawford Smith, Lewistown, Pa.; Homeopathic Medical College of Philadelphia, 1869; died, February 12, aged 75, from fatty degeneration of the heart.

John Orel Meyers, Chicago; Bennett Medical College, Chicago, 1912; member of the Illinois State Medical Society; died, February 22, aged 49, from heart disease.

William P. Clothier, Buffalo; University of Buffalo, 1875; member of the Medical Society of the State of New York; also a pharmacist; died, February 5, aged 82.

James P. Wright, Springfield, Mo.; University of Louisville Medical Department, Louisville, Ky., 1874; died, February 14, aged 78, from cerebral hemorrhage.

James D. Nye, Denver; Hahnemann Medical College and Hospital, 1883; died suddenly, aged 71, from heart disease while testifying in a contested will case.

Charles Mason Thomas, Healing Springs, Va.; Georgetown University School of Medicine, Washington, D. C., 1897; died, February 17, aged 54, from empyema.

Thomas A. Wood, Dawson, Ga.; University of Georgia Medical Department, Augusta, 1886; died, January 1, aged 65, from cerebral hemorrhage.

Lawrence F. Smith, Newark, N. J.; University and Bellevue Hospital Medical College, New York City, 1899; died, February 13, from erysipelas.

John Bruce E. Clifford, Santa Barbara, Calif.; California Medical College, San Francisco, 1894; died, February 12, from cerebral hemorrhage.

Samuel M. Voris, Columbus, Ind.; Jefferson Medical College, Philadelphia, 1870; served during the World War; died, February 21, aged 75.

Chas. N. Daman, Syracuse, N. Y.; Jefferson Medical College, Philadelphia, 1881; died, February 18, aged 67, following a short illness.

William A. Muncey, Virgil, N. Y.; Eclectic Medical College of the City of New York, 1882; died, January 28, aged 90, from pleurisy.

John Sebastian Guinan, Whitehall, N. Y.; Albany Medical College, Albany, N. Y., 1893; died, February 11, aged 51, from carcinoma.

John Isbell, Washington, Mo.; University of Virginia Department of Medicine, Charlottesville, 1867; died recently, aged 77.

Edward Hamilton Holbrook, Los Angeles; University of Maryland, Baltimore, 1868; died suddenly, February 1, aged 76.

Isabella S. Hotchkiss, Tacoma, Wash.; Chicago Homeopathic Medical College, Chicago, 1880; died, January 22, aged 82.

F. A. Thomas, Americus, Ga.; University of Georgia Medical Department, Augusta, 1880; died, February 15, aged 66.

Thomas J. Blackwood, Newcastle, Pa.; Jefferson Medical College, Philadelphia, 1866; died, February 10, from senility.

James John Johnson, Biggers, Ark.; Memphis Hospital Medical College, Memphis, Tenn., 1896; died recently, aged 54.

Augustine John Donnelly, Hopkinton, Mass.; McGill University Faculty of Medicine, 1900; died, February 9, aged 44.

Thomas Jefferson Moneyhon, Brooksville, Ky.; Medical College of Ohio, Cincinnati, 1882; died recently, aged 71.

David Jamieson, Barrie, Ontario, Canada; Trinity Medical College, Toronto, 1896; died February 10, aged 55.

Adolph Neubert, St. Louis; Humboldt Medical College, St. Louis, 1869; died, February 9, aged 78.

William B. Yeates, Taylor, Ark. (license, Arkansas, 1903); died, February 14, aged 63.

## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### PULVANE

In a twelve-page pamphlet, sent out by the Pulvane Laboratories, Inc., of Des Moines, Iowa, and purporting to deal with "The Therapy of Pulvane, an advanced method for the treatment of Respiratory Diseases," we are told that Pulvane "was developed in a United States Army General Hospital by officers of the Medical Department."

Pulvane "originally was intended only for its germicidal action upon tubercle bacilli in the lung," but it is now also recommended for asthma, hay fever, bronchitis, rhinitis, laryngitis and "other affections of the air passages." Of the alleged action of Pulvane on tuberculosis we read:

"It destroys the spores of the bacilli as well as the germs themselves. It prevents infection of new areas by aspiration, gravity or surface contact."

"In cases where sputum is positive it is a very noteworthy fact that shortly after treatment is begun, the bacilli begin to disappear, gradually diminish in number, and finally the sputum becomes negative."

Pulvane is administered, by inhalation, at the offices of the Pulvane Laboratories, Inc. Its "discoverer" chanced on a method of "introducing into solution and volatilizing a certain germicide, extremely rare in its usage because of its resistance heretofore to attempts to bend it to scientific will." This "rare" medicament is alpha naphthol! But since the discovery of this volatilizing method "three other ingredients of high therapeutic value have been added." What are these other ingredients?

"They would be named were it not that Pulvane requires special technique in its preparation and administration. Our medical directors do not consider it advisable to identify them here because of the possibility of incompetent hands attempting their use. The medical directors, however, will be glad to name every ingredient of Pulvane for any reputable member of the profession. Pulvane Laboratories reserve only the method of compounding."

Presumably, therefore, if physicians desire to know what Pulvane is, the Pulvane Laboratories, Inc., "will be glad to name every ingredient of Pulvane." It is worth noting that nothing is said about quantities. It is also worth remembering that "Peruna" and some other "patent medicines" have for years printed on the label the names of the alleged ingredients. How much longer is the medical profession going to be fooled with the trick of nostrum exploiters pretending a frankness that means nothing?

From a recent issue of a Des Moines newspaper we learn that the Pulvane Laboratories are about to establish a sanatorium where the Pulvane treatment can be given. This announcement is said to be made by John P. Mosher, the alleged discoverer of Pulvane. Mosher is not a physician. The newspaper article states, further, that Mosher's experiments were tried out "under the observation of Major Sharpe," commander at Fort Des Moines. It appears also that an ex-newspaper reporter is connected with the Pulvane Laboratories. The value of having a good publicity man is obviously recognized. There also seems to be connected with the concern a Dr. Harry P. Hall. We find in the records reference to one Harry P. Hall who was graduated by the Medical Department of Drake University of Des Moines, Iowa, in 1894, and was licensed in Iowa in 1896. Our records indicate that he has not been in practice for some years. We also find in our files some newspaper clippings regarding a Dr. Harry P. Hall who, in 1914, pleaded guilty to a charge of using the mails to defraud and was fined in the federal courts. Whether there is any connection between these two names, we do not know.

Reverting to the claims made by the Pulvane Laboratories that Pulvane was "developed in a United States Army General Hospital by officers of the Medical Department" the



following statement has recently been received by THE JOURNAL from Surgeon-General Ireland of the United States Army:

"It has been brought to my attention that a concern in Des Moines, Iowa, known as the Pulvane Laboratories, has issued a pamphlet in which statements are made which would naturally lead medical men to believe that the experiments, etc., referred to therein were made with the approval of and more or less under the direction of the Medical Department of the Army. I wish to say that this is not so; that the Medical Department had nothing whatever to do with the matter and that it thoroughly disapproves of the methods used by the promoters of this concern."

### MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

**Blummer's Herb Tea.**—In November, 1919, the Lincoln Chemical Work, Chicago, shipped a quantity of "Blummer's Herb Tea" into the state of Nebraska. Analysis of sample of the article by the Bureau of Chemistry showed that it was a mixture consisting essentially of althea (marshmallow) licorice, couch-grass, sage, senna, elder flowers, sassafras, with small amounts of anise, fennel, melissa (balm), American saffron, German chamomile, dandelion, liverwort and a trace of lungwort. The product was falsely and fraudulently represented as a blood purifier, a remedy against all lung troubles, cold, bladder disease, kidney disease, as a remedy for female complaints, stomach trouble, etc. Furthermore, it was misbranded in that, while the labels stated that the boxes contained 6 ounces, they were 24 per cent. shortweight. In July, 1921, a plea of guilty was entered and the court imposed a fine of \$200 and costs.—[Notice of Judgment No. 9591; issued Dec. 10, 1921.]

**Parry's Vegetable Compounds.**—Readers of THE JOURNAL will remember the extended article on this product which appeared in the issue of Dec. 18, 1920, detailing the action of the Post Office Department in declaring the Parry Medicine Company's fraud and debarring it from the use of the U. S. mails. At that time it was brought out that "Parry's Vegetable Compounds," which were numbered consecutively from 1 to 14, were all essentially the same in composition, except for the flavoring material used. They were shown to consist of alcohol 25 per cent., olive oil 50 per cent. and water 25 per cent.

The Parry Medicine Company of Pittsburgh shipped from Pennsylvania to Maryland a quantity of Parry's Vegetable Compounds (Nos. 1 to 14 inclusive) which the

government declared was misbranded. The different packages were recommended for cancer, tuberculosis, typhoid fever, appendicitis, Bright's disease, black plague, smallpox, leprosy, diabetes, snake bite, St. Vitus dance, weak eyes and many other conditions. These claims were all declared false and fraudulent. Each package bore the label "All goods guaranteed under the Pure Food and Drugs Act, June 30, 1906," a statement that was declared false and misleading. In April, 1921, the Parry Medicine Company entered an appearance as claimant for the property and a decree of condemnation and forfeiture was entered. The court ordered that the goods be released to this concern on payment of the cost of the

proceedings, and the execution of a bond in the sum of \$500, conditioned in part that the article be relabeled under the supervision of the Department of Agriculture.—[Notice of Judgment No. 9435; issued Oct. 24, 1921.]

**Hall's Catarrh Medicine.**—This nostrum was for years sold under the name "Hall's Catarrh Cure." In September, 1920, F. J. Cheney & Co., Toledo, Ohio, shipped a quantity of "Hall's Catarrh Medicine" into New York. When analyzed by the Bureau of Chemistry, the stuff was found to consist

### Hall's Catarrh Medicine

Those who are in a "run down" condition will notice that Catarrh bothers them much more than when they are in good health. This fact proves that while Catarrh is a local disease, it is greatly influenced by constitutional conditions. HALL'S CATARRH MEDICINE is a Tonic and Blood Purifier, and acts through the blood upon the mucous surfaces of the body, thus reducing the inflammation and restoring normal conditions.

All druggists. Circulars free.  
F. J. Cheney & Co., Toledo, Ohio.

essentially of potassium iodid, bitter plant extractives, cardamon, sugar, alcohol and water. The stuff was labeled, in part:

"Catarrh . . . nose, throat, ear passages, stomach, bowels, bladder, uterus, . . . small cavities, called antrums and sinuses . . . This form of catarrh . . . should be conquered at all costs."  
"When the sense of smell has been destroyed by catarrh, Hall's Catarrh Medicine . . . assists in restoring normal conditions."  
"Deafness . . . sometimes requires long treatment . . ."

The government charged that the above quoted statements "were false and fraudulent in that the article did not and could not produce the curative and therapeutic effects alleged in said statement, and, in fact, said article contained no ingredient or combination of ingredients able to produce the results claimed for it; that said statements . . . were misleading and were intended to deceive, and were wilfully, wrongfully and unlawfully branded, and added to said packages for the purpose and with the intent to deceive and mislead anyone needing such alleged remedy to believe and understand that said product would produce the curative effects stated." In January, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9506; issued Nov. 24, 1921.]

**La Derma Vagiseptic Discs.**—The Palestine Drug Co. of St. Louis shipped in December, 1919, from Missouri to Oklahoma, a quantity of this product which was declared misbranded. The federal chemists reported that analysis showed the discs to consist essentially of common salt, a small amount of alum, sugar, starch and talc. The article was labeled in part:

"For . . . Amenorrhea and other Uterine and Vaginal Disorders."  
"Ulceration of the Uterus and Catarrh of the Uterus . . . Gonorrhea."


These claims were declared false and fraudulent and in November, 1920, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9598; issued Dec. 10, 1921.]

**Women's Pills.**—In September, 1920, the Fitzpatrick Drug Co., Helena, Ark., shipped into Kansas a certain quantity of "Women's Pills." These, when analyzed by the federal chemists, were reported to consist essentially of castile soap, alkaline carbonates, and unidentified plant extractives. They were labeled in part as follows:

"Women's Pills Will bring the Menstrual periods regular . . . if the period should pass 3 days and menses do not come double the dose."

These claims were declared false and fraudulent in that the pills contained no ingredient or combination of ingredients capable of producing the effect claimed. In January, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9576; issued Dec. 10, 1921.]

**Parry's Vegetable Compound.**  
Alcohol not more than 20%.



No. 2

A Remedy for Cancer, Tumors, Adenoids, Hemorrhoids, Piles, Asthma, Catarrh, Goiter, Typhoid and all other Fevers.

**DIRECTIONS FOR TAKING  
PARRY'S VEGETABLE COMPOUNDS**  
Take one dose a week only  
DOSE—Full contents of this bottle  
For adult who is strong physically  
Weak or delicate adult one-half dose.  
12 to 18 years old, one-half dose 6 to  
12 years old, one-fourth dose 2 to 6 years  
old one-eighth dose 1 from 1 to 2 years  
old one-teaspoonful. Under one year old,  
half teaspoonful. Shake medicine well  
before using.

**PRICE \$1.50.**  
Manufactured by The Parry Medicine Company, Inc.  
1143 Penn Avenue, Pittsburgh.



## Correspondence

### ACTION OF MAGNESIUM SULPHATE IN NONSURGICAL DRAINAGE OF THE GALLBLADDER

*To the Editor:*—The editorial, Feb. 4, 1922, p. 350, on the "Action of Magnesium Sulphate on the Gallbladder," prompts me to give another theory on the physiology involved. The explanation of the action of this drug, in this location, can best be understood by considering the simple laws of osmosis in addition to the law of contrary innervation. The latter can explain only the relaxation of spasms or contractions of the muscle, while the osmosis theory will account for the removal of congestion which is always present in pathologic cases.

It is a well established fact that nature tries to keep all fluids, even though separated by a membrane, as nearly isotonic as possible, and to do this the "flow" is always toward the hypertonic side. Witness the copious watery stool after taking large doses of magnesium sulphate for its laxative effect, and again the fact that a strong magnesium sulphate enema can seldom be retained for more than one hour, and then the amount expelled is from two to three times the quantity introduced. Also the reverse is true: when water is introduced into the bowel it is absorbed more readily than physiologic sodium chlorid solution because the blood is more hypertonic to the water than to the latter.

Recognizing the fact that magnesium sulphate has this marked hygroscopic property, one can easily account for the phenomena observed when a hypertonic solution is kept in contact with the duodenal mucosa. Such treatment will give relief only to patients who have a congested, swollen area either in or around the common duct, due to an infection in the ducts themselves, the head of the pancreas or from injury produced by a moving stone. If a hypertonic solution is applied to this swollen area, a flow of at least the watery portion of this area into the hypertonic solution occurs by osmosis. First the congestion around the ampulla of Vater is reduced and the occluded duct opens, and we have the so-called bile A, or bile from the common duct. If there is no congestion above the ampulla, the mechanical distention of the duodenum or the presence of the bucket excites a contraction of the gallbladder, and bile B will follow at once. This contraction of the gallbladder may even take place before the ampulla has opened so that it is impossible to separate the A and B bile. If the cystic duct is swollen, it may take hours to relieve the congestion there, yet bile from the liver may be flowing freely.

By accepting this theory of osmosis one can readily see that magnesium sulphate does not have a specific action; that it does not produce a flow of bile but simply removes the obstruction to its flow. Hence in normal cases there is no effect. Any hypertonic solution kept in contact with the duodenal mucosa will act as well. The presence of any food or drug in the duodenum may cause a contraction of the gallbladder and an increase of bile, provided the duct is not occluded.

Even though the specific action is denied, one cannot discount in certain cases this nonsurgical drainage of the gallbladder, and the clinical fact that the patients are relieved places it among our most valuable therapeutic agents, no matter what theory as to the action we accept or reject.

The essential thing is to keep a hypertonic solution constantly present in the region of the ampulla, as the liquid passes readily into the third portion of the duodenum, where its value in gallbladder cases is lost. When the body is in

the horizontal position, the first portion of the duodenum descends as it passes over the body of the vertebrae to the right side and is in close relation to the neck of the gallbladder. The second portion is to the right of the vertebrae and parallel to them. This portion fortunately has the opening for the biliary tract, and at the same time (when in the horizontal position) it is the lowest portion of the entire alimentary tract, being retroperitoneal and immobile. The third portion again rises over the body of the vertebrae and passes to the left side, where the fourth portion again ascends to join the jejunum. Placing the patient flat on his back or on his right side results in the formation of a U shaped trap (as used in all sewerage systems), with the second portion of the duodenum the bottom of the U. By filling this "trap" with repeated doses of magnesium sulphate by mouth, one can keep a hypertonic solution in contact with the entire second portion of the duodenum without the use of the duodenal tube. Ten cubic centimeters of a saturated solution in a lactated pepsin vehicle is given every hour. No other water or food is given for five hours, when a dry meal is allowed. This treatment can be continued until a stool containing bile is produced, after the first five hours allowing food when desired but withholding all liquids and keeping the patient flat on his back or on his right side all of the time. If necessary to continue the treatment for more than one day, a rest with all water desired is given during the night.

The rationale of this procedure is further augmented by the roentgen ray, as clinicians report that in cases of biliary disease the second portion fills rapidly but empties slowly. This again favors the retention of the salts in this location in cases with obstruction, while in normal cases it would pass on more readily.

One patient who had required six hypodermic injections of a sedative for pain was relieved in four hours by the treatment described above, but in the majority of cases the distress seems to be present until after the dry meal.

This is presented at this time, not as an established fact, but with the hope that others who are interested in this work will be stimulated anew.

B. L. KNIGHT, M.D., Cedar Rapids, Iowa.

### "THE OVARY AND THE ENDOCRINOLOGIST"

*To the Editor:*—May I comment on an article entitled "The Ovary and the Endocrinologist," by Dr. Robert T. Frank, which appeared in THE JOURNAL, January 21? I have been hoping that some one, interested in the subject and realizing the benefit from certain types of organotherapy, might answer Dr. Frank's rather scathing remarks anent the subject of ovarian organotherapy. I will agree that the rank commercialism which has enveloped the field of endocrinology has done much to discredit it. I have no use for the exploiter of the "shot gun mixtures," or the pluriglandular products, put upon the market and foisted upon the profession by means of "therapeutic" advertising pamphlets, postcards, etc. Dr. Frank's allusion to the "endocrinopractor" is well made. I must take issue with him, however, in regard to ovotherapy of a rational and common sense type. I cannot understand his pessimism. When he says that corpus luteum extracts, ovarian extracts and ovarian residue are inert, and shows his disbelief that beneficial results are obtained in the functional amenorrheas, certain types of dysmenorrhea and in the treatment of the symptoms of the artificial and physiologic menopause, I believe that the products he used have either been of poor preparation, not fresh, or that his therapy has been incomplete. Ovarian organotherapy must be prolonged, continuous and regularly applied to obtain results, and fresh glandular products must be used. The miraculous effect of



luteum extract in amenorrhea of the functional type, combined with thyroid extract where obesity is coexistent, in dysmenorrhea not referable to mechanical causes and in the early symptoms of the menopause, is too well known to me and many others to allow Dr. Frank to discredit it without a word of protest.

ADAM P. LEIGHTON, JR., M.D., Portland, Maine.

#### "A TECHNIC FOR THE REPAIR OF RELAXED OR LACERATED PERINEUM"

*To the Editor:*—I was much interested in reading Dr. R. L. Payne's discussion of perineal repair in *THE JOURNAL*, February 25. I believe that his suggestion as to freeing the rectal wall from the levator ani is a good one, the only objection being an incision so close to the rectal wall. Replacement of the herniated bowel, a procedure that has received very little attention in the literature, is as important here as in any other location.

A great deal of useless attention has been given to different methods of performing perineorrhaphy. The points of traction, line or lines of incision, and shaping of mucosal flaps are of little significance. More time spent in a careful dissection of the perineum and identification of fascia as well as muscle will give a larger percentage of successful results. A continuous suture should never be used when the suture is under tension.

When it becomes generally recognized that perineorrhaphy is nothing more nor less than a herniotomy, more satisfactory results will follow.

RAYMOND L. BRADLEY, M.D., Houston, Texas.

#### "A COURT OF DECENCY FOR PHYSICIANS"

*To the Editor:*—I believe that some of the ideas in Dr. Croftan's letter (*THE JOURNAL*, Feb. 25, 1922, p. 601) are timely—or, shall I say, a little tardy? One hears many complaints nowadays of maltreatment against the other fellow, which are found on investigation to be either imaginary or vindictive, and especially vindictive when the other fellow attempts to force payment for service honestly rendered. Such a court, if we have one, will have to be made up of what is known as "full-time men." I think Dr. Croftan is right in saying that it is "driving a cold wedge between physician and patient," and that "the tendency is for the doors to be thrown open to questionable practices, professional and financial, chiefly along the lines of needless surgery, needless diagnostic fussing, and unduly prolonged courses of treatment, with needless hospitalization and consequently needless expense."

The great bulk of our practice is made up of middle class people. The poor have their county doctors or dispensaries, and the wealthy patient somehow or other gets away from us. The erratic element, or that class of wealthy people with ungearred minds, pursues the shade of Mary Baker Glover Patterson Eddy, and the greater class with normal minds and sound judgment changes climate, or goes to fashionable resorts or sanatoriums. Persons of the middle class are at our mercy, as they are either too proud to appeal to free dispensaries, or cannot afford to change climate or go to sanatoriums, and they are usually too intelligent to chase after shades. Why should we not try to retain their confidence?

We are too ready to railroad the sick to hospitals, thereby subjecting them sometimes to unnecessary expense. Many hospitals nowadays insist on having special nurses night and day. I know that we must use the hospitals in surgical cases,

but we have to admit that with such exceptions as the charity hospitals or county institutions, the management of many hospitals is cold blooded. The patient recovers with a grievance against both the hospital and the physician.

Then, again, we are becoming ultrascientific. We read scientific journals telling how Professor So and So reaches his diagnosis by making a spinal puncture, or how he passes a stomach tube and how he makes a gastric or duodenal analysis; or how he catheterizes the ureter, and how he uses a cystoscope and rectoscope and bronchoscope, and so on. Then, when a patient comes into our office we try some of those stunts and the patient either faints on our hands or goes away hurt or offended, never to return again.

Why can't we use our five senses as the old time clinicians used to do until we see that certain special technic and analysis must be made? Then we shall have the confidence of the patient, and we can put it up to him whether he wants the procedure or not. Needless surgery is another cause that is "driving the cold wedge" between the general practitioner and the patient. Many unnecessary operations have been and are being performed on patients whose histories show they had or have absolutely no relief from the operations. Appendixes are removed when the foci of the troubles are elsewhere, as in the lungs, stomach, gallbladder, tonsils, teeth or nerves.

If a court of decency is necessary, let us have it; and the sooner the better, if it will help to retain the confidence of the public.

A. J. CAFFREY, M.D., Milwaukee.

#### EPIDEMIC JAUNDICE

*To the Editor:*—In an item on suspicious cases of epidemic jaundice in New York State (*THE JOURNAL*, Jan. 14, 1922, p. 117), this disease is referred to as having been "rarely reported in the United States." The disease, as manifested in my experience, has extended over two years, going from family to family in the rural districts as well as the city, having its greatest incidence in children and adolescents, although adults have not been immune. The disease has been more prevalent in the fall. The first cases presented early symptoms which were rather difficult to differentiate from those found in acute appendicitis, gallbladder trouble or peritonitis, diagnosis being confirmed only after observing other cases appearing about the same time, and by the appearance of jaundice on the third or fourth day. The method of infection was undoubtedly by direct transfer. If there was one case in the family there would invariably be others. Other children who attended the same school would be attacked. It has kept up to the present time, without deaths or apparent damage to the patient, each case varying in intensity, and running its course in from three days to four weeks.

G. E. BURMAN, M.D., Carthage, S. D.

#### A PLETHORA OF PHYSICIANS

*To the Editor:*—Recently several of our leading daily newspapers have claimed that there is quite a scarcity and shortage of physicians in certain localities in eastern states. I have also noticed similar complaints from various boards or committees whose statements appeared in *THE JOURNAL*. In some instances it has been thought advisable to lower entrance requirements, shorten, cheapen and in other ways make the entire curriculum and qualification easier as an inducement to young men to enter the medical profession. Stop all such propaganda. There are more idle physicians in Texas and Oklahoma than are necessary to fill all the needs and openings in the United States. In every nook and



corner in Texas there are from three to five physicians where one or two would abundantly suffice. A simple remedy would be to grant reciprocity—more liberally and reasonably—and advertise the places where physicians are needed and can earn and collect a good income.

E. H. MORGAN, M.D., Granbury, Texas.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### SWEEPING COMPOUND—ANT EXTERMINATORS

To the Editor:—1. Please give me a good formula for preparing a floor sweeping compound such as we commonly buy mixed with sawdust.

2. Is there any known efficient remedy for the cutting ant as we see it here in Mexico and South Texas? This is not just in your line, but we have written the Department of Agriculture and Experiment Stations, and their remedies are no better than ours. The ants destroy whole plants in one night, sometimes. We have tried smoke underground, potassium cyanide mixture, insect powder and numerous other things. And, by the way, the insect powder has them all beaten, only it is very expensive in any quantity such as we require.

W. S. WILKISON, M.D., Cloete, Coahuila, Mexico.

ANSWER.—1. The "Scientific American Cyclopedia of Formulas" suggests this formula for a satisfactory sweeping compound:

Melt 2 ounces (60 gm.) of paraffin in 2 quarts (2 liters) of liquid petrolatum over a water bath; then add 6 ounces (170 gm.) of coarse salt, 5 pounds (2.25 kg.) of sea sand, 10 pounds (4.5 kg.) of sawdust, and finally add 1 ounce (30 c.c.) of oil of eucalyptus, the latter serving to provide a satisfactory odor.

2. Among the various methods which have been suggested for clearing out ants are the following:

1. Drop quicklime on the mouth of the nest and wash it in with boiling water.

2. Pour in boiling water in which camphor or tobacco has been steeped.

3. A spray of benzoin from an atomizer is sudden death to most insects. It must, however, be carefully handled because of the possibility of explosion.

4. Powdered borax sprinkled around the infested places will exterminate both red ants and black ants.

### DILUTED MERCURIAL OINTMENT INTERNALLY

To the Editor:—1. How long would a few grains of Unguentum Hydrargyri Dilutum, U. S. P. (blue ointment) remain in the stomach of a healthy child, aged 2 years, if ingested three hours after its last meal? 2. Would the mercury in this preparation be converted into a soluble salt of mercury in the stomach, or in the intestine? 3. About what quantity would be dangerous to life for a child of 2 years, of the foregoing preparation? 4. What steps should be taken to counteract the effects of an unknown quantity, not exceeding 20 grains (1.3 gm.), if the patient was seen thirty minutes after ingestion?

NEWTON G. WILSON, M.D., Fieldale, Va.

ANSWER.—1. Not very long.

2. In the intestine.

3. The quantity could not be stated categorically, but it would be more than a few grains.

4. The contents of the stomach should be evacuated by means of the stomach tube, and a saline purgative should be given.

### MERCURIC CHLORID IN SCABIES

To the Editor:—Please tell me whether 30 grains of mercuric chlorid to 1 pint of water would be too strong to apply to the skin in a case of scabies.

R. A. REGER, M.D., Buckhannon, W. Va.

ANSWER.—Thirty grains (2 gm.) of mercuric chlorid to a pint (500 c.c.) of water—that is, a 1:250 solution—can be used for washing small areas of unbroken skin without producing irritation, if it is not done too often, but it is much too strong to apply to an inflamed skin like one affected with scabies. It is too strong to use as a general wash over the whole body, even with an unbroken skin. Mercuric chlorid is not the proper parasiticide for scabies.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

COLORADO: Denver, April 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, March 14-15. Sec., Reg. Bd., Dr. Robert L. Rowley, 79 Elm St., Hartford.

CONNECTICUT: New Haven, March 14. Sec., Eclec. Bd., Dr. James E. Hair, 730 State St., Bridgeport. Sec., Homeo. Bd., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.

ILLINOIS: Chicago, March 27-29. Director, Mr. W. H. H. Miller, Springfield.

IOWA: Des Moines, March 21-23. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MAINE: Portland, March 14-15. Sec., Dr. Frank W. Searle, 775 Congress St., Portland.

MASSACHUSETTS: Boston, March 14-16. Sec., Dr. Samuel H. Calderwood, State House, Boston.

MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.

OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, April 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

### Louisiana December Examination

Dr. Roy B. Harrison, secretary, Louisiana State Board of Medical Examiners, reports the written examination held at New Orleans, Dec. 1-3, 1921. The examination covered 12 subjects and included 100 questions. An average of 75 per cent. was required to pass. Of the 14 candidates examined, 11 passed and 3 failed. Two candidates were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Indiana University	.....	(1917)	84.3
Kentucky School of Medicine	.....	(1905)	75*
Tulane University	.....	(1914)	90.2,
	(1921) 83.6, 84.9, 85.5†, 88.3†		
University of Oklahoma	.....	(1917)	86.4
University of the South Medical Department	.....	(1909)	85.1
Vanderbilt University	.....	(1920) 84.7, (1921)	79.7
FAILED			
University of Illinois	.....	(1920)	73.9
Meharry Medical College	.....	(1917) 45.4, (1918)	62.4

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Maryland	.....	(1905)	Maryland
Harvard University	.....	(1917)	Minnesota

\* Credit given for years of practice.

† These candidates have received temporary permits until completion of citizenship.

### Pennsylvania Reciprocity Report

Mr. C. D. Koch, director, Professional Credentials Bureau, Bureau of Medical Education and Licensure of Pennsylvania, reports that, during 1921, 16 candidates were licensed by reciprocity. Eleven candidates were licensed by endorsement of credentials. Four candidates were registered on the basis of military service. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University	.....	(1908)	Dist. Colum.
Howard University	.....	(1906)	Georgia
Loyola University	.....	(1919)	Illinois
University of Illinois	.....	(1917)	Illinois
Indiana University	.....	(1909)	Indiana
College of Physicians and Surgeons, Baltimore	.....	(1915)	W. Virginia
Johns Hopkins University	.....	(1914), (1917)	Maryland
University of Maryland	.....	(1917)	Delaware
Boston University	.....	(1913)	S. Carolina
Washington University	.....	(1914)	Missouri
Medico-Chirurgical College of Philadelphia	.....	(1916)	Delaware



University of Pennsylvania.....(1910) Virginia, (1916) N. Carolina  
University of Pittsburgh.....(1916) Ohio  
University of Vermont.....(1919) Vermont

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Johns Hopkins University.....		(1919)	N. B. M. Ex.
Jefferson Medical College.....		(1916)	U. S. Army
Medico-Chirurgical College of Philadelphia.....		(1916)	U. S. Army
University of Pennsylvania.....		(1916), (1917)	U. S. Army
		(1918, 3), (1919, 6)	Nat'l Bd. Med. Ex.
Woman's Medical College of Pennsylvania.....		(1918)	N. B. M. Ex.

## Book Notices

LA FIBRE RECURRENTE EN GENERAL Y PARTICULARMENTE EN VENEZUELA. Por el Doctor R. Pino-Pou. Paper. Pp. 115, with 11 illustrations. Caracas: Aguerrevere & Guruceaga, 1921.

The first case of relapsing fever in Venezuela was reported by the author in January, 1918. Since that date he has studied other cases and carried out laboratory investigations, especially as regards the morphology and pathogenic action of the causative agent. In the present book he reviews the subject in general, as regards etiology, geographic distribution, morphology, diagnosis, complications, prognosis and mortality. Pino-Pou lays special stress on the conclusions of Darling at Panama and Franco at Colombia. In Venezuela the disease has so far been found only in two states, Táchira and Guayana. The mortality seems low, and the prognosis is rather favorable. In Venezuela, relapsing fever is caused by a spirochete, apparently different from the European and African varieties and Novy's American strain, but identical to those observed in Colombia, Panama and Peru. Both rats and mice are readily infected by the germ. One of the characteristics of the South American species is its scarcity in peripheral blood. In Venezuela the insect carrier is an ornithodoros, it being also possible that bedbugs may play a part in transmission. Arsphenamin and neo-arsphenamin seem to be specific curative agents. While Dr. Pino-Pou's book is in a way an extension of Darling's and Franco's work, it represents a serious piece of research which has thrown more light on a disease now found practically all over the world. Incidentally, it shows the possibilities open to physicians in tropical regions who supplement their clinical observations with the aid of the laboratory.

SOUTH AMERICA FROM A SURGEON'S POINT OF VIEW. By Franklin H. Martin, C.M.G., M.D., F.A.C.S., Director-General, American College of Surgeons. Cloth. Price, \$3. Pp. 325, with illustrations. New York: Fleming H. Revell Company, 1922.

This volume is the result of two visits to South America made by Dr. Martin and his colleagues on behalf of the American College of Surgeons, and it is offered in the nature of a report to the fellows of the college. The remarks of Dr. Martin on the general character of the countries and institutions visited are supplemented by comments of Drs. William J. Mayo and Thomas Watkins on medical education, on the hospitals and on other points of particular interest to them. The book is a guide to the important physicians and surgeons of South America, containing, in addition to their names, more than thirty portraits. There are numerous illustrations of the scenic features of the various countries visited, particularly of the medical institutions. A supplement of 100 pages gives a summary of facts concerning each country and an English, Spanish and Portuguese vocabulary for the use of the traveler.

THE VITAMINE MANUAL. A Presentation of Essential Data about the New Food Factors. By Walter H. Eddy, Associate Professor of Physiological Chemistry, Teachers College, Columbia University. Cloth. Price, \$2.50 net. Pp. 121. Baltimore: Williams & Wilkins Co., 1921.

The widespread interest, not only among physicians, but also among the general public, in those comparatively newly discovered accessory food factors that we call vitamins, makes this manual especially valuable. A vast amount of misinformation is abroad on the subject of vitamins. It emanates, largely, from sources that have a commercial interest in misleading both the layman and the physician. The purpose of

the manual has been to collate the existing data and "put it in a form which would be available for both student and layman"—and the purpose is excellently served. The chapters on "How Vitamins Were Discovered," "The Sources of the Vitamins" and "How to Utilize the Vitamins in Diets" will be found of more than usual interest, while Chapter 8, on "Avitaminoses or the Diseases that Result from Vitamin Deficiencies," will appeal particularly to physicians. The last twenty-seven pages of the book are devoted to a comprehensive bibliography. Altogether, the manual is one that can be highly recommended to physicians and others interested in the problems of nutrition.

MODERN ITALIAN SURGERY AND OLD UNIVERSITIES OF ITALY. By Paolo de Vecchi, M.D. Foreword by George D. Stewart, M.D. Cloth. Price, \$5 net. Pp. 249, with 15 illustrations. New York: Paul B. Hoeber, 1921.

The work of Morelli, Forlanini, Bassini, Bastianelli and Ceci has attracted the attention of surgeons throughout the world. In the middle ages the universities of Italy were the Mecca of medical men from all countries. Between that period and the present, however, Italian medicine has not attracted world attention, and visitors to Europe have chosen France, England and Austria for educational purposes and Italy for art and ruins. During the World War the achievements of the Italian medical corps and the contributions of the Italian surgeons and scientists mentioned were as great as those of the medical men of any other European country. Dr. De Vecchi gives a general account of surgery in Italy today. As a background he offers a history of the ancient and present universities and scientific institutes of his country. His account is easily readable, and the book is excellently illustrated. It has the definite earmarks of the warm Italian temperament, being devoted almost wholly to praise, and giving, therefore, but one side of the story. It will serve well, however, to make apparent to American readers the great progress which Italy has made in the field of surgery.

THE HOT SPRINGS OF NEW ZEALAND. By Arthur Stanley Herbert, O.B.E., M.D., B.S., Consulting Balneologist to the Dominion of New Zealand. Cloth. Price, 15 shillings net. Pp. 284, with 87 illustrations. London: H. K. Lewis & Co., 1921.

The author is consulting balneologist to the Dominion of New Zealand, and in this book describes the mineral waters of that country especially for British readers. The book is timely, since many of the continental health resorts are not now accessible to British guests. Unlike most balneologists, Dr. Herbert is extremely conservative in his claims for the chemical and radioactive qualities of the waters, ascribing most of the benefits to the general hydrotherapeutic, climatic and psychic effects. That good results are achieved in certain instances is proved from the case reports and illustrations in the book. The book includes, not only a description of the various spas and the chemical and other qualities of their waters, but also some general discussions of the climatic and accessory treatment and of the general typography and environment of the health resorts. There are eighty-six beautiful illustrations of the various resorts and of the Maoris, who are a picturesque addition to the scenery.

TEXT-BOOK OF EMBRYOLOGY. By Frederick Randolph Bailey, A.M., M.D., and Adam Marion Miller, A.M., Professor of Anatomy, The Long Island College Hospital. Fourth edition. Cloth. Price, \$6. Pp. 663, with 503 illustrations. New York: William Wood & Company, 1921.

The authors have modified their book by omitting the chapter on "The Cell," since the previous training of the student has probably brought to his attention the salient features of cell organization. Some of the old illustrations have been replaced by new ones, and a chapter on "Fetal Membranes" has been added.

OUTLINES FOR CASE TAKING AND ROUTINE WARD AND LABORATORY WORK, AS USED IN THE MEDICAL CLINIC OF THE WASHINGTON UNIVERSITY. By George Dock, A.M., M.D., Sc.D., Professor of Medicine, Washington University. Third edition. Cloth. Price, 50 cents. Pp. 53. Ann Arbor, Mich. George Wahr, 1921.

This is a useful guide in making good clinical histories worthy of the name at the present time.



## Medicolegal

### Physician Not Permitted to Testify from Memorandum

(*McEwen v. New York Life Ins. Co. (Calif.)*, 201 Pac. R. 577)

The Supreme Court of California holds that, in an action on a policy of life insurance, a physician who, as the company's medical examiner, had examined the insured, was properly not allowed to testify as to whether the insured had informed him of an accident which had not been mentioned in the answers to the medical examination, when the physician had no independent recollection whatever of the examination and the memorandum from which it was desired by the plaintiff to have him refresh his memory or testify furnished evidence of its own unreliability; and, while it was signed by the witness, it was not shown that he wrote or dictated it, or that, at the time it was written, the fact was fresh in his memory, or that he knew that it was correctly stated. Nor, from the facts that the defendant company objected, under such circumstances, to the plaintiff's counsel questioning the physician, and the company did not itself call the physician as a witness, did the presumption arise that the physician's testimony would have been adverse to the company. The latter was under no obligation to call the physician as its own witness or to permit him to testify for the plaintiff, particularly in view of the fact that the physician was unable to recall the medical examination at all, and it did not appear that there was any legally competent memorandum which he might use to aid him in testifying.

### Construction of Statute Requiring Submission to Operation—Case of Injured Knee

(*Grant v. State Industrial Accident Commission (Ore.)*, 201 Pac. R. 438)

The Supreme Court of Oregon discusses at considerable length the right of an injured workman to compensation after he refuses to submit to a surgical operation, particularly under the statute of that state, which provides that, for such period as any workman shall refuse to submit to such medical or surgical treatment as the industrial accident commission deems reasonably essential to promote his recovery, his right to compensation shall be suspended. The court says that it has not discovered any jurisdiction under which the commission or other body administering the workmen's compensation statute is given arbitrary power to prescribe an operation under inevitable penalty of loss of compensation in case of refusal by the workman; nor does any statute to which the court's attention has been called make the right of refusal depend on the balance of medical opinion. The opinions of medical men, whether divided or unanimous, are not alone and of themselves necessarily controlling. In every jurisdiction, the right of the workman is dependent on his conduct, and his conduct is measured by the course which would be pursued by an ordinarily reasonable man.

When the Oregon statute is read in the light of the humane purposes which it was designed to accomplish and is viewed in the light of the rule which elsewhere has been adopted without dissent or protest, and is then interpreted liberally, as it ought to be, it will clearly appear that the words "reasonably essential" are used in a relative sense and imply the necessity of considering not merely the opinions of medical men but all the facts, before attempting to decide. In other words, the court's conclusion is that the statute should be construed to mean that the workman's right to compensation is to be suspended if he refuses to submit to an operation to which an ordinarily reasonable man would submit if similarly situated. Usually, the conduct of a workman is a question of fact to be decided by the triers of the facts. Each case will depend largely on its own facts and circumstances. If, in a given case, it can be said that the workman is refusing to undergo a safe and simple operation, which, if performed by a competent surgeon, is fairly certain to result in removal of the disability and is not attended by serious risk or extraordinary pain, and one to which an ordinarily prudent

and courageous person would submit for his benefit and comfort, no question of compensation being involved, then it can be said that the continued disability of the workman is the direct result of his own unreasonable refusal.

In the present case, a plank gave way causing the workman's left knee to strike against a piece of steel, producing what was finally determined to be a floating semilunar cartilage of the knee joint. The commission, guided by the opinions of the physicians, apparently on the theory that the opinions of the medical men were conclusive, especially when they agreed, as they did here, that an operation was advisable, refused to make an award for an alleged permanent partial disability, on account of the refusal of the injured workman to submit to an operation. But a jury found that he had reasonable ground for the refusal, and on the verdict the circuit court adjudged him entitled to an award of 75 per cent. disability for the loss of function of the left knee and the left knee joint; which judgment is affirmed by the supreme court, the operation required being a major one and there being a risk of producing a result which some persons might deem worse than the man's condition without the operation.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Pern, Montgomery, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
- American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
- American Congress on Internal Med., Rochester and Minneapolis, April 3-8. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.
- American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis, 104 S. Michigan Ave., Chicago, Secretary.
- American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
- American Laryng., Rhinol. and Otolological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
- American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
- American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
- American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
- American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
- American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia, Secretary.
- American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
- Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
- Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
- Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
- National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
- Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
- New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
- North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
- South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Anatomy, Philadelphia

January, 1922, 30, No. 1

- Certain Features of Spermatogenesis in Amphibia and Insects. R. H. Bowen, New York.—p. 1.  
Reticular Material as an Indicator of Physiologic Reversal in Secretory Polarity in Thyroid Cells of Guinea-Pig. E. V. Cowdry, New York.—p. 25.  
Endothelium in Tissue Culture. W. H. Lewis, Baltimore.—p. 39.  
Development of Anterior Lymphatics and Lymph Hearts in Anuran Embryos. O. F. Kampmeier, Chicago.—p. 61.  
\*Disturbances in Mammalian Development Produced by Radium Emission. H. J. Bagg, New York.—p. 133.

**Effect of Radium on Mammalian Development.**—The marked selective action of radium emanation on fast growing embryonic structures was noted by Bagg. Very decided developmental arrests occurred in the differentiation of the nervous and reproductive systems of mammalian embryos exposed to irradiation toward the end of pregnancy. Radium emanation, used either in the form of a radioactive solution injected into the adult female, or employed as an external gamma ray radiation, produced marked areas of extravasation in the subcutaneous connective tissue of the developing young. This suggests that the action of radium emanation might be selective on the endothelium of blood vessels. Extravasations occurred in the developing young of females treated with radioactive solutions a considerable time before fertilization, and suggest that in some way the faculty of the later developing embryos to form proper blood vascular endothelium had been interfered with. When women are subjected to therapeutic irradiation, especially during the early stages of pregnancy, the clinician should be forewarned concerning the possibility of producing very grave disturbances in the developing child.

#### American Review of Tuberculosis, Baltimore

January, 1922, 5, No. 11

- Nutrition of Acid Fast Bacteria. E. R. Long, Chicago.—p. 857.  
\*Dietary Requirements in Pulmonary Tuberculosis. W. S. McCann, New York.—p. 870.  
\*Intravenous Injection of Calcium Chlorid in Treatment of Intestinal Tuberculosis. P. H. Ringer and C. L. Minor, Asheville, N. C.—p. 876.  
Respiratory Organs in Health and Disease. IV. Comparison of Vital Capacity Readings and Roentgen-Ray Findings in Pulmonary Tuberculosis. J. A. Myers, Minneapolis.—p. 884.  
\*Griffith Method for Direct Isolation of Tubercle Bacilli. H. W. Lyall, Pittsburgh.—p. 899.  
Dissemination of Bacteria in Upper Air Passages. I. Circulation of Foreign Particles in Mouth. A. L. Blomfield, Baltimore.—p. 903.  
Resistance to Tuberculosis and Its Relation to Antituberculosis Measures. A. K. Krause, Baltimore.—p. 915.

**Dietary Requirements in Pulmonary Tuberculosis.**—High protein diets, McCann asserts, greatly increase the metabolism and consequently enlarge the demands on the cardio-respiratory mechanism. They produce undesirable effects on the digestive and excretory systems as well. While nitrogen balance may be attained on a low protein diet, this is only possible when the protein metabolism is spared by an excessive ingestion of nonprotein food, chiefly carbohydrate. The effect of a carbohydrate rich diet is to increase greatly the breathing volume. Fat, which is metabolized with the greatest economy of respiratory function, is not so efficient as carbohydrate in sparing protein. Satisfactory nutrition may be attained by the use of moderate quantities of protein, from 60 to 90 gm. per diem, with the use of fat up to the limits of digestive capacity, and sufficient carbohydrate to bring the total caloric value of the diet to 2,500 or 3,000 calories. Such a diet will produce the least demand on the function of the damaged lungs. From the standpoint of diminishing the specific dynamic effects of foods, there is an advantage in dividing the diet into more than three meals.

**Calcium Chlorid in Intestinal Tuberculosis.**—Ringer and Minor report the results obtained in the treatment of thirty cases of tuberculous diarrhea by the more or less frequent

intravenous injection of from 5 to 10 c.c. of a 5 per cent. calcium chlorid solution. Great care must be taken that none of the solution escapes into the subcutaneous tissue, as it is very irritating, causes excruciating pain, and may set up an area of necrosis and gangrene. Of sixteen cases receiving two injections each, thirteen showed absolutely no beneficial effects therefrom and the drug was consequently discontinued. Two patients receiving two injections each showed decided improvement, which has continued and consequently no further injections have been given. One patient, receiving two injections at an interval of two months, was relieved of all symptoms and has not needed another dose. The authors are convinced that calcium chlorid will frequently palliate and relieve, and when cases are diagnosed early, may even prove curative. The results presented are not brilliant, but, their significance is such as to encourage further use of the drug.

**Isolation of Tubercle Bacilli by Griffith Method.**—In fifty-five out of fifty-six specimens tubercle bacilli were isolated by Lyall in pure culture by the Griffith direct method. The most uniformly successful medium for the direct isolation of tubercle bacilli from sputum was one containing beef liver infusion in the proportion of one part infusion to four parts of egg.

#### Archives of Internal Medicine, Chicago

February, 1922, 29, No. 2

- \*Tracheal and Bronchial Stenosis as Causes for Emphysema. C. F. Hoover, Cleveland.—p. 143.  
\*Microlymphoidocytic Leukemia; Report of Case. S. Fineman, Minneapolis.—p. 168.  
\*Intracutaneous Reactions in Lobar Pneumonia. G. H. Bigelow, Boston.—p. 221.  
Clinical Studies on Respiration. VIII. Relation of Dyspnea to Maximum Minute-Volume of Pulmonary Ventilation. C. C. Sturgis, F. W. Peabody, F. C. Hall and F. Fremont-Smith, Jr., Boston.—p. 236.  
Position and Activities of Diaphragm as Affected by Changes of Posture. R. D. Adams and H. C. Pillsbury, Washington, D. C.—p. 245.  
\*Auriculoventricular Rhythm and Digitalis. H. B. Richardson, New York.—p. 253.  
\*Case of Disseminated Miliary Tuberculosis in Still-Born Fetus. R. C. Whitman and L. W. Greene, Boulder, Colo.—p. 261.  
Convenient Electrode for Experimental Electrocardiographic Work. C. S. Williamson, Rochester, Minn.—p. 274.

**Tracheal and Bronchial Stenosis as Causes of Emphysema.**—Though active expiratory compression of the lung is rarely employed; the vigor with which the expiratory muscles can compress the lungs, Hoover asserts, is greater than that with which the inspiratory muscles can distend them. Therefore, the air inspired within a given time can be expired within the same time, provided the resistance in the trachea or the branches of the bronchial tree is the same in inspiration as in expiration. When the tracheal or uniform bronchial resistance to expiration exceeds that to inspiration, the residual air in the lung is increased only when hyperpnea attains such a degree that the respiratory need will not allow adequate time for the volume of the expired air to equal that of the inspired air. Compression of the lungs in expiration does not produce a vicious cycle of increasing resistance to expiration. Neither hyperpnea nor an active expiration is essential for the production of emphysema. Prolongation of expiration in emphysema does not measure the degree of expiratory resistance, but indicates the patient's respiratory tolerance of prolongation of the expiratory phase. It is only in the extremity of respiratory needs that active expiration is employed to overcome expiratory resistance. In bronchiolar spasm severe enough to demand an active expiration, the inspiratory and expiratory phases have the same duration, and the volume flow within each phase is constant. That an excess of expiratory over inspiratory resistance should produce emphysema, the excess must be unequally distributed in the bronchial tree.

**Microlymphoidocytic Leukemia.**—Fineman is of the opinion that his case offers strong evidence that the unitarian theory of the origin of white blood cells is the correct one. In his case the blood, at all times, showed numerous stem cells of all sizes. These cells (atypical) had a basophilic cytoplasm and a nucleus in which the chromatin formed a very fine evenly distributed sievelike network. Morphologically, they were indistinguishable from typical myeloblasts. The biopsy



of a lymph node showed these atypical cells proliferating in great numbers in the capsule, interfollicular tissue, lymph cords, lymph follicles and in the germ centers of the lymph follicles. Transition forms between the connective tissue cells of the capsule and these atypical cells, as well as between lymphocytes and these atypical cells also, were present. From the evidence at hand Fineman believes the conclusion is justified that in all probability the majority of the "myeloblasts" and "micromyeloblasts" of the blood were coming from the lymphoid organs, not only from the portions which, according to the dualists, may give rise to myeloid cells, but from the sanctum sanctorum of the lymphoid tissues, namely, the follicles and germ centers.

**Intracutaneous Reactions in Lobar Pneumonia.**—Of 104 cases of lobar pneumonia tested by Bigelow eleven gave one or more intracutaneous reactions to only one type of pneumococcus used, while forty-six reacted to two or more types. Of twenty controls none showed the single type reaction, while nine showed the multiple type reactions. In 10 per cent. of the cases treated with Type I antipneumococcus serum, specific type reactions were obtained, and in 14.8 per cent. not so treated there were similar reactions. No one of the fixed types showed any marked preponderance of specific type reactions. With antigens prepared from simple saline suspensions of pneumococci, 61.1 per cent. of the tests, performed on the patients showing the specific type reactions, were positive when the antigen used had been autolyzed in the incubator for a week or more, and 11.1 per cent. of the tests with nonautolyzed antigen were positive. No reactions comparable to those reported by Weiss and Kolmer with their "pneumotoxin" were obtained with a similar preparation, nor was there any specific absence of reactions as might be expected from an analogy to the Schick test.

**Digitalis Causes Auriculoventricular Rhythm.**—A case is described by Richardson in which clinical and pathologic observations combined to indicate a causal relation between the administration of digitalis and auriculoventricular rhythm.

**Miliary Tuberculosis in Stillborn Fetus.**—A case of transplacental infection is reported by Whitman and Greene. The diagnosis is firmly established by the character of the histologic changes, and the finding of tubercle bacilli in the kidney. The fact of stillbirth at term precludes intrapartum infection.

### Archives of Occupational Therapy, Baltimore

February, 1922, 1, No. 1

- Philosophy of Occupation Therapy. A. Meyer, Baltimore.—p. 1.  
Training Aides for Mental Patients. E. C. Slagle, New York.—p. 11.  
Recreational Therapy for Heart Disease. F. Brush, White Plains, N. Y.—p. 25.  
Occupational Therapy for Home Bound. E. L. Collins, New York.—p. 33.  
Occupation for Children in Hospitals. I. L. Whittier, Boston.—p. 41.

### Arkansas Medical Society Journal, Little Rock

February, 1922, 18, No. 9

- Indigestion and Dyspepsia. M. D. Ogden, Little Rock.—p. 171.  
Some Phases of Acidosis. A. C. Kirby, Little Rock.—p. 174.

### Boston Medical and Surgical Journal

Jan. 19, 1922, 186, No. 3

- \*Operative Treatment of Epilepsy. J. M. Little, Boston.—p. 65.  
Pyorrhea An Ancient Disease. C. M. Cobb, Lynn, Mass.—p. 78.  
General Physiology in Its Relation to Problem of New Growths. F. H. Pratt, Boston.—p. 80.

**Operative Treatment of Epilepsy.**—In three cases of jacksonian epilepsy and eleven cases of general epilepsy Little did a decompression operation which he believes was justified by the relief given thereby in many of the cases.

Feb. 16, 1922, 186, No. 7

- Infections of Biliary Passages. J. T. Bottomley, Boston.—p. 201.  
Value of Medical Biliary Drainage for Diagnosis and Treatment of Diseases of Gallbladder and Bile Ducts. F. W. White, Boston.—p. 206.  
\*Heart in Hyperthyroidism. B. E. Hamilton, Boston.—p. 216.

**Heart in Hyperthyroidism.**—From personal examination of a large number of hearts in hyperthyroidism Hamilton is convinced that the great majority of hearts present no evi-

dence of damage. Heart failure is not found in this class of cases—even when death occurs. Hyperthyroidism in the presence of (a) rheumatic heart disease or (b) middle age (over 45 years) has a tendency to cause established or paroxysmal auricular fibrillation. In many cases of hyperthyroidism showing auricular fibrillation, the auricular fibrillation disappears after relief of hyperthyroidism by operative measures, while digitalized. Cases with auricular fibrillation without true signs of heart failure have stood operation well. All auricular fibrillation cases with hyperthyroidism can be improved by digitalization. It is suggested that digitalization has a favorable influence on the cure of auricular fibrillation in hyperthyroidism.

### Florida Medical Association Journal, St. Augustine and Jacksonville

January, 1922, 8, No. 7

- Early Diagnosis of Carcinoma of Cervix. W. M. Rowlett, Tampa.—p. 111.  
State Board of Health and Its Bureaus. G. A. Dame, Jacksonville.—p. 114.  
Suprarenal and Thyroid Insufficiency. A. J. Wood, St. Petersburg.—p. 119.  
Syphilis as Public Health Factor. J. D. Gable, Washington, D. C.—p. 123.

### Journal of Immunology, Baltimore

January, 1922, 7, No. 1

- \*Study of Virulence of Meningococci for Man and of Human Susceptibility to Meningococcic Infection. G. D. Heist, S. Solis Cohen and M. Solis Cohen, Philadelphia.—p. 1.  
Action of Various Salts on Hemolysis. H. A. Purdy and L. A. Walbum, Copenhagen.—p. 35.  
\*Allergic Reaction of Tuberculous Uterine Horn. G. H. Smith, New Haven, Conn.—p. 47.  
Relationship of Various Antiorgan Serums. M. S. Fleisher, St. Louis.—p. 51.  
\*Bacillus Diphtheriae: Immunologic Types; Toxin-Antitoxin Relationship. W. H. Paxson and E. Redowitz, Glenolden, Pa.—p. 69.

**Virulence of Meningococci.**—It would appear from the observations made by Heist and the Cohens that so far as the resisting power of the blood is concerned the susceptibility of men, in general, to meningococcic infection is quite low. Meningococci from the spinal fluid are much more virulent for man than are the majority of the strains of meningococci which inhabit the throats of carriers. Some carrier strains are more virulent than others. Among those who have been in contact with a case of meningitis the percentage of carriers is sometimes very high, from 8 to 12 per cent. When meningococci, freshly isolated from the spinal fluid of a patient with cerebrospinal meningitis, are cultivated in capillary tubes of the whole coagulable blood of normal men, they are found to possess an ability to grow rapidly in that medium. This ability is not possessed by the majority of the strains of meningococci freshly isolated from the throats of carriers. Experiment has proved that there is a correlation between the ability of the meningococci (as well as certain other bacteria) to grow rapidly in whole coagulable blood and their virulence for the species from which the blood was taken. The spinal fluid strains of meningococci are much more virulent for man than are the carrier strains. Certain carrier strains grow better in whole coagulable human blood than do others. They are the more virulent for man. The majority of carrier strains are relatively low in virulence or are nonvirulent. The whole, coagulable blood of most normal men will permit the rapid growth of spinal fluid strains. This indicates that most men are susceptible to the attacks of meningococci that have passed through the human nervous system. The blood of but one among many normal men permits the rapid growth of carrier strains. This minority of men is more likely to develop meningitis after exposure to a carrier. It is probably among this group that most of the cases of meningitis occur.

**Allergic Reaction of Tuberculous Uterine Horn.**—The experiments recorded by Smith are an application of the principle of specific reactivity between antigen and its homologous antibody, employing the sensitive uterus as an indicator. A series of tests were performed in which the uterine horn of the tuberculous pig was suspended by the Schultz-Dale method, and to the bath solution urine from



different sources was added. The reactions obtained were extremely varied in character. With supposedly normal urines, as a rule, no reactions were secured with the amounts of urine employed; with urine from persons reported to have tuberculosis clinically, reactions were sometimes absent and at other times extremely sharp and analogous in every respect to the acute anaphylactic response. Tests were conducted by suspending a uterine horn from a tuberculous guinea-pig and a horn from a normal guinea-pig in the same bath of oxygenated Locke solution. After relaxation of the horns and the appearance of the regular rhythmic contractions, the urine from a case of tuberculosis was added to the bath solution (350 c.c.), usually from 3 to 5 c.c. In no instance has this amount of urine from any case induced a marked reaction in the normal horn while in some cases the tuberculous horn responded sharply. With seven of eight urines from known cases of tuberculosis, reactions of the tuberculous horn have been secured of greater or less intensity as compared with normal tissue.

**Diphtheria Bacillus Toxin-Antitoxin Relationship.**—Pawson and Redowitz were unable to confirm the contention that Group II, *B. diphtheriae*, toxin is not neutralized by standard antitoxin to the same extent as Group I toxin. The results of their experiments, which are reported in full, lead them to the conclusion that diphtheria antitoxin as produced by the injection of toxin obtained from Group I strains neutralized equally well the toxins produced by either Group I or Group II organisms. One, one and a half, and two units of standard antitoxin injected simultaneously with large doses of virulent cultures, protect guinea-pigs against both types of *B. diphtheriae*.

### Journal of Medical Research Boston

Oct.-Dec. 1921, 42, No. 5

Experimental Production of Functional Hypertrophy in Nerve Cell. W. D. Collier, Columbia, Mo.—p. 439.

Effect of Stored Glycogen on Autolysis of Liver Tissue. J. P. Simonds, F. H. Reuling and H. H. Hart, Chicago.—p. 455.

\*Experimental Pigment Cirrhosis Due to Copper and Its Relation to Hemochromatosis. F. B. Mallory, F. Parker, Jr., and R. N. Nye, Boston.—p. 461.

\*Heterotransplantation of Lens and Cornea. M. S. Fleisher, St. Louis.—p. 491.

Purification and Concentration by Desiccation of Hog Cholera Immune Serum. C. W. Duval and M. Couret, New Orleans.—p. 503.

Cloudy Swelling a Process of Stimulation. A. Davidman and D. H. Dolley, Columbia, Mo.—p. 515.

**Hemachromatosis of Liver Due to Copper.**—Chronic poisoning with salts of copper produces in the livers of rabbits in six months to a year a series of changes comparable in many ways with those found in the liver in a chronic disease in man known as hemochromatosis. The present extensive use of crude distilling apparatus in consequence of prohibition is likely to lead to an increase in the number of cases of hemochromatosis if the disease is due to chronic poisoning with copper.

**Heterotransplantation of Lens and Cornea.**—Fleisher found that the epithelium of the heterotransplanted lens survives in a state of good preservation for from twelve to fourteen days, while epithelium of the homoiotransplanted lens survives even as long as forty-two days. The epithelium of the heterotransplanted cornea survives only for about ten or fourteen days and shows marked degeneration before this time, while the epithelium of homoiotransplanted cornea survives even at the thirty-fifth day.

### Journal of Metabolic Research, New York

January, 1922, 1, No. 1

\*Experimental Studies in Diabetes. Series III. Pathology of Diabetes. 1. Hydropic Degeneration of Islands of Langerhans After Partial Pancreatectomy. F. M. Allen, New York.—p. 5.

\*Id. 2. Granule Stains of Islands of Langerhans of Diabetic and Non-diabetic Pancreas. W. B. Martin, New York.—p. 43.

Id. 3. Nervous Influences in Etiology of Experimental Diabetes. F. M. Allen, New York.—p. 53.

Id. 4. Role of Hyperglycemia in Production of Hydropic Degeneration of Islands. F. M. Allen, New York.—p. 75.

\*Id. 5. Influence of Circulatory Alterations on Experimental Diabetes. F. M. Allen, New York.—p. 89.

Experiments on Carbohydrate Metabolism and Diabetes. 4. Dextrose-Nitrogen Ratios in Partially Depancreatized Dogs. F. M. Allen and M. B. Wishart, New York.—p. 97.

\*Id. 5. Influence of Glucose Ingestion on Diuresis and Blood Composition in Nondiabetic and Diabetic Persons. J. W. Sherrill and H. J. John, Morristown, N. J.—p. 109.

**Hydropic Degeneration of Islands of Langerhans in Diabetes.**—Allen asserts that the hydropic degeneration of the islands of Langerhans is proved to be a specific diabetic phenomenon, produced solely by overstrain of the function of the cells by diets in excess of the weakened assimilative power. The rate of the anatomic change varies with the clinical condition, but with unchecked severity of diabetes a period of from four to seven days is generally required for development of the first positive vacuolation; maximum vacuolation may be attained in about a month; and in from six weeks to two months all beta cells may have disappeared from the pancreas. The hydropic change is probably reversible within certain limits, and even widely vacuolated cells may probably recover their former size and granulation, provided the cell membrane has not burst or the nucleus become too badly degenerated. The formation of numerous strands and heaps of duct cells, and the vacuolation of these and the epithelium of the smaller ducts, are described for the first time in the end stages of severe experimental diabetes. The significance of this phenomenon is hypothetic, but it may represent the exhaustion of a proliferative rather than of an endocrine activity. The existence of "total" diabetes from the standpoint of carbohydrate metabolism after the complete exhaustion or disappearance of the beta cells, though the alpha cells survive and retain full granulation, indicates that the beta cells alone furnish the internal secretion which is concerned in the sugar economy. The differences that still exist between such an animal and a totally depancreatized animal furnish evidence, first, that the profound cachexia following total pancreatectomy is not due solely to the failure of carbohydrate metabolism or the hyperglycemia or glycosuria resulting from this failure; and second, that the alpha, duct, acinar or other cells of the pancreas furnish an unknown internal secretion which is somehow important for the welfare of the organism. The demonstration of the nature of the hydropic change Allen asserts is important for the following reasons: Its presence affords a positive microscopic diagnosis of active diabetes. It completes the proof of the island theory of diabetes. It adds to the evidence of the essential identity of experimental and clinical diabetes. It explains the permanent lowering of assimilation in diabetes consequent on excessive diets. From a broader physiologic standpoint, it offers the only proved example of anatomic breakdown of cells due to overstimulation of an internal secretory function.

**Granule Stains of Islands of Langerhans.**—The results obtained from the application of special methods of staining to human diabetic material Martin says have not been conclusive. While these methods, by clearly revealing all tissue of island character, have confirmed the quantitative deficit of island tissue in certain cases of human diabetes; in other cases, however, where the routine stains show large numbers of normal appearing islands with or without hydropic changes in a few, the special stains may also reveal the usual proportion of alpha and beta cells with apparently normal granule contents.

**Influence of Circulatory Alterations on Experimental Diabetes.**—By operative methods Allen was able to reduce the arterial supply or the venous drainage of pancreas remnants to a considerable extent, or to increase the arterial circulation to at least a slight extent. All these circulatory changes failed to alter the assimilative function or the pancreatic structure in any way. In particular, they failed to produce vacuolation, "atrophy," fibrosis or any other specific island changes. The experiments therefore throw no light on the pathology of diabetes and afford no support for any circulatory or vasomotor theory of the etiology.

**Effect of Glucose Ingestion on Diuresis and Blood Composition.**—Sherrill and John state that glucose ingestion produces hyperglycemia attended with oliguria in normal and in many diabetic subjects. The accompanying fall in hemoglobin, red cell volume and to a less degree in red cell counts indicates a probable hydremic plethora at the same



time, or, at least, serves to rule out any concentration of the blood rather definitely. The usual fall in the plasma chlorid concentration is further evidence in favor of a retention of water in the blood or tissues or both. Emphasis is laid on the apparent dilution of the blood during the period of hyperglycemia and oliguria in all typical cases. It thus seems possible definitely to exclude the assumption that the oliguria is due to concentration of the blood through the osmotic withdrawal of water from it by the glucose in the intestine. Another easy assumption has been that glucose acts as a diuretic by its osmotic influence in the kidney. It might, thus, conceivably increase the quantity of glomerular filtrate, or cause water excretion through the tubules, or prevent resorption of water in the tubules, according to the theory of renal function adopted. The experimental facts contradict this assumption, inasmuch as oliguria is typically just as pronounced, or even more so, when there is marked glycosuria in addition to hyperglycemia and hydremia. Thus, in one case oliguria existed with 2.86 per cent. glycosuria. In a minority of the diabetic cases, especially of the severe group, glucose lacked antidiuretic influence and even served as an active diuretic, producing polyuria with or without hydremia. In no cases was the diabetes "total." Only a part of the glucose administered was either excreted during the experimental period or retained in the blood, so that proof is thus afforded of a partial retention of power either to utilize sugar or at least warehouse it in the tissues. No theoretical explanation of these differences is given.

### Journal of Pharmacology and Experimental Therapeutics, Baltimore

February, 1922, 19, No. 1

- \*Action of Diphtheria Toxin on Circulation. S. Yabe, Edinburgh.—p. 1.
- \*Stimulation of Respiration: Action of Respiratory Stimulants on Respiration When Depressed by Increased Intracranial Pressure, with Special Reference to Sodium Cyanid. A. S. Loevenhart, J. Y. Malone and H. G. Martin, Madison, Wis.—p. 13.
- Resistance of Rat to Consecutive Injections of Strychnin. E. W. Schwartz, Washington, D. C.—p. 49.
- Action of Drugs on Output of Epinephrin from Suprarenals. VIII. Morphin. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 59.
- Influence of Muscular Exercise on Normal Cats Compared with Cats Deprived of Greater Part of Suprarenals, with Special Reference to Body Temperature, Pulse and Respiratory Frequency. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 87.
- Influence of Morphin on Normal Cats and on Cats Deprived of Greater Part of Suprarenals, with Special Reference to Body Temperature, Pulse and Respiratory Frequency and Blood Sugar Content. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 97.

**Action of Diphtheria Toxin on Circulation.**—Yabe noted that the effects of diphtheria toxin on the circulation and respiration only appear many hours after its injection, even when a dose that is many times that ultimately fatal is injected intravenously. All attempts to analyze its action in acute experiments are, therefore, futile, and further light can be thrown on its effects only by examining the condition of animals subjected to it many hours previously and comparing their symptoms with those of controls. In a series of such experiments the blood pressure was found to be lower than in the controls, and this appeared to be due to failure of the central vasomotor mechanism. No evidence of direct action on the peripheral vasoconstrictor nerves, or on the vessels of the heart, was obtained.

**Stimulation of Respiration by Sodium Cyanid.**—Sodium cyanid is the most reliable stimulant to the respiration when depressed by increased intracranial pressure, according to Loevenhart et al. It exercises its stimulating action on the respiratory center directly and acts independently of any change which it produces in the circulation. The changes in the blood pressure following therapeutic doses of sodium cyanid are insignificant. The effects of sodium cyanid last but a very brief period, usually not over one minute, but occasionally stimulation may last as long as thirty minutes. Stimulation of the respiration following single injections of cyanid may be repeated at will. By giving cyanid continuously at the proper rate, continuous stimulation of the respiration may be maintained for hours. Sodium cyanid must be administered intravenously. No other method of giving the drug is at all satisfactory. The dosage of sodium cyanid for stimulation of the respiration in the dog by single injections

is from 1 to 3 mg. The dosage for continuous injection to maintain an already established stimulation is approximately 0.25 mg. (0.5 c.c. of a hundredth normal solution) per minute. Strychnin sulphate, given intravenously, stimulated the respiration in from 25 to 50 per cent. of the experiments. The stimulation of the respiration by strychnin is not so prompt or reliable as in the case of sodium cyanid, but the stimulation following a single dose of strychnin lasts much longer than in the case of the cyanid. Atrophin sulphate was found to be a most unreliable respiratory stimulant. In some cases, brief but definite stimulation of the respiration by caffein citrate was noted. Lactic acid in most cases had no stimulating action.

### Journal of Urology, Baltimore

December, 1921, 6, No. 6

- \*Perineal Prostatectomy; Detailed Study of One Hundred Consecutive Cases. A. B. Cecil, Los Angeles.—p. 399.
- \*Suprapubic Versus Perineal Prostatectomy; Comparative Study of Ninety Perineal and Thirty-Eight Suprapubic Cases. F. Hinman, San Francisco.—p. 417.
- Experiences with Radium in Cancer of Prostate. H. G. Bugbee, New York.—p. 459.

**Perineal Prostatectomy.**—Young's procedure has been carried out in every one of the one hundred cases analyzed by Cecil. No cases of perineal fistula occurred in the entire series. Of eighty-eight benign case in men who recovered from the operation and who were discharged from the hospital only when their wounds were closed, and urination had been definitely established, none has had retention of urine. One case of permanent incontinence occurred, which is explained by the fact that this man had previously had an operation for stricture, and in this way the external sphincter muscle had been destroyed. The prostatectomy mortality rate was 2 per cent., and this percentage is based on complete closure of the wound, and restoration of function. The two deaths occurred in hemiplegics who were at least 80 years of age. Both men died on the fourteenth day from pneumonia.

**Perineal Prostatectomy Preferred.**—A very detailed analysis of a large number of cases made by Hinman leads him to conclude that Young's method of perineal prostatectomy is superior to the Fuller-Freyer method of suprapubic prostatectomy. The fatalities have been surprisingly few and due to avoidable accidents. The functional results, even in earlier cases, are unusually good in view of the advanced and complicated conditions treated. The general results are much better than those obtained suprapubically. The cure cannot fail of being just as lasting and permanent.

### New York Medical Journal

Feb. 15, 1922, 115, No. 4

- Angina Pectoris. C. Allbutt, London.—p. 181.
- Significance of Peripheral Resistance in Circulatory Disturbances. W. Russell, Edinburgh.—p. 188.
- Relation of Peripheral Circulation to Diseases of Heart. J. Barr, Liverpool.—p. 190.
- Facies in Mitral Stenosis and Aortic Regurgitation. S. Russell-Wells, London.—p. 196.
- Meaning of Tachycardia in Relation to Mechanism of Responses of Heart. R. McN. Wilson, London.—p. 200.
- Premature Contraction and Its Significance. J. Strickland-Goodall, London.—p. 204.
- Cardiovascular Disorders Produced by Disease in Digestive Tract. N. Mutch, London.—p. 206.
- Heart in Chronic Pulmonary Tuberculosis. A. Latham, London.—p. 209.
- Paroxysmal Tachycardia. F. W. Price, London.—p. 212.
- Infective Endocarditis. B. Parsons-Smith, London.—p. 215.
- Relationship of Precordial Distress to Extracardiac Conditions. E. C. Reifenstein, Syracuse, N. Y.—p. 219.
- Cardiac Index of Goiter. A. E. Renner, New York.—p. 223.
- Estimating Intrapericardial Pressure. G. A. Stephens, London.—p. 225.

### Texas State Journal of Medicine, Fort Worth

February, 1922, 17, No. 10

- Principles of Cardiology. C. M. Grigsby, Dallas.—p. 471.
- Treatment of Hypertension. C. T. Stone, Galveston.—p. 475.
- Treatment of Cardiac Decompensation. A. E. Greer, Houston.—p. 479.
- Etiology and Diagnosis of Renal Hematuria. H. R. Dudgeon, Waco.—p. 482.
- Kidney and Ureteral Calculi. A. O. Singleton, Galveston.—p. 486.
- Treatment of Impassable Strictures of Urethra by Combined Suprapubic Cystotomy and External Urethrotomy. F. Pascha, San Antonio.—p. 489.
- Albuminuric Retinitis. J. J. Crume, Amarillo.—p. 491.



**U. S. Naval Medical Bulletin, Washington, D. C.**

February, 1922, 16, No. 2

- \*Size of Normal Heart, Teleroentgenogram Study. H. W. Smith and W. A. Bloedorn, U. S. N.—p. 219.
- Physical Development of Midshipmen. E. B. Taylor, U. S. N.—p. 239.
- Some Elements of Leadership. E. L. Munson, U. S. A.—p. 251.
- With Anson to Juan Fernandez. W. M. Kerr, U. S. N.—p. 265.
- Form "X" Card. A. Farenholt, U. S. N.—p. 283.
- Results of Refraction of Seventy-Six Midshipmen. F. A. Hughes, U. S. N.—p. 285.
- \*Recurrence in Case of Hydatid Disease. C. S. Norburn, U. S. N.—p. 288.
- \*Diagnostic Sign Differentiating Between Eruptions Caused by Cowpox Vaccination and Those Due to Smallpox and Chickenpox. P. R. Stalnaker, U. S. N.—p. 290.
- Report of "Hallux Valgus" (Bunion) Operations, Using Mayo's Technique. A. H. Robnett, U. S. N.—p. 291.
- Hospital Standardization Program of American College of Surgeons. R. C. Holcomb, U. S. N.—p. 293.

**Size of Normal Heart.**—Owing to great and unexplained variability of the heart, Smith and Bloedorn assert that there will always be difficulty, whatever means be used, to ascertain the size of the individual heart under observation. Hence, any conclusion as to the relative size of a heart based on comparative dimensions, ratios or relations to body landmarks is fallacious and should be applied clinically with great reserve.

**Recurrence of Hydatid Disease.**—Norburn relates the case of a man who early in 1918 had an attack of acute generalized abdominal pain for which a laparotomy was performed. The appendix and a cyst of the liver were removed. He has never been real well since. He entered the hospital again in January, 1921, complaining of nervousness and a tumor rather hard, smooth in outline and about the size of a hen's egg, in the abdominal wall behind the right rectus muscle just above the umbilical level and close to the midline. No sense of fluctuation or hydatid fremitus could be made out. The spleen was enlarged, extending about two fingers below the costal margin. The eosinophils were only 1 per cent. At the operation the tumor was found to be behind the posterior rectus sheath, bulging this structure forward. The tumor was tapped and a very clear, colorless fluid was drawn off. A cyst holding about a quart was found overlying the inner anterior aspect of the left kidney, attached to the posterior abdominal wall and to the intestines. Scattered about on the peritoneal wall of the bowel could be seen raised yellowish white spots about 0.5 cm. in diameter. Microscopic examination of the endocyst showed the scolices of echinococcus. This case shows how low the eosinophil count may be in hydatid disease, and, that the dissemination of the disease probably occurred from a rupture of the cyst at the time of the appearance of abdominal symptoms in January, 1918, or that it followed a soiling at the first operation. This emphasizes again the great importance of using, during operation, every precaution to prevent escape of the contents of an echinococcus cyst into the abdominal cavity.

**Differentiation of Cowpox, Smallpox and Chickenpox.**—Stalnaker has noted that when bodily eruption caused by cowpox vaccinations occurs, the eruption is never seen in the mucous membrane of the roof of the mouth (either the hard or the soft palate). If an eruption is present in the roof of the mouth it is certain not to be the result of cowpox vaccination. On the other hand, he has never seen a single case of either smallpox or chickenpox in the eruption stages in which an eruption was not present in the mucous membrane of the roof of the mouth.

**Virginia Medical Monthly, Richmond**

February, 1922, 48, No. 11

- Radiculitis and Neuritis Contrasted. T. A. Williams, Washington, D. C.—p. 613.
- Pyelitis. R. S. Fitzgerald, Richmond.—p. 618.
- Vesical Diverticulum; Report of Four Cases. S. B. Cary, Roanoke.—p. 622.
- Hepatic Function. W. T. Vaughan, Richmond.—p. 625.
- \*Advantages and Limitations of Skin Tests for Protein Sensitization in Bronchial Asthma, Hay Fever and Allied Conditions. J. M. Hutcheson, Richmond.—p. 629.
- \*Chronic Pancreatitis. A. G. Brown, Jr., Richmond.—p. 633.
- Treatment of Esophageal Spasms. J. R. Verbrycke, Jr., Washington, D. C.—p. 635.
- Clinical Applications of Basal Metabolism Determinations. J. H. Smith, Richmond.—p. 640.

- Clinical Syndromes of Vascular Crises. W. H. Higgins, Richmond.—p. 643.
- Early Recognition of Acute Appendicitis. E. L. Kendig, Victoria, Va.—p. 646.
- Operative Treatment of Duodenal Ulcer. A. S. Brinkley, Richmond.—p. 649.
- \*Recurring Volvulus of Descending Colon and Sigmoid Flexure with Megacolon. M. Willis, Richmond.—p. 651.
- History of Medicine in South. W. A. Lewis, Enterprise, Ala.—p. 655.
- Determination and Significance of Hydrogen Ion Concentration. E. C. L. Miller, Richmond.—p. 660.

**Skin Tests in Bronchial Asthma and Hay-Fever.**—From a review of the records of 100 patients on whom Hutcheson has made skin tests, the deductions as to the frequency with which positive reactions occur are approximately those published by others for asthma and hay-fever. There were seventy cases showing typical bronchial asthma, but twenty-two of these gave evidence, in addition, of one or more other conditions. Of these seventy cases, thirty-three, or 47 per cent., gave positive skin tests to one or more proteins. Seasonal hay-fever was the predominating complaint in eighteen cases, and sixteen of these gave positive skin tests, but nine showed also one or more of the other syndromes. The remainder of the cases consisted of urticaria, angioneurotic edema, eczema, perennial hay-fever, or combinations of these. Ten cases in which urticaria was the chief complaint gave positive tests in five, while of four cases of perennial hay-fever two gave positive reactions to proteins. The results of treatment in the sensitive cases were variable. As a rule, where the protein was definitely determined and the patient capable of intelligent and thorough cooperation, the results have been good. In a number of instances skin tests revealed multiple sensitization, and it was difficult to determine which protein was giving trouble. Hutcheson's cases showed that the earlier in life the symptoms begin, the more apt is the patient to prove sensitive to some known protein. In deciding to what substances an individual is sensitive skin tests are essential, but Hutcheson cautions that skin tests alone may be misleading, and like every other form of laboratory investigation must be checked carefully by an adequate history and examination of the patient.

**Treatment of Chronic Pancreatitis.**—Brown reports a case of this kind in which the absence of free hydrochloric acid and the early evacuation of the stomach contents indicated the use of hydrochloric acid in rather large doses. On the administration of hydrochloric acid with meals, the first improvement was noted. The diet was the next step. The food was made free of fat. Pancreatic extract was administered with lactate of calcium. The relief from the symptoms of frequent large oily and fatty bowel movements was marked. The patient's general improvement was immediate.

**Recurring Volvulus of Colon with Megacolon.**—Willis is of the opinion that if surgeons keep in mind the possibility of the occurrence of this condition, and in patients with a history of long continued, obstinate constipation where physical examination reveals a much distended abdomen, subject the patient to careful roentgenologic study, megacolon will be recognized even more frequently than it has been in the past.

**FOREIGN**

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

**Bristol Medico-Chirurgical Journal**

December, 1921, 38, No. 144

- Some Phases of Quackery in Relation to Diseases of Eye. C. H. Walker.—p. 129.
- Repair of Bone Injuries. E. W. H. Groves.—p. 142.
- Rôle of Dilute Acids in Infection. I. W. Hall and A. D. Fraser.—p. 158.

**Journal of Laryngology and Otology, Edinburgh**

February, 1922, 37, No. 2

- Pathologic and Clinic Aspects of Deaf-Mutism. J. S. Fraser.—p. 57.
- Auto-injector for Intralaryngeal and Tracheal Medicated Oils. B. S. Jones.—p. 76.
- Complications Following Removal of Tonsils. G. E. Martin.—p. 80.
- Case of Suppuration in Subdivided Maxillary Antrum with "Nasal Ganglion Neurosis" Suggesting Malignant Disease; Operation; Recovery. J. Dundas-Grant.—p. 88.



**Lancet, London**

Feb. 1, 1922, 1, No. 5136

- \*Faulty Food in Relation to Gastro-Intestinal Disorder. R. McCarrison.—p. 207.
- \*Experiments on Immunity to Tumor Growth. H. Chambers, G. M. Scott and S. Russ.—p. 212.
- \*Attempt to Procure Immunity to Malignant Disease in Man. T. H. Kellock, H. Chambers and S. Russ.—p. 217.
- Roentgen-Ray Diagnosis of Gastric Ulcer. A. E. Barclay.—p. 219.
- \*Serologic Test in Typhus. W. J. Wilson.—p. 222.
- Earliest Stage of Senile Cataract. H. Smith.—p. 223.
- Loss of Speech, Memory and Hearing Following Injury: Recovery After Operation. J. J. Waddelow.—p. 224.
- Spontaneous Renal Fistula. E. F. Guy.—p. 225.

**Faulty Food and Gastro-Intestinal Disorder.**—This paper was published in THE JOURNAL, Jan. 7, 1922, p. 1.

**Irradiated Tumor Cells Confer Immunity in Animals.**—Experiments have been undertaken by Scott and Russ to obtain more information with a view to using irradiated tumor for the treatment of human cancer, and this paper gives the results obtained. The experimental results confirm and extend previous work on the immunity in animals to tumor growth which can be set up by irradiated tumor cells. If the processes controlling the growth of tumors in animals have an analogy in man, then these observations appear to have two bearings on the treatment of malignant disease. The first is that some degree of immunity may result from the adequate irradiation of a malignant tumor in the body, but to insure this in practice is generally of great technical difficulty. The second is that the treatment of a patient with irradiated tumor cells, after the surgical removal of the growth, may help to set up a state of resistance to the disease.

**Immunizing Cancer Patients Against Their Own Tumor Cells.**—Kellock, Chambers and Russ have been attempting to immunize patients suffering from cancer against their own tumor cells. The number of cases treated (thirty) is too small, and the time that has elapsed too short, to form an opinion of much value of the effect on the progress of the disease. In some of the cases the disease was very advanced, and in two there were probably visceral metastases at the time of treatment. Five patients with carcinoma of the breast, diagnosed by microscopic examination, were treated between November, 1920, and June, 1921. In all these a limited operation was performed, the primary growth only being removed and the axillary glands left, except in one case. When last seen (in January, 1922) these patients were all in good health, without evidence of recurrence. In reviewing these results it is stated that in almost all the cases the stage of the disease rendered any other form of treatment inadvisable. In view of the results of some of the more recent cases, it may be possible to improve on them by adopting the treatment earlier, before dissemination of the disease has occurred.

**Serologic Test in Typhus.**—Although the nature of the specific etiologic agent in typhus is still uncertain, and although no simple laboratory test apart from animal experiment is yet available for its recognition, nevertheless, Wilson says, the almost constant presence of heterologous agglutinins in the typhus patient's serum enables a laboratory diagnosis to be made with almost unerring accuracy at the end of the first week of the disease. These agglutinins act on a great variety of micro-organisms, but chiefly on intestinal bacilli; among the latter the strain of *B. proteus* isolated by Weil and Felix and named X 19 has been most employed for the purpose. When emulsions are made of such desiccated bacilli they can be for some weeks preserved with 0.1 per cent. liquor formaldehyd without their sensitiveness being impaired. These facts permit of preparing a stable sensitive diagnosticum and dispensing with living cultures, the advantage being obvious in military service in the field and also in allowing the use of an emulsion of known sensitiveness. It is well known that *B. proteus* X 19 in the living state is apt to vary as regards its agglutinability. Desiccation of bacilli renders them less agglutinable by specific serums, and to this rule *B. proteus* X 19 is no exception. It would therefore seem that the typhus serum agglutinins for X 19 are different from those produced in the blood of an animal by inoculation. Coliform, nonlactose fermenting bacilli are occasionally found in typhus urine and are agglutinated by the serums not only

of the individual patient but of other patients. On one occasion a strain of *B. pyocyaneus* was isolated which was agglutinated by a few of the typhus serums.

**National Medical Journal of China, Shanghai**

December, 1921, 7, No. 4

- \*Plague in Orient with Special Reference to Manchurian Outbreaks. Wu Lien Teh.—p. 178.
- Menace of Insanity to Popular Government. A. H. Woods.—p. 201.
- Results of Refraction in Pekin Union Medical College. Dzen Ts-Tswang.—p. 206.
- Activities of China Medical Board. R. S. Greene.—p. 218.

**Plague in China.**—Wu Lien Teh reports on a very extensive research made by him. Pneumonic plague epidemics arise as a secondary manifestation of bubonic plague. The prevalence of purely septicemic cases toward the end of the epidemic is significant as a probable explanation of its decline and termination. Subacute or chronic plague may exist among the tarabagans in Mongolia and Siberia, giving rise to periodical outbreaks of bubonic plague in man, as a result of direct infection from injury due to skinning by trappers or marmot eaters. The tarabagan is easily susceptible to pneumonic plague produced by inhalation of the *B. pestis* in spray form. The existence of pneumonic plague carriers has been proved in the 1921 Manchurian epidemic. Rooms in which patients have died of pneumonic plague are not particularly dangerous. In four instances recorded, sick patients traveling in railway cars have not infected their fellow passengers. Disinfectants and antiseptics, even in strengths above those usually employed, have very little effect on plague sputum. Alcohol is the surest means of sterilizing the hands and gloves in plague work. The author has cultivated plague bacilli from seemingly dry sputum of patients. the mask is the principal means of personal protection against pneumonic plague.

**South African Medical Record, Cape Town**

Jan. 14, 1922, 20, No. 1

- \*Hepatic Carcinoma in Natives and Its Frequent Association with Schistosomiasis. J. H. H. Pirie.—p. 2.
- Quinin Amaurosis. J. S. Du Toit.—p. 8.

**Cancer of Liver and Schistosomiasis.**—This article was also published in the *Medical Journal of South Africa*, December, 1921, and was abstracted in THE JOURNAL, Feb. 18, 1922, p. 546.

**Tubercle, London**

February, 1922, 3, No. 5

- \*Pulmonary Tuberculosis and Intestinal Stasis. H. M. Davies.—p. 193.
- Hemoptysis and Its Treatment. I. Classification and Source. C. Riviere.—p. 202.
- \*Tuberculosis in Childhood. F. S. Tinker.—p. 211.

**Pulmonary Tuberculosis and Intestinal Stasis.**—The presence of amino-acid derivatives in the urine, Davies states, is an indication of intestinal stasis and of the invasion of the lower coils of the ileum by bacteria which normally should be localized to the large intestine. The presence of these amino-acid derivatives in the urine affords an indication, easily available, of the state of the intestinal tract at any period of time. Frequent examinations have enabled Davies to make what appear to him to be some extremely useful deductions as to the influence of intestinal stasis on the course of pulmonary tuberculosis, on the course of the complications of that disease and on the necessity of certain precautions during the treatment by operative measures. Two facts established were: (1) the great frequency of skatoxyl in patients suffering from tuberculosis of the lungs; (2) the ineffectualness of drugs to produce more than a temporary diminution of the sulphuric ethers, but the magic charm (though not infallible) as a temporary measure, of castor oil and of mercurous chlorid and of the extreme usefulness, in certain cases, of kaolin. Therefore, to treat tuberculosis of the lungs as an isolated lesion, leaving out all consideration of the gastro-intestinal tract, Davies says is to treat a part only of the disease.

**New Sign in Pulmonary Tuberculosis in Children.**—Alteration in the position of the scapula is described by Tinker as a new sign for the diagnosis of pulmonary tuberculosis in children. Loss of muscle tone is the cause of the malposition.



**Archives des Maladies de l'App. Digestif, Paris**

1922, 12, No. 1

- \*Dilatation of Esophagus and Cancer. A. Cade and Morenas.—p. 1.  
\*Paralysis of Left Diaphragm in Ulcer of the Stomach. L. Bouchut and P. Francolin.—p. 9.  
\*Treatment of Sigmoid Megacolon with Acute Occlusion. G. Miginiac.—p. 22.

**Cancer in Megesophagus.**—Cade and Morenas have been able to find records of only one case like the one they report in which a cancer developed in the abnormally large esophagus. Their patient was a man of 29, and in both the cases the dilatation of the esophagus had allowed the malignant disease to develop without characteristic symptoms. In both cases the cancer was a necropsy surprise. In the man of 47, even the dilatation of the esophagus had not been recognized during life. The rapid loss of weight, 13 kg. in two months, might have suggested malignant disease.

**Paralysis of Diaphragm with Gastric Ulcer.**—In the four cases described, the old hard ulcer of the lesser curvature had entailed a subinflammatory process in adjoining tissues, which had finally reached the diaphragm and resulted in paralysis and then sclerosis of this half of the diaphragm. The process spreads from below like the downward process with pleurisy. In two of the cases, gastric functioning was restored to clinically normal by a gastro-enterostomy, but the paresis of the diaphragm was not modified. Discovery of paralysis of half of the diaphragm may aid sometimes in detection of a gastric ulcer.

**Sigmoid Megacolon.**—Miginiac relates that of 27 patients with acute ileus from megacolon above the sigmoid flexure, over 74 per cent. were cured by a prompt operation. Emergency resection, making an artificial anus at the spot, seems to offer the best prospects. Resection followed by immediate enterorrhaphy has occasionally given fine results. The artificial anus can be closed later at will. It is impossible to reduce a megacolon as if it were normal bowel, and purely palliative measures are futile. The 27 cases are tabulated, Pauchet having 6 to his credit with 4 recoveries; in one case cecostomy had proved useless, and resection of the sigmoid megacolon gave only temporary relief, but a permanent cure followed total colectomy. In his latest case, he resected the entire colon at once, to begin with, and the patient was cured immediately, but traction from the shriveling mesentery induced strangulation of the artificial anus loop later.

**Archives de Médecine des Enfants, Paris**

January, 1922, 25, No. 1

- \*Preferable Route for Giving Quinin to Children. Suzuki.—p. 1.  
Works of Polish Pediatricists in French Journals. J. Comby.—p. 15.  
The Mongolian Blue Spot in Peru. R. Eyzaguirre.—p. 19. Idem in Brazil. C. Ferreira.—p. 23.  
\*Cirrhosis of Liver and Heart. E. Lasnier and Alice Armand-Ugón.—p. 25.  
\*Congenital Rachitis plus Osteomalacia. M. de Biehler.—p. 36.  
\*Mikulicz' Disease. J. Comby.—p. 41.

**Treatment of Malaria in Children.**—Suzuki has been studying for years the best mode for administering quinin to children, and has decided that by the rectum absorption is more rapid than by other routes, while this avoids the drawbacks of other methods of giving quinin to children. His tables of the minimal fatal dose and concentration by the rectum for rabbits, and of the bactericidal action of different quinin salts are confirmed by the clinical charts in a typical series of cases of malaria in children. The data presented testify, he declares, that a 0.25 or 0.50 per cent. solution of quinin hydrochlorid given by the rectum is the most effectual method of administering quinin. He has applied it with conclusive results in treatment of tropical malaria at all ages in tropical regions, and commends it especially for treatment of children. In the cases he reports, a single rectal injection of 100 or 150 c.c. of the 0.25 per cent. solution cured the child completely, the malaria plasmodium disappearing from the blood and the spleen subsiding to normal size with no recurrence during the months to date.

**Cirrhosis of Liver and Heart.**—The necropsy of the girl of 10 confirmed the diagnosis of cirrhosis of the liver and heart of the Hutinel type, and revealed a large tuberculous nodule

in the right auricle, but the lungs seemed to be intact. The foramen of Botalli was patent, which allowed a crossed embolism in the brain.

**Congenital Rachitis Plus Osteomalacia.**—The intense rachitis was followed by progressive softening of the bones, with fractures which did not heal. The child died from pneumonia at the age of 14 months.

**Mikulicz' Disease in Children.**—Comby gives the details of a case of Mikulicz' disease in a girl of 13. It had been mistaken for mumps at first. He analyzes the similar cases on record. In one, syphilis was evidently a factor, and the salivary and lacrimal glands subsided to normal size under specific treatment.

**Bulletin de l'Académie de Médecine, Paris**

Jan. 17, 1922, 87, No. 3

- Committee Report on Hygiene of Preparatory Education.—p. 56.  
\*Vaccination Against Typhoid. A. Loir and H. Legangneux.—p. 79.  
\*Anatomic Metrostatics. B. Roussy.—p. 83.  
Surface Tension of Contents of Fasting Stomach. L. Pron.—p. 87.

**Benefit from Vaccination Against Typhoid.**—At Havre there were seventy-two cases of typhoid last fall but all were in women or children; only one case was known in a man, and in him the disease was attenuated. All the men in town had been vaccinated during the war.

**Measurement of Surface Area.**—Roussy comments on the important functions of the skin, and shows how to measure its area on the horse, as he has worked out the geometrical law for this anatomic metrostatics. He multiplies the average perimeter of the body by its average peripheral height. This requires records of at least 15 perimeters and 6 up-and-down lines, as he illustrates.

**Bulletin Médical, Paris**

Jan. 21, 1922, 36, No. 4

- Spasm in the Stomach. G. Lyon.—p. 47.  
Vaccine Therapy of Infections with Multiple Bacteria. A. Grimberg.—p. 51.

**Journal de Médecine de Bordeaux**

Jan. 10, 1922, 94, No. 1

- Wounds of Nervous System During the War. A. Pitres.—p. 7.  
Subcutaneous Injections of Neo-Arsphenamin in Interstitial Keratitis. C. Cabannes and J. Chavannaz.—p. 10.  
\*Active Treatment of Mumps. H. Mallié.—p. 12.  
Electrodiagnosis of Pleuropulmonary Tuberculosis. J. L. Roumaillac.—p. 14.  
Medical Treatment of Amebic Hepatitis. J. Carles.—p. 16.  
\*Treatment of Malaria. Grassetau.—p. 18.

**Serotherapy of Mumps.**—Mallié has compiled records of a large number of cases of mumps, mostly in soldiers, treated by injection of diphtheria antitoxin. All writers agree that it relieves the symptoms and shortens the course. The relief is so constant that the men asked for the injection at the slightest signs of orchitis. As a preventive, Salvaneschi stated that orchitis did not develop in any of his twenty-six cases thus treated, but others were less fortunate, so that there were nine cases of orchitis after the antitoxin treatment, in a total of 128 cases. The doses had been 20 c.c. up to 80 c.c. Others have tried normal horse serum, with the result of testicle complications in two of nine cases and one of primary mumps orchitis. Mallié treated seventy-four soldiers with mumps by intramuscular injection of a colloidal metal followed in half an hour with acetyl-salicylic acid internally. Orchitis developed in 15 per cent. but prompt relief and shortening of the course were pronounced. The results were thus the same as with the antitoxin. He remarks in conclusion that these experiences demonstrated at least the harmlessness of these methods, and he is convinced of their actual efficacy. On the basis of these experiences he applied the same treatment in 163 cases of measles, and was impressed with the brief and mild course, without bronchial complications.

**Treatment of Malaria.**—Grassetau outlines the combined tonic and antidyspepsia medication, to supplement the quinin, which he applied in 1,504 cases at the malaria hospital in his charge, and all seem to be permanently cured.



**Journal de Radiologie et d'Electrologie, Paris**

December, 1921, 5, No. 12

Electrocardiography During Electrocutation. Cluzet and Bonnamour.—p. 529.

Radiography of Cranium and Face. H. Josse.—p. 534.

French and German Methods of Dosage in Deep Roentgenotherapy. A. Gunsett.—p. 543.

Congenital Malformation of Metacarpus. Drevon.—p. 552.

**Lyon Chirurgical**

November-December, 1921, 18, No. 6

\*Pathologic Physiology and Treatment of Edematous Stumps. R. Leriche.—p. 709.

\*Cure of Femoral Hernia with the U Suture. G. Piotrowski.—p. 715.

Congenital Hernia of Diaphragm. M. G. Morel.—p. 730.

Fracture of Scaphoid Bone. E. Destot.—p. 741.

**Edematous Stumps.**—Leriche refers to the swelling of a stump that has seemed to have healed normally, and even been fitted with a prosthesis. The edema is like a trophic ulcer, the active proliferation of the axis cylinders in the end-bulb of the distal stump, and their straggling in abnormal paths, start a vasodilating reflex which interferes with the normal nourishment of the tissues and aggravates existing disturbances. The aim in treatment is to excise the end-bulb and prevent its return. The best means for this seems to be to sever the nerve trunk some distance above, and then suture the ends together again at once. By this means the proliferating axis cylinders from the distal stump travel down the conduits in the peripheral stump instead of aimlessly straggling and setting up reflex irritation.

**Femoral Hernia.**—Piotrowski states that the U suture method he describes is extremely simple and an absolute cure. After the hernial sac has been opened, the bowel reduced and the sac ligated, a needle is passed from 2 or 3 cm. above Poupart's ligament down under Cooper's ligament, grazing the edge of the pubis and catching up the periosteum. The needle is then threaded with silk which is drawn through, and the needle is then introduced 1 cm. beyond, and the other end of the silk is drawn up. The U suture thus taken wards off danger of recurrence, he says, and the operation proved a complete success in 67.6 per cent. of the 108 cases in which it has been applied. There was strangulation in all but fifty-three cases. The harmlessness and efficacy of this technic encourage insistence on correction of femoral hernias before they reach the dangerous strangulation stage.

**Paris Médical, Paris**

Dec. 31, 1921, 11, No. 53

\*Juxta-Articular Nodules. A. Cange and R. Argaud.—p. 509.

\*Intratracheal Injections in Pulmonary Tuberculosis. Balvay.—p. 514.

\*Eczema and Its Metastasis. Veyrières and Jumon.—p. 519.

**Juxta-Articular Nodules and Syphilis.**—Cange and Argaud report still another case in which the connection between the juxta-articular nodules and syphilis is unmistakable. Other manifestations of syphilis, the structure of an excised nodule, and the benefit from specific treatment confirmed the syphilitic nature of the nodules.

**Intratracheal Injections in Treatment of Tuberculosis.**—Balvay's experience in this line has already been mentioned in these columns (March 12, 1921, p. 757). He here states that further experience has confirmed the great relief that may follow intratracheal injection of 2 c.c. of a medicated vegetable oil. It does not cure the pulmonary tuberculous process, but it renders respiration and expectoration easier, and brings a euphoria which favorably modifies the whole clinical picture.

**Eczema in Children and Its Metastasis.**—The question whether curing the eczema merely "drives it in," as the layman says, is discussed from various standpoints. There is absolutely no basis for this assumption. The coincidence of eruptions and of bronchial disturbances is probably the explanation of this belief in the metastasis of eczema, but closer observation will show that they develop together, or the bronchitis may precede the eruption; it rarely develops as the eruption disappears. A tendency to prurigo may manifest itself alternately in bronchi or skin. The writers have known cases in which this alternating asthma returned occasionally up to the age of 20, long after the skin manifestations

of the prurigo had been outgrown. The possibility of this should always be considered in cases of asthma in the young.

**Presse Médicale, Paris**

Jan. 18, 1922, 30, No. 5

\*Chronic Lumbago. J. A. Sicard and J. Forestier.—p. 45.

Subacromial Luxation from Muscular Action. Costantini.—p. 48.

Deep and Penetrating Roentgen Ray Treatment. H. Lebon.—p. 49.

**Chronic Lumbago.**—Sicard and Forestier refer to chronic rheumatismal pain in the lumbar region with negative roentgen-ray findings, rebellious to the usual measures, in cases in which tuberculosis, syphilis, the gonococcus, posttyphoid spondylitis, and cancer metastasis can be definitely excluded. In five cases described, the pains had dragged along for several years, incapacitating the patients, but without sphincter disturbance. The vertebral muscles are stiff and the patient stoops; this does not occur with disease of the spinal nerve roots, as in tabes and zona, no matter how severe the pains. The seat of the process causing the lumbalgia is in the funiculi, not in the nerve roots. This assumption was confirmed by the cure after laminectomy. The aspect of the epidural space in one case is illustrated, showing a series of five grooves in the fatty tissue. They smoothed out after the operation. In all cases of funiculitis from any cause, the muscles of the spine are stiff. This in itself differentiates funiculitis from radiculitis, and removal of the laminae of three to five vertebrae has always relieved the funiculitis by opening up the intervertebral foramina, and resulted in a permanent cure.

Jan. 25, 1922, 30, No. 7

\*Resorption of Gases in the Pleura. E. Rist and A. Strohl.—p. 69.

\*Access to Stab Wound of Heart. G. Miginiac.—p. 71.

**The Intrapleural Pressure.**—Rist and Strohl explain how the laws of general physics control the diffusion and absorption of gases in cavities lined with serous membrane.

**Access to the Heart.**—Miginiac's illustrations confirm the ample opening up of the heart which is realized by cutting the sternum across at top and bottom and then slitting it lengthwise and turning back the halves. They fold back parallel and easily, leaving an almost square opening. By working the fingers up back of the sternum it is loosened up ready to slit. In the case described the pericardium was slit and turned back, and six stitches were taken to suture the stab wound, made with tailors' scissors. The black blood spurted to a height of 30 cm. The 15 mm. wound was in the right auricle, and hemorrhage was arrested with forceps. The pulse tracings were soon normal and the three months' pregnancy was not interfered with. The hand could be introduced flat in the opening made by turning back the sternum flaps.

**Schweizerische medizinische Wochenschrift, Basel**

Jan. 5, 1922, 52, No. 1

Physiology of the Respiration. L. Asher.—p. 1.

Pathology of the Respiration. R. Staehelin.—p. 8. Conc'n No. 2.

Scleroderma in the New-Born. Bernheim-Karrer.—p. 12.

Antigen for Own Urine Reaction. W. Lanz.—p. 15.

Jan. 19, 1922, 52, No. 3

\*Prophylaxis of Goiter. H. Hunziker and M. v. Wyss.—p. 49.

\*Bovine and Human Tuberculosis. W. Pfenninger.—p. 54.

Biologic Import of Vitamins. E. Glanzmann.—p. 57. Conc'n No. 4, p. 84.

\*Pregnancy Hypertrophy of the Pituitary. P. Jung.—p. 61.

Abortive Treatment of Pain in Acute Infections. W. Roemisch.—p. 62.

**Prophylaxis of Goiter.**—Half of the children in the Adliswil schools were given once a week for the school year a tablet containing 0.5 gm. cocoa and 0.001 gm. potassium iodid. This was kept up until each child had thus been given a total of 0.04 gm. of the iodid. The findings in 745 children are tabulated, comparing the 339 treated children with the 406 non-treated. The results apparently confirm Hunziker's assertion of seven years ago that the thyroid in mammals hypertrophies as a defensive reaction to iodine starvation, and it returns to normal size when iodine is supplied in the physiologic proportions. The minute amounts given these children at Adliswil answered the physiologic demand; more than this would probably be injurious.



**Bovine Tuberculosis.**—Pfenninger concludes his study of the relations between bovine tuberculosis and human tuberculosis by relating that he, with Hruska, applied the fixation of complement test to several hundred cattle just before slaughtering. A positive reaction was obtained in 60 per cent. of those with tuberculous processes only in glands, and in 94 per cent. of those with tuberculous processes in lungs and glands or in lungs and serous membranes, and in 100 per cent. of those with generalized tuberculosis. A positive reaction was obtained in only 2 per cent. of the healthy cattle. Neither antiserums nor vaccines nor chemotherapy have to date proved successful in protecting cattle against tuberculosis, but preventive vaccination of calves seems to be conferring an artificial resistance like that of natural immunity. Besredka has shown that by having the suspension of bacilli inhaled, the young cattle can stand up to ten times the fatal dose by other routes, and Pfenninger, by having the young animals inhale antigens of different kinds, in the usual doses, has been successful in inducing the production of antibodies for different infections. With Besredka's tuberculosis antigen, in particular, he induced profuse production of antibodies which could be readily estimated by the intensity of the response to fixation of complement tests. The prospects seem to be very promising, he reiterates, for this method of solving the problem of preventive vaccination against tuberculosis. Before the method can be applied to human beings, it should be given extensive trials on animals. The conditions of the infection in man and animals are so much alike that—even from the standpoint of research on prevention alone—bovine tuberculosis is of enormous importance.

**Pregnancy Hypertrophy of the Pituitary.**—Jung recalls Fehr's case in which pressure on the optic nerve by the pituitary, enlarging early in the second pregnancy, had caused bitemporal hemianopia which had persisted for ten years to date of writing, but with no signs of acromegaly, polyuria or glycosuria. The sella turcica is abnormally large. Jung reports a somewhat similar case, the bitemporal hemianopia having developed progressively during the woman's tenth pregnancy. By the seventh month the visual disturbance was severe, the papilla slightly blanched, and the roentgen findings testified to enlargement of the pituitary. The ophthalmologist ordered the pregnancy to be interrupted at once and further pregnancies prevented. This was done the next day and the third day the woman was able to recognize persons in the room, with prompt further improvement in vision, although the hemianopia and slight blanching still persist. The rapid progress and severity of the visual disturbances and their immediate retrogression suggest that the pituitary must be the seat of a latent adenoma. Under the influence of the pregnancy the pituitary became congested, and exerted dangerous pressure on the optic nerve. Arresting the pregnancy relieved the congestion, and the adenoma subsided into its former latent phase.

### Chirurgia degli Organi di Movimento, Bologna

December, 1921, 5, No. 6

- \*Sacralization of Fifth Lumbar Vertebra. A. Albanese.—p. 577.
- Embryology of Articulations. G. Faldino.—p. 609.
- \*Tuberculosis of Arm and Shoulder. G. Valtancoli.—p. 652.
- \*Contracture of Knee. D. Maragliano.—p. 659.
- Postoperative Treatment After Operations on Arm. A. Steindler (Iowa City).—p. 669.
- \*Pituitary Anomalies in Twins. N. Samaja.—p. 690.
- Bone Anomalies in Arm: Two Cases. P. Mainoldi.—p. 709.

**Sacralization of Fifth Lumbar Vertebra.**—Albanese calls the symptoms induced by this anomaly, Bertolotti's syndrome, as Bertolotti published in 1917 a comprehensive study of the subject. He describes five cases with unilateral and one with bilateral disturbances from this cause, and reports research on numerous cadavers, twenty-five fetuses, 788 European sacra and twelve from natives of Terra del Fuego. His conclusion is that the sacralization is an atavistic phenomenon. It is found in about 4 per cent. of Europeans, and up to 41.6 per cent. in inferior races.

**Tuberculosis of the Upper Extremities.**—Valtancoli tabulates eighty-six cases of tuberculous lesions in shoulder, elbow or wrist, from the Rizzoli Institute, with a survey of the permanent outcome of treatment.

**Nerve Blocking to Cure Contracture of the Knee Muscles.**—Maragliano recalls that injection of 60 per cent. alcohol to block a trunk nerve in man arrests both motor and sensory functioning, and this proved effectual in curing contracture of both knees in a girl of 6 who had been crippled in this way for three and a half years after acute rheumatism. The contracture could be corrected under general anesthesia and a plaster cast, but it returned each time after the cast was removed. Finally he injected the alcohol into the nerve fibers innervating the semitendinosus, the semimembranosus and the long head of the biceps, and applied a cast for forty days, with a month's interval between the two sides. The knees could be then extended normally, and the child has been using them naturally for fifteen months to date, after failure of eleven months of attempts at correction by other measures. In a similar case in a boy of 8, the contracture had followed a purulent staphylococcus process in one knee, which had required arthrotomy. The ultimate results were equally good, but it took a longer time and three or four resumptions of the cast before the tendency for the contracture to return was finally broken up.

**Radiographic Study of Twins with Pituitary Anomalies.**—The sella turcica is abnormally small in both the young men, but one has developed to above the normal height, while a congenital deformity of the legs in his twin shortens his height materially. Both at 16 are otherwise well developed. Samaja urges study of the sella turcica in twins.

### Pediatrics, Naples

Jan. 1, 1922, 30, No. 1

- \*Amebic Dysentery in Children. L. Spolverini.—p. 1.
- \*Lumbar Puncture in the New-Born. S. De Stefano.—p. 12.
- \*To Obtain Blood from Infants. E. Marchi.—p. 17.
- Technic for Lumbar Puncture. R. Vaglio.—p. 19. Conc'n No. 2.

**Amebic Dysentery in Children.**—Spolverini says that amebic dysentery in Italy used to be confined to a limited area in the south, but the soldiers returning home from the war have scattered it throughout the entire country, and children frequently have it now. He describes several cases in children from 2 to 12 years old, and urges that amebic dysentery should be suspected when a child anywhere has prolonged intestinal disturbances, rebellious to ordinary treatment. The frequency and character of the stools and the anemia should suggest the true cause. In none of the children had the correct diagnosis been made, although the dysentery had lasted from six months to a year. Examining the mucus of the feces under the microscope will reveal the amebae, and intramuscular injection of emetin may cure it promptly and ward off contagion of others. The only trouble is to think of the possibility of amebic dysentery in regions where it has never been known before.

**Lumbar Puncture for the New-Born.**—De Stefano declares that lumbar puncture is never contraindicated in the new-born, and is absolutely required when grave nervous disturbances or cyanosis or both indicate rapid and progressive pressure on the centers in the brain. Only a small quantity of the fluid should be allowed to escape, but the puncture can be repeated, if necessary, two to four times during the twenty-four hours. In two recent cases the cord had been twisted around the infants, and artificial respiration had been required to revive them. One was born at the eighth month, the other had congenital stridor. Both took the breast well, but during the second day they developed convulsions, the fontanels bulging. Lumbar puncture released a yellowish or blood stained fluid, and a few drops of epinephrin were given. The convulsions subsided, and no further measures were needed. By lumbar puncture in case of intracranial hemorrhage in the new-born, we may ward off serious brain disturbances in later life.

**To Obtain Infants' Blood for Examination.**—Marchi uses a small cupping glass with a side tube blown in the glass. This side tube fits into the stopper of a centrifuge tube and collects the blood drawn into the cupping glass from a couple of small cuts made over the scapula. This aspiration device works like a charm, he says, for young and old, but is particularly useful for young infants to obtain blood for serologic tests.



**Policlinico, Rome**Jan. 9, 1922, **29**, No. 2

- \*Direct Visual Inspection of Blood Vessels. A. Senigaglia.—p. 41.  
Heart Sounds After Contusion of Chest. A. Fasano.—p. 44.  
\*Alcohol as Surgical Disinfectant. O. Cignozzi.—p. 46.  
Treatment of Anthrax. R. Cinti.—p. 52. Id. G. Conforti.—p. 52.

**Angiodiascopy.**—Senigaglia expatiates on the information to be derived in various conditions from direct visual inspection of the veins and arteries in the peripheral portions of hands and feet. He examines them with the lamp behind them, the light from the lamp collected in a tube, against which the hand or foot is placed.

**Alcohol and Surface Tension of Disinfectants.**—Cignozzi adds his voice to the chorus of those who assert that addition of 70 per cent. of ethyl alcohol or of 35 per cent. propyl alcohol modifies the surface tension of disinfectants and renders them much more penetrating and bactericidal. The formula found most effectual in his long experience has been 70 per cent. ethyl alcohol containing 1 or 0.5 per cent. acetic acid.

**Riforma Medica, Naples**Dec. 17, 1921, **37**, No. 51

- \*Epinephrin in Experimental Tuberculosis. D. Maragliano.—p. 1190.  
Volitional Dissociation of Respiration. F. D'Onglia.—p. 1193.  
Calculus and Tuberculous Process in Kidney. G. D'Agata.—p. 1195.  
Calculus in Kidney Causing Appendicitis Symptoms. Zaffagnini.—p. 1197.  
Differential Diagnosis of Trichophytosis of Skin. Gravagna.—p. 1199.

**Diagnostic Experimental Tuberculosis.**—Maragliano noted edema of the thigh in forty of fifty-two rabbits inoculated with human tuberculous material plus 1 c.c. of 1:1,000 epinephrin. In thirty-eight of the animals an eschar formed. The epinephrin evidently renders the superficial tissues more susceptible to the inoculation, but it does not seem to hasten the invasion of the glands. The inoculation should be made in a region where glands abound. He has sometimes found lesions in the glands near the bifurcation of the aorta, before the inguinal or crural glands were involved, after inoculation in the groin. In twenty-eight other animals he squeezed the regional glands between his fingers after the inoculation, but the interval before the tuberculous lesion developed did not seem to be shortened. His conclusions from this research on 112 guinea-pigs are that we can systematically proceed to enucleate a regional gland or two for microscopic examination by the sixteenth to the eighteenth day, even if the palpation findings are negative.

**Rivista Critica di Clinica Medica, Florence**Dec. 5, 1921, **22**, No. 34

- \*Cholesterin and the Suprarenals. C. Alessandri.—p. 397. Cont'n No. 35, p. 409.  
Present Status of High Blood Pressure. Becchini.—p. 403. Cont'n.

Dec. 15, 1921, **22**, No. 35

- Urcase Test Not Adapted for General Practice. Becchini.—p. 413.

**Cholesterin and the Suprarenals.**—Alessandri charts the cholesterin content of the blood in healthy rabbits and in other rabbits, before and after the suprarenals had been removed, or epinephrin injected subcutaneously or into the peritoneum. Among the facts apparently demonstrated by his research is that the increase in the amount of cholesterin in the blood which follows injection of epinephrin cannot be ascribed to the suprarenals, as it occurred about the same in the suprarenalectomized rabbits. The vasomotor phenomena after injection of epinephrin in man and animals seem ample to explain the general mobilization of the cholesterin, entailing the hypercholesterinemia, which is evidently a defensive reaction.

**Repertorio de Medicina y Cirugía, Bogotá**August, 1921, **12**, No. 11

- \*Tropical Ulcers. J. Bejarano.—p. 580. Idem. A. Echeverri Marulanda.—p. 584.  
Sacralization of Lumbar Vertebra. L. Leyva Pereira.—p. 593.  
\*Leukocyte Count in Dysentery. A. García Martínez.—p. 600.  
\*Influenza in Colombia. C. Torres Umaña.—p. 617.

**Tropical Ulcers.**—Bejarano treats phagedenic ulcers with a salve containing silver nitrate, zinc oxid and balsam of Peru in petrolatum. This is applied daily after softening the

ulcer with compresses dipped in a 1:2,000 solution of potassium permanganate. Echeverri advocates operative measures, describing the prompt and complete cure after a circular incision of the leg about 5 cm. above the ulcer, cutting down through the subcutaneous cellular tissue and the superficial veins and both saphenous veins, ligating those of any size, and then suturing the skin. He cures the ulcer lightly at the same time, and consequently prefers general or spinal anesthesia rather than local. The ulcer has always healed in less than three months, and there has been no recurrence. The weight must not be borne on that leg until the ulcer has entirely healed over, and the young skin must be protected against scratches and insect bites. This treatment has also proved effectual for rebellious ulcers from varicose veins.

**The Blood Count in Dysentery.**—García Martínez generalizes from the data he has collected that the blood count may aid in differentiation of intestinal disease: With bacillary dysentery there is polynucleosis but no increase of eosinophils, while with amebic dysentery there is slight eosinophilia in the blood, while the other findings are normal, or there may be mononucleosis in the blood, and this is almost constant in the stools. Helminthiasis induces polynucleosis with eosinophilia in the blood.

**Is It Influenza?**—Torres Umaña comments on a disease that has appeared at different points all over the country (Colombia) during the last few months and affects almost exclusively those persons who escaped the last pandemic of influenza. A chill, fever, headache, weakness, peculiar pains and digestive upset are accompanied with inflammation in the throat, which may or may not be painful, as the sole objective finding. This angina persists throughout the whole course, but the general symptoms are not proportional to the intensity of the throat process. The fever may drop for a day or two and then run up again. The course has varied from three days to three weeks unless ear and lung complications develop, but these are common.

**Semana Médica, Buenos Aires**Nov. 10, 1921, **28**, No. 45

- Auricle Tracings with Mitral Stenosis. R. A. Bullrich.—p. 607.  
\*Thermolaryngoscope. L. Samengo.—p. 611.  
Tuberculin Treatment and Vitamins. F. Gardey.—p. 622.  
\*Experimental Goiter. L. Goldemberg.—p. 628.  
Primary Tuberculosis of Prostate. J. Salleras.—p. 632.  
\*Jaundice in the New-Born. F. A. Deluca.—p. 635.  
\*Pregnancy in Heart Disease. M. Ruibal Salaberry.—p. 637.  
Treatment of Inherited Syphilis with Sulpharsenol. Colmegna.—p. 640.

**The Thermolaryngoscope.**—Samengo gives nineteen illustrations of his laryngoscope which is warmed by electricity so that the mirror does not become obscured by condensing moisture. A head frame sustains the laryngoscope in the throat, leaving the physician's hands both free.

**Experimental Goiter.**—Goldemberg reports that white rats developed goiter after having had 3 mg. of sodium fluorid added to their food regularly every day for six or eight months. Their thyroid glands were five or six times the normal size, and the microscope showed goiter of the parenchymatous or colloidal type. The kidneys also showed signs of epithelial or tubular nephritis, and the young rats seemed to be stunted in their growth, with a kind of thyroid cretinism.

**Jaundice in the New-Born.**—Deluca found evidences of laceration of the dura mater and of more or less profuse meningeal hemorrhage in 36 per cent. of the 554 infant cadavers examined since 1907. In 34 of the 201 cases delivery had been supposedly normal; in 15 the birth had been premature; in 23 there had been manual traction with breech presentation. The meningeal hemorrhage may well explain the jaundice of the newly born child in some cases. Jaundice may thus sometimes be regarded as a sign or symptom of meningeal hemorrhage. In 5 cases the jaundice developed the day after birth and the fontanels bulged. Lumbar puncture released a bloody fluid, and the child had convulsions later and died the fifth day, or else the jaundice did not develop till the sixth day and the child died the seventh. Only 2 of the children in this group recovered. He is investigating now to determine whether it is possible for meningeal hemorrhage to occur without jaundice.



**Pregnancy in Heart Disease.**—Ruibal Salaberry states that in a group of thirty-seven women with heart disease, the other organs apparently intact, all have passed through normal pregnancies without apparent damage, and have now a total of 114 children. The children were of the average size and were all normal. He gives the details of each of the thirty-seven cases. The heart disease was a mitral defect, myocarditis, or aortic defect, and in one case more than one valve was affected.

### Archiv für klinische Chirurgie, Berlin

Nov. 24, 1921, 118. A. Bier Festschrift. Second Third

Present Status of Prostheses, Etc., for Jaws. H. Schroeder.—p. 275.

\*Correction of Flaccid Paralysis. E. Hayward.—p. 298.

\*Injury of Blood Vessels. H. Küttner.—p. 303.

\*Substitutes for Ligation of Vessels. F. Momburg.—p. 330.

\*Importance of Sclerosis of Portal Vein. V. Hart.—p. 337.

\*The Blood Capillary Circulation. A. Hintze.—p. 361.

\*Indications for Operations on the Thyroid. H. Grauert.—p. 381.

\*Parathyreopriva Tetany. A. v. Eiselsberg.—p. 387.

\*"Marble Bones." F. Schulze.—p. 411.

Treatment of Fistulas, etc., After Gunshot Wounds. Blecher.—p. 439.

\*Bone Abnormalities in the Young. K. Vogel.—p. 446.

\*Blunders in Diagnosis of Tuberculosis of Bones. E. Kisch.—p. 481.

Experimental Free Grafts of Periosteum. W. Baetzner.—p. 504.

\*Neurotic Ossifying Myositis in Paralyzed Limbs. A. Israel.—p. 507.

\*Inflammatory Tumors on Metatarsal Bones. C. Deutschländer.—p. 530.

\*Rib Operations to Improve Scoliosis. F. Sauerbruch.—p. 550.

\*Treatment of Fractured Radius. R. Klapp.—p. 563. Id. F. Bange.—p. 578. Id. P. Eden.—p. 592.

\*Braun's Splint for Fractures. Braun.—p. 594.

**Correction of Flaccid Paralysis.**—Hayward remarks that the conditions with flaccid paralysis of the hip, for example, are much like those after exarticulation of the hip joint, except that there are plenty of supports for the prosthesis. In a case described he applied the principles that have been found useful for the amputated. In this instance he substituted for the paralyzed ileopsoas muscle, a flap from the external oblique muscle. This tongue-shaped flap of muscle and fascia was 6 cm. wide and 10 cm. long. The ileopsoas was divided close to the horizontal ramus of the pubis, and the flap was twisted around to correspond to the direction of the ileopsoas. The gap of 7 cm. was bridged with a piece cut from the fascia lata through the same incision. The hip now can be moved actively, and the prosthesis for the leg, constructed on the principle of an artificial leg, bends the knee passively. The success in this case teaches that by combining muscle plastics with a modern prosthesis for thigh amputations, we can uncripple the cripples to an astonishing extent.

**Indirect Injury of Vessels.**—Küttner analyzes the mechanism of injury of vessels from contusion, traction, torsion, compression, etc. His study is based on war wounds, but the conclusions apply to peace wounds as well.

**Substitutes for Ligation of Vessels.**—Momburg reviews the various methods in vogue, and says that twisting a small vessel and compressing the twisted portion still seems the best substitute when ligation is not applicable.

**Sclerosis of Portal Vein.**—Hart describes the clinical course and necropsy findings in two cases, and discusses the importance of sclerosis of the portal vein in general.

**The Capillary Circulation.**—The way in which the capillaries fill with blood and the mechanical causes influencing this are discussed by Hintze, with some colored plates.

**Thyroid Operations.**—Grauert argues that when only a few symptoms suggest exophthalmic goiter, or when the symptoms have subsided, leaving extreme euphoria, these should be regarded as indications for operative treatment and as the most propitious moment for it. The euphoria is liable to yield suddenly to grave exacerbation of the former symptoms. In one family the whole clinical picture of exophthalmic goiter was equally divided between two sisters. He thinks this distribution of symptoms among the members of a family is not sufficiently heeded at present. Another point to which he calls attention is the possible alternation in the same person of symptoms indicating insufficient and excessive endocrine functioning. An operative cure was realized in two cases he describes in which exophthalmic goiter developed in women of myxedematous type. In another case there were symptoms of schizophrenia in addition but all subsided after partial thyroidectomy.

**Treatment of Parathyropriva Tetany.**—Eiselsberg had a recent case of this kind, and reviews his total experience. The postoperative tetany proved fatal in 9 cases, and in 2 that date from Billroth's day, the tetany persisted unmodified during the thirty-nine and twenty-one years till death. He has had 8 cases of severe and about 24 cases of mild postoperative tetany in twenty years, in a total of 2,588 strumectomies, including 215 for exophthalmic goiter. He adds that Vienna seems to be a center for spontaneous tetany. Even the mildest form of postoperative tetany is dangerous, as cataract may develop years later. Parathyroid and calcium lactate treatment of parathyreopriva tetany was frequently effectual, but in 2 cases he implanted thyroid tissue in treatment, parathyroid tissue not being available at the time. Transient benefit followed in one case. In 7 other patients he implanted parathyroid tissue, and decided and durable benefit was realized in 3 cases; one patient died from pneumonia, and no effect was apparent in the 3 others. The parathyroids had been taken from new-born infants in 2 of the cases, but no effect was apparent, as also with monkey parathyroids in 2 cases. About 20 cases of human parathyroid implants are on record. The outcome is difficult to estimate.

**"Marble Bones."**—Schulze refers to the peculiarly compact bone which fractures exceptionally easily, and looks like marble. He adds another to the six cases on record.

**Bone Disease in the Young.**—Vogel explains the Legg-Calvé-Perthes hip joint disturbances, Schlatter's, Madelung's and similar affections as a local derangement in the epiphysis line. Coxa valga and vara are traceable also to it, as he shows from his extensive experience.

**Blunders in Diagnosis of Bone and Joint Tuberculosis.**—Kisch has been surprised to find that certain cases labeled tuberculous processes were in reality gonococcus, syphilitic or rheumatic lesions. The differential points include pain—which is comparatively rare with the insidiously developing tuberculous process; the bilateral involvement, common with syphilitic lesions; inoculation of animals with secretions from the lesion, and the typical roentgen picture as he shows it in numerous cases. In coxa plana, abduction alone is hampered, but with tuberculous hip joint disease, movement in any direction is painful.

**Ossifying Myositis in Paralyzed Limbs.**—Israel concludes from his clinical experience and study of the literature that these paraosteo-arthropathies represent a special tissue reaction in limbs with paralysis of central origin.

**Inflammatory Tumors of the Metatarsus.**—Deutschländer calls attention to a group of cases, all in women of middle age, with disturbances suggesting flatfoot developing suddenly, progressing for several months, and then declining. The only positive finding is local tenderness in the shaft of a metatarsal bone at the junction of the middle and distal third. The movement of the corresponding toe is painful. Roentgenoscopy finally, by the ninth week, reveals what seems to be an exostosis, but the clinical features, the benefit from hyperemia, and the final recovery demonstrate the inflammatory nature of the lesion. It is a metastatic bacterial embolism in the capillary network, entailing a subacute periostitis at the spot.

**Operative Treatment of Scoliosis.**—Sauerbruch declares that the graver forms of scoliosis can be corrected best by operations on the ribs, and describes two typical cases to show what can be realized by this means. The results surpass those of orthopedic measures alone. The war surgery of the thorax has opened this field for treatment of grave scoliosis.

**Fracture of the Radius.**—Klapp applies strong traction to the thumb and fingers separately, and manipulates the fragments with the wrist held in a crescent shaped iron standard. Then he applies for two or three weeks a plaster cast to the forearm and hand, leaving thumb and fingers free. Bange analyzes 649 cases, and extols the perfect results of Klapp's method.

**Braun's Splint for Fractured Legs.**—Braun suspends the foot from the top of a small frame, while the leg is suspended from the horizontal extension of the frame on each side. The leg is slightly flexed at knee and hip, which renders the position comfortable, while traction can be applied as desired.



**Deutsche medizinische Wochenschrift, Berlin**

Dec. 22, 1921, 47, No. 51

- \*Disturbance of Sleep in Late Encephalitis. F. Lust.—p. 1545.
- Epidemic Encephalitis and Its Treatment. A. Alexander.—p. 1547.
- Respiratory Disturbance in Pontine Hemiplegia. Dackau.—p. 1549.
- \*Postoperative Leukocytosis. O. Stahl.—p. 1550.
- Duodenal Lavage in Pernicious Anemia. Böttner and Werner.—p. 1552.
- Use of Collargol in Hemolytic Anemia. Steinbrinck.—p. 1553.
- Lymphangitic Abscess in Anterior Palate. Klestadt.—p. 1554.
- Jejunostomy in Gastric Affections. Alkan.—p. 1555.
- Early Diagnosis of Typhoid. Rehberg.—p. 1556.
- Accelerated Demonstration of Tuberculosis by Inoculation in Liver. R. Oppenheimer.—p. 1557.
- Operations on the Lacrimal Sac (Toti Method). W. Lange.—p. 1557.
- A Modified Type of Esthesiometer. R. Griesbach.—p. 1559.
- Peptic Gastric and Duodenal Ulcers. Gruber and Kratzeisen.—p. 1559.
- Determination of Damage Claims in Accidents. Ledderhose.—p. 1561.
- Popular Instruction in the Care of Infants. E. Welde.—p. 1563.

**Good Effect of Febrifacients on Disturbance of Sleep in Late Epidemic Encephalitis.**—Lust reports his experiences with parenteral injections of milk and other substances for the purpose of inducing sleep in a child of 1 year and 8 months that had suffered for more than a year from serious disturbance of sleep following an attack of epidemic encephalitis. An hour and a half after the first intramuscular injection of 2 c.c. of boiled milk the child fell asleep and slept soundly for twelve hours. During the day it was quiet and contented, whereas for months it had cried a good deal and had been restless. The next night no milk injection was given, and the child passed a restless, sleepless night as usual. But every time the milk injection was given in the evening it exerted in the beginning the same sedative effect that it did the first time. The child always fell asleep soon after receiving it and awoke the next morning after a quiet, deep sleep. Injections of whey or of casein were found to have the same effect as milk. After a time the effect of the injections was not so constant. It was discovered that the child fell asleep following the injections only when the parenteral injection of the protein had brought about an increase of temperature. If when the child was asleep, its temperature fell below normal, it would usually wake. Apparently an increase of temperature from 37.5 to 37.8 C. was sufficient to induce sleep or to produce at least a sedative effect. High temperatures increased still further the soundness of the sleep. But since the effect of the injections was only symptomatic and in no wise permanent, Lust admits that the value of the method is quite limited.

**Postoperative Leukocytosis.**—Stahl discusses several cases in order to explain how he reached the conclusion that the cause of the postoperative leukocytosis is the parenteral absorption of protein and the infection of the operative wound, which takes place in spite of all precautions.

**Medizinische Klinik, Berlin**

Dec. 11, 1921, 17, No. 50

- \*Acute Meningitis Early in Syphilis. Nonne.—p. 1501.
- \*Activation of Arsenicals. W. Kolle.—p. 1504.
- \*Intermittent Claudication. H. Schlesinger.—p. 1507.
- \*Treatment of General Paresis. O. Fischer.—p. 1509.
- \*Therapeutic Pneumoperitoneum. Sörgo and A. Fritz.—p. 1513.
- System for Roentgen Diagnosis. F. Pordes.—p. 1516. Cont'd.
- Diphtheria Bacilli in Sputum. K. Meyer.—p. 1520.

**Acute Meningitis in Early Syphilis.**—The prognosis of acute syphilitic meningitis is good if it is recognized and specific treatment started in time. Only four cases are known with necropsy, and Nonne here adds another to the list, with spirochetes found in the cerebrospinal fluid. The meninges of the entire central nervous system showed leptomeningitis. The symptoms were those of meningitis in general. The Wassermann reaction was negative in the spinal fluid in some of these cases, but the mastic test was always positive in the cases in which it was applied. The working man of 48 had been given a vigorous mercury and arsphenamin course of treatment during the second and third month after infection. In the fourth month he had complained of headache. The other symptoms of acute meningitis developed six months after infection and proved fatal in ten days. Nonne is convinced that acute syphilitic meningitis is more common now than it used to be, and he incriminates arsphenamin for this. The case teaches that syphilis should always be thought of

in cases of acute meningitis; the benefit from specific treatment may be the only clue to the differential diagnosis. Nonne asks why in his case and in Fahr's similar case no improvement could be detected under specific treatment although the lesions were comparatively mild.

**Activation of Arsphenamin by Mercury.**—Kolle states that addition of mercury reduces instead of increasing the toxicity of the metal arsphenamins while it increases their chemotherapeutic action. The mercury has to be in the form that oxidizes least readily. He found that syphilized rabbits bore mercury better than normal rabbits.

**Intermittent Limping.**—Schlesinger comments on the frequent blunders in differentiating intermittent claudication as the intermittent character of the disturbances is overlooked. Some of his patients had long been treated for assumed flat-foot without benefit. Others had been taking courses of treatment for rebellious neuralgia, muscular rheumatism, gout or hip joint disease. The intermittent nature of the disturbances, their development only during exercise, and rapid subsidence during repose, and the absence of a pulse in the foot should suggest the proper diagnosis. The importance of smoking as a factor in intermittent claudication is demonstrated anew by his hundreds of cases. Even moderate smoking may bring back the symptoms. Chilling, nervous influences and other factors are of much less etiologic import. A disturbance in the balance between the vasodilators and the vasoconstrictors is a special element in intermittent claudication; the vascular reflexes seem to behave the reverse of normally: The vasoconstrictors respond to stimuli which in the normal act only on the vasodilators. Cold applications elicit the same response as in the normal only more intense, but heat elicits the same response as cold: If the feet are held in hot water, they blanch and look livid. They may not redden for several minutes or not until after they have been taken out of the hot water. Only in very few of his numerous cases did it prove impossible to ward off gangrene. In prophylaxis, chilling must be avoided and exercise should not be forced. Tobacco must be given up and highly seasoned and salted foods. Every year he encounters cases in which local heat applications for the mistakenly diagnosed gout or rheumatism had been followed by gangrene. He warns expressly of the futility and actual harm of procedures to apply local heat. Many have reported intense exacerbation of the pains under them. Tepid baths may be useful to warm the feet, and warm stockings and shoes are indispensable. The continuous current usually renders good service. Of the various drugs recommended for intermittent claudication he has found sodium nitrite by subcutaneous injection extremely effectual; by the mouth it has no effect. He says that he injects half a Pravaz syringe of a 0.2:10 aqueous solution of the sodii nitris, giving a course of twenty or thirty injections, increasing after the first to a whole syringe. Congestion, slight dizziness or redness of the face are signs of intoxication. He commends this treatment as he has applied it in more than a hundred cases in the last ten years. Several patients with beginning gangrene and agonizing pains were delivered from the use of morphin by this means. Nitroglycerin subcutaneously is also useful, but disagreeable by-effects are common with this drug. In some recent cases strychnin dilated the vessels but only in the diseased limb. On the whole, he says, his experience justifies a more favorable prognosis for intermittent claudication than would be assumed from the literature. Arrest of disturbances and retrogression of far advanced changes, with restoration of earning power, are comparatively frequent.

**Treatment of General Paresis.**—Fischer reiterates his assertions that with sodium nucleinate we can count on an actual cure of a certain proportion of our cases of general paresis. His thirteen years of experience have shown 7.5, 16, and 56 per cent. cured without relapse in three series of forty, eighteen and sixteen patients with general paresis. Only 50, 40 and 8 per cent. in the same groups failed to show any benefit. He has found specific treatment as for syphilis entirely ineffectual. The prospects are better the younger the patient and the shorter the duration of the paresis. Of all the means to induce the therapeutic leukocytosis, nuclein has given the best results to date. He declares in conclusion that



a course of leukocytosis treatment should be given as a routine measure in prophylaxis of paresis to every syphilitic on concluding the specific treatment for the syphilis. He compares the results of treatment of paresis with tuberculin or by inducing malaria, or other means to stimulate leukocytosis. He does not describe his technic, stating merely that courses were given to a total of 3, 5, 8 or 14 gm. of nuclein during the year. He advises repeating the course annually. In twelve cases all under 40 in which he gave over 10 gm. of nuclein, a cure was realized in 58 per cent. Fischer is professor of dermatology at Prague.

**Therapeutic Pneumoperitoneum.**—Sorgo and Fritz add another case to the list of those in which tuberculous peritonitis of recent development subsided under insufflation of 1,500 and 1,000 c.c. of air after withdrawal of 3,000 and 2,000 c.c. of ascitic fluid. There was an interval of fifteen days between the insufflations. The young woman has been apparently in good health during the months since.

### Mitteil. a. d. Grenzgeb. d. Med. u. Chir. Jena

1921, 34, No. 3

- \*Functional Kidney Tests. Lehmann and Elfeldt.—p. 291.
- Plastic Operations on Dura and Skull. V. Hantsch.—p. 328.
- Typhoid Suppuration in Echinococcus Cyst in Liver. Amreich.—p. 334.
- \*Functional Import of "Stomach Roadway." G. Katsch and L. v. Friedrich.—p. 343.
- \*Mechanics of Cerebrospinal Fluid. K. Propping.—p. 362.
- \*Decapsulation in Mercuric Chlorid Poisoning. F. Rollwage.—p. 374.
- \*Muscle Spasm with Flatfoot. H. Schäffer and S. Weil.—p. 393.
- \*Tetany. E. Melchior.—p. 400.

**Tests of Functional Capacity of the Kidneys.**—Lehmann and Elfeldt analyze the findings in extensive application of the water freshet test and the concentration test. For the first, the 1½ l. are ingested, fasting, in forty-five minutes, after the bladder has been emptied. The urine is collected every half hour for four hours. Then (usually noon) the concentration test is begun by refraining from all fluids until 8 the next morning. The urine is collected every two hours till 10 p. m. and again at 2 a. m. Then cystoscopy, chromocystoscopy and catheterization of the ureters complete the examination. In normal conditions, the largest half hour freshet of urine reaches 500 c.c. and the concentration reaches 1.030. These tests do not decide definitely whether one or both kidneys are diseased, but they certainly confer confidence in operating when they show that the sound portions of the kidney seem to be adequate to their task. They classify a number of kidney cases by their response to these tests and the outcome of the case.

**The Path of the Food Through the Stomach.**—Katsch and Friedrich gave a contrast meal to a number of healthy subjects, and found that the food did not pass predominantly along the lesser curvature, but spread through the greater curvature. Mechanical factors thus cannot be held responsible for the predilection of gastric ulcers for the "stomach street" (*magenstrasse*), along the lesser curvature.

**Mechanical Features of the Cerebrospinal Fluid.**—Propping replies to criticisms of his hydrostatic theory of the cerebrospinal fluid. He discusses, in particular, Heller's hydrodynamic theory.

**Decapsulation of Kidney in Mercuric Chlorid Poisoning.**—Rollwage found that decapsulation of the kidneys was borne without apparent injury in 2 personal cases described and in 9 found in the literature, but the patients all died except one, while other patients not decapsulated recovered, even when, in some nondecapsulated cases, the anuria had lasted for eight days. One instance is known of recovery after decapsulation, and, in all, this operation seemed to be responsible for postponing the fatal termination for a few days. He urges that in future decapsulation should be done early and only on one kidney. This would allow better insight into the effect of the operation when compared with the other kidney at necropsy.

**Muscular Spasm with Flatfoot.**—The electrocardiographic finding in muscle contracture with flatfoot are reproduced and interpreted.

**Clinical Research on Tetany.**—Melchior's subtitle for the chapter on undernutrition, osteomalacia, and spontaneous and postoperative tetany, is "Pathologic Constitutions." He

declares that the tetany question is more complicated than it has seemed hitherto. Many contradictory phenomena can be explained only by assuming constitutional factors. His second chapter deals with fatal parathyroprival coma, of which he cites some instances from the records and a personally observed case. One chapter is devoted to visceral and secondary tetany. Two cases of spasm of the stomach are described, and one of visceral tetany accompanying gallstones, with one of cardiospasm and hysteria.

### Münchener medizinische Wochenschrift, Munich

Dec. 9, 1921, 68, No. 49

- Endemic Favus in Pomerania; Treatment. W. Schönfeld.—p. 1575.
- Experimental Temporary Sterilization by Ovary Implants. L. Haberlandt.—p. 1577.
- Rachitis in the Period 1914-1921. Hilgers.—p. 1578.
- Combined Sachs-Georgi-Meinicke Test. C. Stern.—p. 1580.
- Characteristic Blood Findings in Plumbism. G. Seiffert.—p. 1580.
- Treatment of Postdysenteric Disturbances. W. Werlé.—p. 1581.
- Extrapleural Paraffin Filling for Tuberculous Lung. Baer.—p. 1582.
- Uses of Nooses in Obstetric Practice. Liepmann.—p. 1586.
- Paralysis of Trapezii from Tailor Work. Schmidt.—p. 1588.
- Vaccination Against Smallpox in Bavaria in 1920. Groth.—p. 1588.
- Doubts Cast on Chemically Increased Virulence of Micro-Organisms. Bachmann.—p. 1589.
- Preventing Contraction of Abdomen at Palpation. Kelling.—p. 1590.
- \*Treatment for Oxyurids. Nordhof.—p. 1590.
- \*"Artificial Pneumothorax." J. Neumayer.—p. 1590.
- Diagnosis of Panaritium. A. Krecke.—p. 1591.

**Treatment of Oxyuriasis.**—Nordhof describes the treatment he uses for oxyurids in children. The treatment begins with a soapy full bath, especial attention being given to the anal region. The hands of the child are scrubbed with a nail brush, the finger nails being thoroughly cleaned. The anal opening is anointed with mercurial ointment and a pad of cotton is applied. It is sometimes expedient to put a closed garment about the loins of young children to keep their hands away from the anal region. The bed linen must be changed frequently. After defecation, the anal region should be thoroughly cleansed with soap and water, while the ointment and cotton are again applied. The hands are again scrubbed with soap and brush, and the nails are carefully cleaned. Full baths should be given frequently. As the life cycle of oxyurids in the intestine, from the time the ovum enters the mouth to the time when the female appears at the anal opening, is about fourteen days, the treatment should be extended over a period of at least two weeks, or preferably a few days longer. Nordhof states that this method has never failed him. [He does not seem to think it necessary to give a vermifuge internally.]

### Wiener Archiv für innere Medizin, Vienna

Jan. 20, 1922, 3, No. 3

- \*After Roentgen Exposures in Exophthalmic Goiter. N. Roth.—p. 367.
- \*Diseases and the Seasons. S. Ruzsnyák.—p. 379.
- \*Pregnancy Kidneys. A. v. Fekete, D. Fuchs and B. Molnár, Jr.—p. 397.
- \*Sternum-Mediastinum Dulness. L. Karczag and D. Marko.—p. 425.
- \*Resisting Powers of Erythrocytes. S. Ruzsnyák and I. Barát.—p. 429.
- \*Purpura. F. Sternberg.—p. 433.
- \*Influence of Gastric Juice on Bacteria. K. Hajós.—p. 453.
- \*Distribution of Sugar in Blood Stream. L. Csáki.—p. 459.
- \*Diabetic Edema and Acidosis. E. Földes.—p. 469.
- Mechanism of Regurgitation in Man. Hetényi and Vándorfy.—p. 499.
- \*The Schilling Differential Blood Count. E. v. Haynal.—p. 507.
- Experimental and Clinical Study of Antitrypsin. S. Ruzsnyák et al.—p. 515.

**Findings After Radiotherapy in Exophthalmic Goiter.**—Roth's tabulated details of the gas interchanges and metabolic findings in four cases of exophthalmic goiter, after systematic treatment with the roentgen rays, confirm the unmistakable benefit therefrom in recent cases. When the case is of long standing, the course long and chronic, the radiotherapy may fail to relieve. Otherwise, even when the symptoms do not show much change, the metabolic findings testify to the great transformation realized. Alimentary glycosuria could no longer be induced, in his cases, but the effect of the radiotherapy was most manifest in the respiratory gas interchanges.

**Diseases of the Seasons.**—Ruzsnyák charts the seasonal prevalence of rheumatism (287 cases), pulmonary tuberculosis (3,266), neuroses (1,191), exophthalmic goiter (122) and gastric ulcer (95), gallstone mischief (232), diabetes (158),



valvular defects (532), and arteriosclerosis (702). Nearly all of this material shows two peaks in the course of the year. Spring and fall seem to be the critical months for the majority of diseases. The resisting power of the organism seems to be at its lowest in the spring and fall, and the adjusting mechanism is not equal to its task. The practical importance of this research is in prognosis and prophylaxis. In 164 cases of nephritis, the sudden increase in April and November is undoubtedly due to injury from chilling. With valvular defect (532 cases) the extra demands made on the circulation as spring advances explain the seasonal prevalence, but with arteriosclerosis the injurious effect of chilling is evident in a second peak in November, and in the fact that cerebral hemorrhage generally occurs in winter.

**Pregnancy Kidney Disease.**—The great progress realized of late in our knowledge of kidney diseases has thrown light on the nephropathies of pregnancy. They are of two types: a nephrosis with edema and retention of salt and water, but no increase in the residual nitrogen in the blood, no rise in blood pressure, and no change in the fundus. The other form is more of a nephritis, and retention of nitrogen, a rise in blood pressure and albuminuric retinitis are much in evidence. The first form yields to restriction of salt and of water, but this is of no avail in the second form, and the rapidly progressive nature of the eye changes generally call for artificial interruption of the pregnancy. Both these forms of kidney disease are the work of some still unknown injurious agent which acts on the vessels of the subcutaneous cellular tissue (edema without albuminuria), or on these vessels and also on the kidney vessels (nephrosis), or only on the kidney vessels (nephritis), or only on the vessels in the brain (eclampsia).

**Sternomediastinal Dulness.**—The importance of the exact differential diagnosis of dulness above the sternum was rendered evident by a case in which a prominent aorta was responsible for it; the woman had a goiter and the presumptive diagnosis had been substernal goiter. Roentgenoscopy in the oblique direction, towards the arch of the aorta, explains the dulness when the sternum is outlined by a wire stuck to the skin, so that the distance between the sternum and the aorta can be estimated. In normal conditions, the ascending aorta and the arch are the same distance from the sternum, about 2 or 3 cm. Normally the right lung extends like a wedge back of the sternum. But with a destructive process in this lung, it shrivels and retracts, leaving an area of dulness at the sternum which no roentgen shadows of the sternum region can explain. The area does not clear up with deep inspiration as it does when the dulness is due merely to the unusual extension of the right lung to the left margin of the sternum.

**Resisting Power of the Erythrocytes.**—Hemolytic jaundice is distinguished by the fragility of the erythrocytes, while pernicious anemia is distinguished from all other anemias by the greater resisting power of the erythrocytes. The research reported here has apparently demonstrated that the resisting power is increased by the bile salts. None of the other substances investigated displayed action in this line. Consequently, if in certain diseases we find the erythrocytes less fragile than expected, if we can exclude the action of bile salts, we can ascribe the increased resistance to the presence of young blood corpuscles.

**Purpura.**—Sternberg distinguishes between the purpura with fever and other anaphylactoid manifestations—the thrombocytes in normal proportions—and the purpura without fever, with essential thrombopenia. He describes in detail some typical cases of each type, especially the chronic continuous essential thrombopenia, the chronic intermittent, and the acute essential thrombopenia. The case of the latter was in a woman of 30, previously healthy except for cholecystitis two years before. She had complained of headache and dizziness for two days, and there had been bleeding from nose and gums, and purpura patches. She died the third day and necropsy disclosed hemorrhages in the meninges and cerebellum. The angiopathic type of purpura includes the anaphylactoid, the toxic and the deficiency diet types. Thrombopenia alone does not explain the hemorrhages; there

must be some other factor acting on the walls of the capillaries. Four clinicians have reported favorable results from splenectomy, but this removes only one link in the chain, and it had no effect in the one case in which Sternberg applied it. In another case the woman of 64 had epidemic encephalitis following influenza, and she succumbed to inanition from uncontrollable vomiting. During the last ten days her body was covered with purpura patches.

**Action of Gastric Juice on Bacteria.**—Hajós' experiments confirmed that the disinfecting action of the gastric juice is connected with the proportion of free hydrochloric acid in it. It takes fifteen or twenty minutes for normal gastric juice to destroy typhoid, colon and dysentery bacilli. Bacteria in fluid food are liable to be passed along out of the stomach too fast for disinfection, while bacteria in meat or other solid food are more likely to be destroyed by the gastric juice.

**Sugar in Blood Corpuscles.**—Csáki asserts that in blood in its natural condition the blood corpuscles are nearly if not entirely free from sugar. In diabetes, the corpuscles are permeable for sugar.

**Edema in Diabetes.**—Földes found that edema developed in diabetics only when there was acidosis, and it subsided and returned with the latter. The acidosis renders the kidneys less permeable for salt and water and thus prepares for the edema. He explains the mechanism of the paradox that small doses of sodium bicarbonate seem to promote edema while large amounts banish it.

**The Schilling Blood Picture.**—Haynal's experience in fifty-three cases has confirmed the reliability of Schilling's estimation of the blood picture. He extols its simplicity in comparison with the Arneth classification, as it does not require careful examination of the nuclear subdivisions, the ratio between the corpuscles with only slightly indented nucleus and those with nuclear fragmentation being instructive enough for all practical purposes. He merely notes the ratio between Arneth's Class 1 and Arneth's Classes 2 to 5. Haynal gives the exact figures for the different classes according to the Schilling conception of the normal standard.

### Wiener klinische Wochenschrift, Vienna

Dec. 1, 1921, 34, No. 48

- Treatment of Bilharziasis in Egypt. Tsykalas.—p. 579.
- Parafocal, Pharmacodynamic Allergy. A. F. Hecht.—p. 580.
- Influenza with Rupture of Spleen. E. L. Fieber.—p. 581.
- Orchitis Syphilitica; Simulation of Neoplasm. Zeissl.—p. 583.
- Medical Advice on Choice of Profession. A. Soucek.—p. 584.

Dec. 8, 1921, 34, No. 49

- Drug Tests of Vegetative Nervous System. S. Rusznyák.—p. 591.
- Diverticula of the Pericardium. E. Seidler.—p. 592.
- Tests for Reliable Neo-Arsphenamin. Kofler and Perutz.—p. 594.
- Intravenous Treatment of Itching Skin Diseases. Strassberg.—p. 595.
- Reinfection with Syphilis Twice in Five Years. Zeissl.—p. 596.

### Zeitschrift für Tuberkulose, Leipzig

December, 1921, 35, No. 4

- \*Surgical Treatment of Pulmonary Tuberculosis. H. Stöcklin.—p. 241.
- \*Curability of Tuberculous Cavity in Lung. J. Orth.—p. 251. Idem. C. Hart.—p. 253.
- \*Clinical and Biologic Cure of Tuberculosis. O. Amrein.—p. 259.
- Friedmann Remedy. A. Beck.—p. 264; V. Bock, 267; H. Ulrici, 269.
- Transportable Pneumothorax Apparatus. E. Hartmann.—p. 269.

**Filling for Tuberculous Lung.**—Stöcklin describes thirteen cases and two years of experience with loosening up the lung from the chest wall and implanting a paraffin filling. It is applicable only when the process is predominantly unilateral, with tendency to cavity production. Baer resected a rib, but he merely divides one or two ribs from their cartilages. With this they can be pried up enough to allow the pneumolysis with the finger. Nerve blocking plus sedatives answered for the anesthesia. The extrapleural cavity is then packed with disks of paraffin about the size of a 5 franc piece, of different thicknesses, fitting them in by pressing them against the ribs. The total amount was 600 to 1,000 c.c. or less. The paraffin, with a melting point of 50 or 52 C., was mixed when soft with 0.5 to 1 per thousand vioform and 0.5 to 1 per cent. bis-muth carbonate. The cases were all those in which pneumothorax was indicated but had been impracticable. Access from the rear is preferable when the superior lobe is involved. This filling method has the advantage over thoracoplasty that



the functioning of the rest of the lung is not interfered with, and there is no deformity left. But thoracoplasty is preferable when the entire lung is to be compressed. The pleura usually reacts with an effusion, and the case has to be watched to detect in time the bulging from the accumulating fluid, and release it. In the eleven surviving patients there are no signs of infection of the filling, and the cavity did not break through in any instance. In one case the filling had been applied as a last resort to cure recurring hemoptysis. The operation proceeded without mishap, but signs of aspiration pneumonia had been discovered in the other lung just before the operation, and the man of 57 succumbed to this. Necropsy revealed that the filling had been successful.

**Curability of Pulmonary Tuberculosis with a Cavity.**—Orth protests against Gräff's recent assertion that a cavity signifies that the patient is doomed. He admits that a cavity materially aggravates conditions, especially as it invites mixed infection, but he declares that thirty-six years ago he was teaching that the cavity may become lined with fibrous tissue, which is equivalent to healing over, and the progress in treatment has made this of more common occurrence during the years since.

Hart insists that if search is made at necropsies for old healed cavities, they will be found unexpectedly frequently. He has often been astonished at the absence of other foci in the lungs when a large cavity has been confirmed at necropsy. In many such cases the cavity must have been of several years' standing. The bacilli seem to become less virulent, the older the cavity. The stiff walls of the cavity may prevent its joining in the expansion of the lung, and the bacilli in it may not get the oxygen they need. Material thus cannot be forced out of the cavity. Another favorable factor is the relative increase in the protecting forces of the lung tissue and entire organism acquired in the course of the infection. This also helps to explain the lack of further dissemination of infection from a cavity in certain cases.

**Biologic Cure of Tuberculosis.**—Amrein replies to Liebermeister's assertions in regard to the indispensability of tuberculin treatment, that climatic, physical and dietetic treatment had induced clinical cures long before tuberculin was introduced into therapeutics. He cites some from his own experience, and remarks that Sahli's intradermal tuberculin treatment has a number of advantages over the subcutaneous and other methods. The reaction occurs under our eyes and can be measured, while general and focal reactions are avoided. This specific treatment is especially valuable, he adds, in the early stages (bronchial glands in children, etc.), aiding in the production of the immune protection.

### Zeitschrift für urologische Chirurgie, Berlin

Jan. 9, 1922, 8, No. 5

\*Operation for Cancer of Bladder. W. Latzko.—p. 135.

\*Amyl Nitrite Admixture for General Anesthesia. F. Winkler.—p. 151.

**More Comprehensive Operations for Bladder Cancers.**—Latzko gives in fourteen illustrations the technic he advises for resection of bladder cancer on the principle of operative treatment of uterine cancer, removing with it the regional connective tissue and lymph glands, into certainly sound tissue. He shows the planes of cleavage and the ease with which the portions containing the blood and lymph vessels here can be traced, ligated and severed. They are divided close to the uterus, and the internal genital organs are sutured to the peritoneum to roof over the bladder entirely. Not until this has been completed is the bladder itself touched; consequently, the operation on the bladder is extraperitoneal. The paracystium is removed with it the same as the parametrium with uterine cancer.

**Amyl Nitrite Admixture for General Anesthesia.**—Winkler refers to recent research which suggests that the changes in the lipoids of the cell under the influence of an anesthetic reduce the solubility for oxygen. The deduction seems inevitable that the less the amount of active oxygen in the cells, the less of the anesthetic is needed. By partially shutting off the blood supply to the brain we reduce the amount of oxygen, and thus can obtain the anesthetic effect with less of the drug. Or this same condition can be realized by

inhalation of amyl nitrite. The latter has long been known to be an antidote to chloroform, and Winkler proposes its use systematically in general anesthesia. To avoid the depressing action on the heart, he saturates the amyl nitrite for several hours with carbonic oxid. The amyl nitrite thus charged with carbonic acid, mixed with ether (6:1,000), induced in animals a smooth and apparently harmless anesthesia with a remarkably small amount of the ether, and the effect in 100 clinical cases was equally favorable. He asserts from these experiences that the drugs form a loose combination with the cell and are rapidly eliminated; the patient rouses promptly afterward, and there are no postnarcotic disturbances and no irritation of the kidneys. He drops the fluid on a pad of gauze, rather than a mask. The amyl nitrite-mixture can be preceded with a whiff or two of ethyl chlorid if desired. The odor of the mixture can also be masked by adding 10 drops of Oleum pini pumilionis to 100 gm. of the mixture. There is no or only a very slight phase of agitation, and the narcosis can long be held on an even plane. Consciousness returns almost immediately, and there is no nausea or vomiting, no bronchitis or pneumonia, but saliva secretion is increased. Salivation can be warded off, however, by preliminary swabbing of the mouth with a 0.5 per cent. solution of atropin. In short, he reiterates, addition of amyl nitrite deprives ether of much of its danger.

### Zentralblatt für Chirurgie, Leipzig

Nov. 19, 1921, 48, No. 46

Liberation of Subclavian Vein in Cyanotic Edema. Hedri.—p. 1678.  
Results of Tendon Shifting in Radial Paralysis. W. Krause.—p. 1680.  
Rubber Tissue Patch for Vessel Defect. F. Mocny.—p. 1682.  
Fatal Tetanus Six Years After Injury. H. F. Brunzel.—p. 1684.  
Treatment of Sauerbruch's Tunnels. E. Platou.—p. 1685.

### Zentralblatt für Gynäkologie, Leipzig

Nov. 12, 1921, 45, No. 45

\*Abnormal Contraction Phenomena in the Intestine. Mayer.—p. 1622.  
Experiences with the Sehrt Aorta Clamp. Gamper.—p. 1628.  
Action of Collargol, Not Due to Protective Colloid. Dietrich.—p. 1630.  
The Fourth Obstetric Maneuver. H. Fuchs.—p. 1632.  
Peculiar Case of Torticollis. W. Stenzler.—p. 1635.  
Explanation of "Follicle Atresia." Mikulicz-Radecki.—p. 1636.

Nov. 19, 1921, 45, No. 46

Congenital Skin Defects. F. Lönne.—p. 1654.  
Ratio of Abortions to Births in Mainz. L. Nebel.—p. 1657.  
Intestinal Necrosis in Ninth Month of Pregnancy. Pilsky.—p. 1662.  
Cystic Lymphangioma of Cervix Impeding Delivery. E. Haim.—p. 1664.  
Formation of Artificial Vagina. H. Michael.—p. 1665.  
Economy in Use of Animal Bladders in Obstetrics. Baumm.—p. 1667.

**Abnormal Contraction Phenomena in the Intestines.**—Mayer discusses various localized contractions of the intestine that, as distinct from the normal intestinal movements, are confined to the same place for some time and, to a certain extent, interrupt, or modify the normal peristaltic wave. His attention was first called to them at a necropsy, but since then he has observed the same phenomena during the course of laparotomies—in the small as well as in the large intestine. As a rule, the condition disappeared after a few moments, but sometimes it persisted for some time. In the most common form, the spasm affects the whole circumference of the intestinal tube. Within the area affected by the spasm (a few centimeters in length) the intestine is occasionally reduced to the size of a lead pencil and presents an hour-glass appearance, as compared with the rest of the intestine, reminding one of an intestinal stenosis. In the second type, the small intestine, for the length of from 20 to 25 cm., was about the thickness of the little finger, contrasting thus markedly with the balance of the intestine. At the periphery of the contracted portion of the intestine could be noted many round longitudinal fibers about 2 mm. thick, which in places presented the appearance of a bundle of slate pencils. The substratum of these longitudinal bundles seemed to be formed by an agglomeration of helminths. After the laparotomy the phenomenon could not be rediscovered. The postoperative course was not disturbed, although, as the result of special treatment, numbers of ascarids were eliminated. The third and last type was rarely seen—only in the large intestine: Before the eyes of the operator there was formed a longitudinal furrow in the cecal wall about the length and width of



a finger. Crosswise of the furrow rose up several parallel ridges of the thickness of a lead pencil, so that the furrow presented the appearance of a ladder. From his investigations Mayer was led to conclude that the phenomena were due to peculiarities in the smooth musculature in general, like the spasms in uterus and bladder.

### Gann, Tokyo

December, 1921, 15, No. 4

- \*Nitrogen in Protein of Chicken Sarcoma. T. Furuhashi.—p. 27.
- \*Chemotherapy of Sarcoma. T. Ogata, M. Ishibashi, et al.—p. 41.
- Cancer in Manchuria. K. Yamamoto.—p. 53.
- \*Cancer of the Thymus. I. Honda and K. Taguchi.—p. 57.

**Protein in Chicken Sarcoma.**—Furuhashi's extensive research with the Van Slyke amino-acid method of analysis, applied to chicken sarcoma tissue and normal chicken tissues, failed to reveal any marked difference in the distribution of nitrogen. This suggests that tumor cells do not differ constitutionally from normal cells. The charts and long summary are in English.

**Experiments in Chemotherapy of Sarcoma.**—Certain complex cobalt salts displayed an evident curative action on rat sarcomas after subcutaneous injection, but not by the vein.

**Cancer of the Thymus.**—Three cases of primary malignant disease of the thymus are reported from Kyoto. It was a necropsy surprise in all, the two women of 52 and 32 and the man of 64 having died under the clinical diagnosis of heart disease and pleurisy, appendicitis or bronchitis and hemorrhage in the spinal cord. In two of the cases the structure was that of a carcinoma. (In German.)

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 19, 1921, 2, No. 21

- \*Herbals. G. van Rijnberk.—p. 2528. Cont'd to No. 24.
- \*Test for Sugar Content of Blood. D. Schrijver.—p. 2534.
- Hereditary Multiple Atheromatosis. A. Willems.—p. 2539.
- Influence of Reaction on Pancreas Amylase. J. T. Groll.—p. 2541.
- \*Syringomyelia with Autophagia. T. J. J. H. Meuwissen.—p. 2545.
- Fibromyoma on Thumb. J. F. O. Huese.—p. 2551.
- Training of Specialists. L. J. J. Muskens.—p. 2574.

**Old Herbals.**—This is the first one of a series of short articles describing the "Herbals" of former centuries, some new ones, dating from about the fifteenth and sixteenth centuries, having recently become available. Van Rijnberk reproduces some of the pictures of plants.

**The Benedict Test for Sugar in the Blood.**—Schrijver used a 2:1,000 solution for the Benedict test, which thus could be applied to as small a quantity as 0.2 c.c. of blood. His research was undertaken to determine the blood sugar in mental disease. In 154 double applications of the test, the response varied very little, not more than the natural range of error with such a simple test.

**Syringomyelia with Autophagia.**—The woman with typical syringomyelia had long had the habit of biting her nails and nibbling at the fingers of the left hand. Roentgenograms in 1906, 1908 and 1921 show that the fingers have thus been completely nibbled away, almost down to the carpus. She is now 51, and in her household work frequently burns herself but does not feel it.

### Hospitalstidende, Copenhagen

Dec. 7, 1921, 64, No. 49

- \*Fracture of Metatarsal Bone. C. J. Bastrup.—p. 769. Conc'n No. 50, p. 785.

**Fracture of Fifth Metatarsal Bone.**—Bastrup argues to prove that fracture of the tuberosity of the fifth metatarsal bone pries off a fragment of bone which is the bone described by Vesalius as a normally separate bone.

Dec. 21, 1921, 64, No. 51

- \*Diverticulum in Esophagus. V. Schmidt.—p. 801. Conc'n No. 52, p. 817.
- \*Measurement of Air Breathed. C. Lundsgaard.—p. 810.

**Pulsion Diverticulum in Esophagus.**—Schmidt reports nine cases. The pulsion diverticulum had been diagnosed before the operation in all but two. Three of the patients died, one with uremic manifestations; the two others showed no signs

of infection. These cases confirm that operations on the esophagus are not always borne well. Two of the patients recovered promptly after ligating the diverticulum at its base and suturing the stump when the sac had sloughed off; this method takes usually about eight days. Goldmann had no deaths in his twenty-two cases with this method. Schmidt describes his nine cases in detail, with the roentgen findings.

**Measurement of Intake of Air.**—Lundsgaard gives an illustrated description of the simple water and oxygen apparatus he has devised to measure the air inspired and expired and for other research on the respiration.

### Hygiea, Stockholm

Nov. 30, 1921, 83, No. 22

- \*Pathogenesis and Treatment of Rachitis. I. Jundell.—p. 753.

**Pathogenesis and Treatment of Rachitis.**—Jundell regards rachitis as the consequence of an overloading of the general nutritive functions. The overnutrition hampers the functioning of the cells, and thus the production of certain specific substances in the endocrine glands is reduced. These glands therefore fail to produce their normal quantities of hormones. The overloading may be from an excessive load, or from a constitutional or temporary inferiority rendering the ordinary load more than can be borne. The remarkable results that he has achieved with relative inanition in treatment of rachitis confirm, he declares, the correctness of this view. He has never seen rachitis develop in a child that, on account of pylorospasm or other cause, had not received the usual amount of nourishment. With atrophy from other causes, rachitis is liable to be extreme. Since early in 1919 he has been treating rachitis on this basis, keeping the child in relative inanition. This alone generally cures in mild cases. When supplemented with phosphorus and cod liver oil, even the severest rachitis subsides in a month, or in two at farthest. He gives three teaspoonfuls of the cod liver oil daily, adding 0.5 mg. phosphorus to each teaspoonful. With overfeeding, the cod liver oil does not prevent the development of rachitis, and it has an uncertain action as long as the overfeeding is kept up. He compared the outcome in five rachitic infants, fed on milk known to be very rich in vitamins, and seven nonrachitic infants given milk supposedly lacking in vitamins, the cows under constant control. No benefit from the high vitamin content and no injury from the lacking vitamins were apparent during the tests, kept up for from forty-one to 122 days. These experiences fail to sustain the theory of rachitis as a vitamin deficiency disease. In treatment of rachitis by relative inanition he varies the food as much as the age of the infant will permit, one-sided food being more likely to overstrain the nutritive apparatus than a variety, other things equal. He reports a number of cases to show the details of his treatment and the complete cure in a month or two under it in every case. The total intake of calories was reduced to 65 or 70 per day, per kilogram of weight, instead of the normal 100 calories. Not more than 60 to 75 c.c. of milk was allowed per day and kilogram. He estimates 70 calories to 100 c.c. of milk, and adds sugar and flour to bring the calories to the proper amount as needed, or potatoes or porridge for the older infants.

### Ugeskrift for Læger, Copenhagen

Jan. 12, 1922, 84, No. 2

- \*The Growth of Tuberculous Children. I. C. Rahbek.—p. 33.
- \*Technic for Calomel Injection. B. Pontoppidan.—p. 51.

**Growth of Tuberculous Children.**—Rahbek's figures of the growth of 500 children in a sanatorium for the predisposed, show that children abnormally tall for their age seem to be peculiarly predisposed to tuberculosis.

**Intramuscular Injections.**—Pontoppidan avoids the dangers of uneven distribution of the drug in the suspension by having the proper dose made into a pill with cocoa butter. This pill is then placed in the syringe and the syringe is heated until the cocoa butter is nearly melted. The warmth of the body as it is injected completes the liquefaction, and the exact dose is thus deposited. He devised this method in particular for injection of calomel in hospital services.



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## THE SPECIALIST AND THE GENERAL PRACTITIONER

IN RELATION TO TEAM-WORK IN MEDICAL  
PRACTICE \*

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A striking feature of contemporary medicine is the effort everywhere becoming manifest to correlate the activities of physicians, surgeons, and medical and surgical specialists for the purpose of securing comprehensive diagnostic surveys and more efficient treatment of single patients. As a result of this effort, so-called group practice in a variety of forms is emerging. New modes of association of clinical men have been suggested and new methods for the conjoint communication of experience have been devised, which are believed by many to be full of promise both for public welfare and for medical advance. If this new institution of group practice, which is based on new forms of cooperation and coordination, is to evolve in the best way, those who encourage it must give careful thought to the principles that should underlie it, to the advantages that may be derivable from it, and to the dangers that may beset it. It has occurred to me that, in this connection, some discussion of medical specialization in its relation to team-work in practice might be both timely and profitable; for to the growth of the medical specialties more than to any other factor must, in my opinion, be attributed the origin of the feeling that practice by means of team-work is an urgent need.

### MEDICAL MEN AS PRODUCERS OF SERVICES

Viewed from the standpoint of economics, medical practitioners are a part of the great want-gratifying mechanism of society, for they produce desired non-material "goods" that are called "medical services." Through the ages, society has seen fit especially to reward certain of its groups that produce only non-material services; physicians, teachers, lawyers and amusers are examples of such groups. The production and distribution of nonmaterial goods (or services) are fully as important for social welfare as are the production and distribution of material goods (or wealth).

Medical services directly gratify certain human wants; for human beings want health. When they have lost it, they want to know the reason why (diagnosis); they want to have it restored (therapy);

and some persons are far-sighted enough to employ physicians to help them to retain health when they have it, to guide their conduct so as to prevent the development of disease (prophylaxis). The people encourage, therefore, the practice of medicine and reward its practitioners in various ways in the hope that their own wants as regards diagnosis, therapy and disease prevention will be satisfied by means of the medical services rendered.

### THE EVER-INCREASING VARIETY AND COMPLEXITY OF MEDICAL SERVICES

In a society that is progressing, human wants are constantly changing; and the desires of a people for medical services form no exception to this general rule. As professional knowledge and skill grow, laymen gradually become aware of new possibilities of diagnosis, of treatment and of prevention. People have, accordingly, come to demand, today, a variety and complexity of medical and surgical services entirely unknown to, and largely unforeseen by, their forerunners. To fulfil these demands, work in medicine has had to be divided into a series of special tasks.

A glance at Chart 1, which contains a list that is by no means complete, will give some idea of the extent to which the field of medical practice has already undergone subdivision.

This subdivision of the field of medical practice has, as every one knows, necessitated a functional differentiation among the clinical workers. In the future, certain parts of the field will, doubtless, be still further divided, and, along with this cleavage, there will be a still further concentration of interests and restriction of activities of special workers. And as specialization becomes ever more pronounced, new knowledge will be acquired and new technical methods will be developed. These will, in turn, create among the people new wants, as well as the means for their gratification.

### THE EVOLUTION OF MEDICAL SPECIALISM

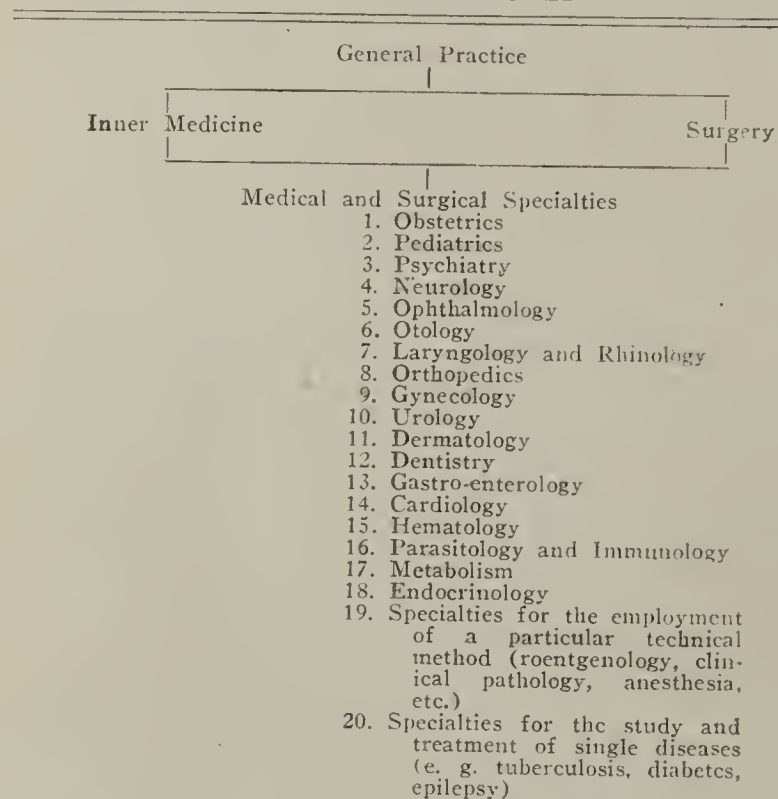
Medical specialism could not extensively and fruitfully develop before the advent of modern scientific medicine. Primitive medicine (folklore medicine) needed no specialization, for it knew nothing of diagnosis, and therapy consisted of driving out demons or of applying "white magic" to counteract the effects of "black magic." Certain gross symptomatic pictures of disease were, it is true, recognized relatively early, and, at times, there was a special physician for the treatment of each one of these diseases. But such pseudospecialism stood in no connection with the specialism by experts that we now know. As empiric medicine gradually developed, a certain division of labor among practitioners became manifest. Thus, surgeons, midwives and specialists on eye diseases

\* Read before the Yorkville Medical Society of the City of New York, Dec. 19, 1921.



early emerged. In Galen's time (second century A. D.), in addition to the general practitioner, there were already many men who devoted themselves to special branches. Thus, besides eye doctors, ear doctors and tooth doctors, there were general surgeons, surgeons who specialized in the treatment of single disorders such as fistula, hernia and stone, and physicians who made preferential use of single therapeutic procedures, such as hydrotherapy. It was not, however, until long after the revival of learning that medicine made sufficient progress to permit of any markedly advantageous specialism. Even the seventeenth century, with its individual scientific endeavor, and the eighteenth century, with its theories and systems, did not advance knowledge and technic to a degree compatible with a high grade of specialization. Really fruitful specialization in clinical work could not appear until after the natural sciences (biology, physics, chemistry) had undergone that great development that the nineteenth century wit-

CHART 1.—DIVISION OF CLINICAL MEDICINE INTO SPECIAL BRANCHES



nessed. It was the organization of modern science and the application of the experimental method to the development of technic that made modern medical specialism possible.

Hospitals for special classes of cases were founded relatively early in the nineteenth century, and specialization in clinical instruction appeared even earlier. Thus, in London, the Royal Ophthalmic Hospital was established in 1804, the Royal Hospital for Diseases of the Chest in 1814, and the Royal Ear Hospital in 1816. In 1825, a fever hospital was established in New York City. In 1832, the Lying-in-Hospital of Boston was founded, and in 1838 a Royal Orthopedic Hospital in England. Since then, an enormous number of hospitals for special groups of diseases, or for single diseases, have been built. It should not be forgotten that the foundation of such special hospitals lagged, however, almost a century behind the reform of clinical instruction by the universities of Edinburgh and Vienna. In these universities many of the special subjects were represented by clinical professors who taught them to the exclusion of other branches.

Physical methods of examining patients were much improved during the nineteenth century. General medicine had received a great impetus through the introduction of percussion by Auenbrugger (1761) and of auscultation by Laënnec (1815). These two fundamental methods represent notable applications of the science of physics to medical practice. They began the era of careful physical examination of all patients by physicians. There soon followed a great series of other applications of physics and of applications of biology, chemistry, anatomy, physiology and pathology to both general and special practice, for the advances rapidly made in the natural sciences and in the pre-clinical medical sciences yielded vast stores of new knowledge and of new technical procedures that could be clinically applied.

Medical practitioners quickly recognized their new opportunities, and intensive work in the various special domains of medicine speedily led to an unprecedented promotion of these special branches. New instruments of clinical exploration were gradually devised as aids to diagnosis. The compound microscope with its oil immersion lens, the clinical thermometer, the stethoscope (1819), the Sims speculum (1849), the ophthalmoscope (1851), the laryngoscope (1855), the sphygmograph, the spectroscope (1859), the stomach tube (1867), the cystoscope (1879), the roentgen ray (1893), the bronchoscope (1898), the string galvanometer (1903), and the respiration calorimeter (1904) may be cited as examples. Such instruments require some skill to operate them; they are not automatic machines that can be used by unskilled persons, though as technic comes to be further developed, thought, skill and intelligence may be more and more transferable from persons to machines that require only an attendant to start and stop them. The way roentgenology has developed would give color to this view. Bacteriology, parasitology and immunology also developed, illuminated etiology, and gave us staining methods, cultural methods, agglutinin tests, complement fixation tests, tuberculin tests, and the Schick test, as well as a large series of vaccines and antitoxins. Biochemistry provided elaborate analytic methods, and made clinical studies of the chemistry of metabolism practicable. Ehrlich's application of the staining methods of histology to the study of the blood was the starting point of modern hematology. Gas anesthesia (1800), ether anesthesia (1842, 1846), chloroform anesthesia (1847), cocaine anesthesia (1884), and infiltration anesthesia (1894) made it possible to perform operations without pain. Lister's antiseptic methods (1867) and, later, the introduction of aseptic methods, made feasible by steam sterilization (1886) and by the application of bacteriologic technic, abolished most of the dangers of infection of surgical wounds. The manufacturers of surgical instruments, trained nurses, organized operating rooms and operating staffs, and experimental researches in animal surgery enabled surgeons to become ever more daring in exploring the interior of the body, and modern surgery sprang upward under our eyes like the magic tree of the Hindus. Medicine, surgery and the specialties thrived as never before.

So great has been the growth of theory and methods in medicine that the medical schools can no longer attempt to teach all to the students. All that can be done in the undergraduate years is to teach the main facts and principles and the more important practical technical methods of the preclinical medical sciences



and of general medicine, general surgery and obstetrics; only a bird's-eye view of the subject matter and practical procedure of the special clinical branches can be given in the undergraduate medical school. The foundations for medical specialism the student gets, it is true, in this school, but the superstructure must be erected after his graduation. At least two or more years of postgraduate work are requisite for the acquisition of additional knowledge and of special skill in any medical or surgical specialty before the aspirant dare consider himself proficient. Intensive study of the anatomy, physiology, pathology and etiology in a special field, together with unremitting practice of the technical methods applicable to that field, are necessary for the preparation of the true specialist.

Pseudospecialism and inefficient specialism are all too prevalent and do much to discredit legitimate specialism. Despite this drawback, however, the genuine expert is finding his place. The public demands him and the profession needs him in addition to, and as an aid to, the indispensable general practitioner. The medical profession and the laity are both learning to frown upon the false and the insufficiently trained specialist.

Modern specialism in medicine is, then, the result of a long evolution, from the time of folklore medicine to that of modern science. The steps toward it were at first slowly and falteringly made. Since 1850, gigantic strides have characterized its progress.

#### HOW DIAGNOSIS AND THERAPY BENEFIT BY SPECIALIZATION

Medical and surgical specialties are capable of contributing significantly to the performance of the great task of satisfying the wants of the public for diagnostic and therapeutic services. They can do this in several different ways, and to some of these we may now conveniently turn.

1. *Specialization Increases Productivity.*—Specialization in medicine, as in other domains, is an effective means by which the results of a given amount of work can be increased. By subdivision of tasks, operations that are easier in themselves result; by repetition of tasks, operations come to be performed with greater ease.<sup>1</sup> The profession of medicine as a whole is complex; its subdivisions represent simpler units that in turn are further subdivisible into certain processes that can be finally resolved into still simpler constituent operations. Specialization is the most fruitful device for the increase of the productivity of workers and for the improvement of skill and judgment among workers that society has found it possible to contrive. This device can be made to be almost as valuable for medicine and surgery as it has proved to be for commerce and industry.<sup>2</sup>

2. *Specialization Facilitates the Acquisition of Accuracy, Speed and Skill.*—Modern medical and surgical technic is full of difficult and delicate tasks, and diagnostic and therapeutic methods require long practice in their application before accuracy and speed can be attained. The mere learning of how to apply a method will not suffice. The method must be applied often enough to become a habit. Even after becoming expert in applying a method, one must keep constantly at work

at it if he is to continue to be expert. The beginner in ophthalmoscopy, in laryngoscopy or in cystoscopy works slowly, clumsily and with effort; only gradually do hand, eye and brain become better coordinated, until, finally, as William James puts it, the performance is handed over "to the effortless custody of automatism." How many general practitioners are prepared to make accurately, quickly, skilfully and without strain a neurologic examination, a psychiatric examination, an orthopedic examination, or an examination of the urinary tract from urethra to kidneys? How many of them are masters of the technic of the Wassermann reaction, of blood culture methods, of blood sugar determinations, of basal metabolism measurements, of roentgenoscopy or of electrocardiography? How many of them are really expert in hydrotherapy, in radiotherapy or in psychotherapy? The general practitioner is, it is true, as necessary as ever; he plays a most important and indispensable rôle. But what loss would the medical profession and the public not suffer if all medical practitioners were to strive for equal skill in the application of all the various diagnostic and therapeutic procedures. If we are to supply the public with the medical and surgical services that modern science has made available, we must, in addition to the work of the general practitioner, have the cooperation of experts in more limited fields, men who have gradually built up through restricted practice the specialized experience that permits of achievements impossible without it. Thus, and thus only, can the difficult and delicate tasks of present day diagnosis and therapy be satisfactorily performed.

3. *Specialization Provides for a Better Distribution of Tasks.*—A further advantage for diagnosis and therapy derivable from specialization is the opportunity given for the distribution of tasks in such a way that each physician may do the kind of work for which he is best fitted. Differences in natural endowments and differences in opportunities of training can thus be utilized to the best advantage of the workers themselves and of the people for whom they work. When the square peg is placed in the square hole and the round peg in the round hole, society is the gainer. When no provision is made for physicians to concentrate on what they can do best, the public is the loser and the progress of medicine is retarded.

4. *Specialization Economizes Material Equipment and Mental Energy.*—Think of the unnecessary multiplication of professional equipment and the wastage incident to unused equipment in the absence of medical specialization. When, however, physicians restrict their activities to particular tasks, material equipment is reduced to a minimum, and productive resources are not wasted through idleness of armamentarium. Mental friction, also, is greatly reduced when professional activities are not too multifarious. Nothing is more fatiguing and time-robbing than passing rapidly from one task to another; the loss of time and energy involved in the change of direction and content of thought when medical men are compelled to engage in too great a variety of activities should not be overlooked.

5. *Specialization Accelerates Discovery and Invention.*—New knowledge is more rapidly acquired and new practical technical procedures are more swiftly devised and in greater numbers when medical men specialize in particular branches. Here we have to

1. Clay, H.: *Economics: An Introduction for the General Reader*, New York, 1919, pp. 21-45.

2. Marshall, L. C., and Lyon, L. S.: *Our Economic Organization*, New York, 1921, pp. 192-203.



deal with a virtuous circle, for, on the one hand, specialism increases knowledge and skill and, on the other, the growth of knowledge and of technic creates new specialties. Human wants grow as knowledge and skill increase; and ever new types of medical men must emerge to supply the services that will adequately satisfy these wants.

#### CERTAIN DISADVANTAGES OF MEDICAL SPECIALIZATION

It must be admitted that certain possible disadvantages and dangers pertain to specialization in medical practice. For specialization, if not properly controlled, may be harmful to patients, to general practitioners, or to the specialists themselves. To some of the objections that may be raised to medical specialism I shall now take occasion to refer.

1. *Patients Who Independently Seek the Aid of Specialists Often Make a Mistake.*—Patients may, through their own initiative, seek out specialists who are not needed by them at all or who are in a position to satisfy only a part of their medical needs, and that often the least important part. This tendency of patients independently to resort to specialists is to be deprecated. When there is need for consultation with specialists, or for a general diagnostic study by a team, the patient should be guided in his selection of specialist or team by his family physician. Unfortunately, the general practitioner has, in the past, sometimes been to blame in not recognizing early enough the need of special examinations or of team diagnosis in certain of his cases, and this has contributed to the tendency to self-direction among patients. The remedy lies in education of both the general practitioner and the public.

2. *General Practitioners and Specialists Sometimes Fail Satisfactorily to Cooperate.*—General practitioners often assert that they suffer as a result of the vogue of specialism, and they fear that the competition of private groups and especially of the so-called "pay clinics," which are semicharitable institutions, may prove to be detrimental to their interests. They complain that the all-around practitioners are no longer respected as formerly, and that the "specialists swoop down upon their patients and capture them from them." They think that general practice is looked upon "as the recourse of the mediocre and unambitious" or "as a sort of purgatory for the abandoned in medicine." They ask, "Is the general practitioner doomed to disappear?" or "Is the drudgery and labor of a general practice worth bothering with?"<sup>3</sup> In my opinion, their fears are not well founded. The good general practitioner is needed more now than ever before. It is he who must care for the bulk of patients suffering from acute diseases, and for a large proportion of the chronic disorders. Even in the obscure and difficult cases in which specialists and teams are desirable, the general practitioner should be associated with the specialist or the team in the care of the patients.

Specialists have doubtless sometimes been to blame in their treatment of general practitioners, ignoring them, failing to report to them, not insisting on patients continuing in proper relationships with them, or being negligent in lending support to patients' faith in them. Nothing could be more reprehensible; such

conduct is harmful to the patients, to the general practitioners and, in the end, to the specialists themselves.

3. *Peculiar Dangers Beset Specialism.*—Specialists, as a class, are exposed to a particular set of dangers, including those of the narrowness and the monotony of the "piece worker," those of loss of adaptability, those of objectionable aggressiveness, those of stubborn opinionatedness, those of boastful self-sufficiency, those of selfish materialism, and those of vanity and arrogance. Special practitioners should be cognizant of these manifold dangers and should be sedulously on guard against them; all special workers should take pains to neutralize as far as possible the evils that tend to accompany concentrated interests and narrow ranges of operation.

4. *The Limits to Desirable Specialism May Not Be Recognized.*—Another disadvantage to which medical specialization is liable is the failure to recognize that there are limits to its beneficial cultivation. In general, the good that results from division of medical tasks and from differentiation of professional functions far outweighs the evil. Modern medicine is inconceivable without specialism, which promises in the future to increase, I believe, rather than to diminish. Abolition of specialism would compel a return to a darker age of medical practice. But recognition of the dangers of specialization and of the limits beyond which it should not be carried is very necessary if it is to be made ever more useful to society. Regarding the limits set to specialization, though in all probability there will be a still greater extension of specialized clinical technic as physics, chemistry, biology and psychology continue to be applied to the solution of our diagnostic and therapeutic problems, it will be found that certain kinds of medical practice are, less than other kinds, susceptible of task-division. And besides the limits to be set to specialization on the analytic side, those on the synthetic side are worthy of careful consideration. There can be no advantage for practice in an analysis that outruns synthesis. Proper provision must be made for correlation of the activities of general practitioners and specialists, and for the integration of their results into unified services. There is much so-called group practice today that is not team-work in practice, for it consists merely of accumulating facts without subsequent coordination and integration of the facts. It is in "the knitting together of specialists" into a well-coordinated producing mechanism that group practice of the better sort or team-work in practice has to find its place (see below). And what that place is to be will depend to a large extent on (1) the administrative ability and administrative technic that the practicing teams can develop, and (2) the number of patients who will, through the advice of their family physicians, come to desire the services of such cooperating groups. The length, then, to which subdivision of medical tasks can advantageously be carried will depend partly on the nature of the tasks themselves, partly on the progress made in acquiring knowledge and improving technic, and partly on the management of, and the appeal made by, the correlating and integrating agencies that can be devised.

#### GROUP ORGANIZATION FOR THE CORRELATION AND INTEGRATION OF MEDICAL SERVICES

The conception of a general diagnostic survey of a patient as a whole (with full consideration of all the somatic, psychic and social elements concerned), though relatively new, is rapidly growing in appreciation in the

3. Billings, Frank: The Future of Private Medical Practice, J. A. M. A. 76: 349 (Feb. 5) 1921. Wynn, F. B.: The Triumphs and Dangers of Specialism, J. Indiana State M. A. 13: 338-343 (Oct.) 1920; The General Practitioner, *ibid.* 13: 365-371 (Nov.) 1920. Noble, R. P.: The Present Day Status of the General Practitioner, Canad. J. M. & S. 59: 113-118, 1921.



minds of patients as well as in those of the producers of medical services. All are coming to recognize the dangers of an ever-increasing medical specialization that does not provide for proper coordination of the activities of the specialists and the suitable integration of the results of their work; only through such coordination and integration can unified diagnostic conclusions be safely arrived at, conclusions on which a comprehensive therapeutic regimen dare be based and executed. Thorough analysis of the bodily, mental and social conditions of the patient, adequate synthesis of the facts elicited, and determination as far as possible of etiology and pathogenesis, are the aims of the clinical diagnosis of today. To deprive a patient suffering from an obscure malady of the aid that experts can give, to remain satisfied with the findings of a skilful examiner in a single domain while running the risk of overlooking something vastly more important in another, or to collect the findings of a whole series of specialists in a patient without considering carefully the relative importance of the various abnormalities found and without integrating the isolated data as far as possible into diagnostic wholes, are evils from which clinicians are trying to find ways of escape.<sup>4</sup>

The conversion of the conception of the thorough and well-proportioned general diagnostic survey into fact is the new problem that clinical workers have recently set out to solve. The problem is one of organization, of cooperation, of coordination and of integration; and its satisfactory solution calls, as I have said, for a high order of executive ability and of administrative technic. Specialization, it is asserted, has resulted in conditions in which, before very obscure and complex cases, at least, the special workers may be relatively helpless by themselves and in which they may be comparatively useless, or even harmful, to their patients unless they can be linked up into organizations that will produce complete services adequately controlled, instead of partial services indiscriminately rendered. These difficulties have long been recognized by our more conscientious practitioners. The method, more or less desultory, of occasional consultations was made use of with the object of overcoming them. But this "consultation method" was, and still is, very disconnectedly and unmethodically employed. It may be compared with the consultation method of the generals of the allied armies on the western front before the supreme command was given to General Foch. What is needed, it is urged, is the transformation of the *mobs* of medical and surgical specialists into *teams* of systematically arranged cooperatives, in order that their special activities may be organically united in the interests of the patients to be served. In response to this need, the new institutions of group diagnosis and group therapy, in which general practitioners, internists, surgeons and other specialists combine to perform team-work are, as a logical sequence, now being established.

Strange as it may seem, this remedy for the evils of an increasingly incoherent specialization has involved the development of new kinds of specialists, namely, (1) specialists in team organization, (2) specialists in team management and, by far the most important, (3) specialists in the integration of the collected results of diagnostic studies made by members of the teams.

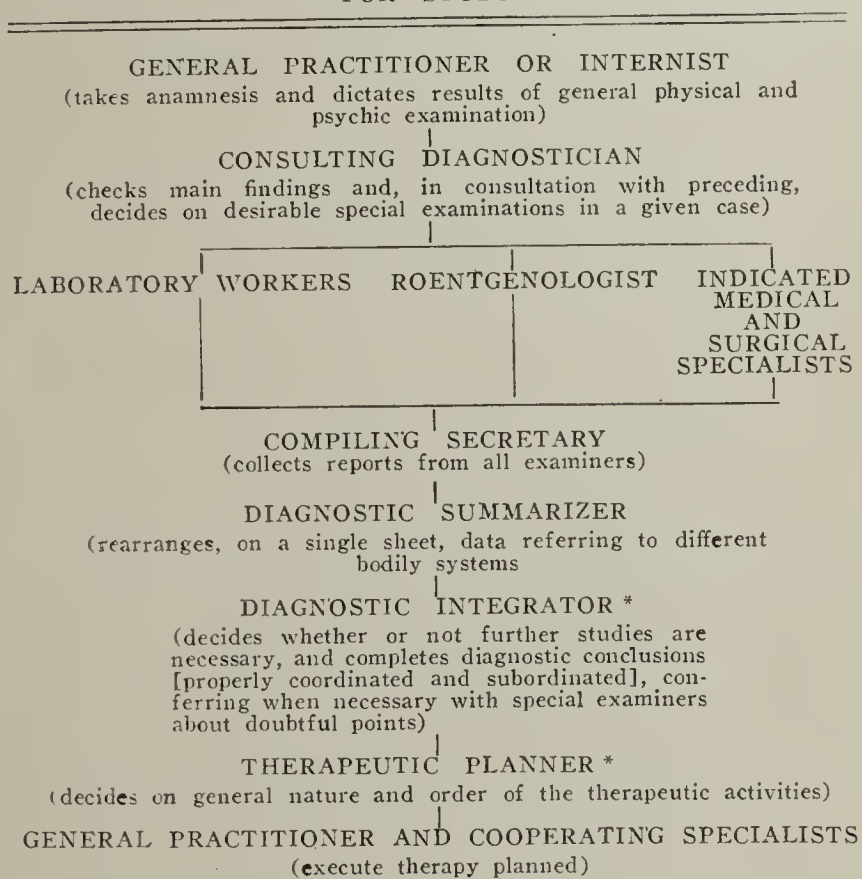
4. The Rationale of Clinical Diagnosis, in Christian and Mackenzie: Oxford Medicine 1: 619-684, 1920; The General Diagnostic Study by the Internist Cooperating with Groups of Medical and Surgical Specialists, New York M. J. 108: 489-493, 538-542, 577-582, 1918; Group Diagnosis and Group Therapy, J. Iowa M. S. 11: 113-121, 1921.

Compact groups are not essential; overlapping groups are often preferable. The principle of specialization is thus further applied by assigning to certain men especially adapted to their performance the tasks of linking the specialists together into a working organization, and of integrating the results of their activities.

The general plan for team practice will be clear from Chart 2, indicating the route followed by a patient referred for study.

Unless the work of organization, management and integration are efficiently performed, that of the cooperating specialists will not be effective. Organizers, managers and integrators of the type desirable for team-work in practice are as yet not easy to find, though they will doubtless appear if the demand for them grows more importunate. For the post of "group organizer" and for that of "group manager," persons of special administrative ability should be sought; for

CHART 2.—ROUTE FOLLOWED BY PATIENT REFERRED FOR STUDY



\* The diagnostic integrator and the therapeutic planner will often be one and the same person.

the post of "diagnostic integrator," men with more than ordinary endowment in what is called "common sense," with encyclopedic knowledge of the medical sciences, and with clinical experience extensive enough to permit them to estimate with accuracy the significance of symptoms and signs and to recognize their juxtaposition in clinical syndromes, should be chosen. These organizing, managing and synthesizing specialists, cooperating with the general practitioners and the analyzing specialists, will then constitute efficient differentiated-united teams for the conduct of group practice.

#### THE FUTURE OF GROUP PRACTICE

Contemporary opinion is divided concerning the future of team-work in practice.

Some enthusiasts go so far as to say that they believe that the time is not so very far distant when medical practice as a whole will be organized on the team system. They think that groups of increasing size for the "large-scale production" of medical services will gradu-



ally be formed through private initiative, and that, even in the rural districts, groups will be established, with or without local government aid, perhaps as county or township units. They think that the medical schools and their teaching hospitals need to be organized for team diagnosis and for team therapy, such reorganization to supplement (if not to displace) the unit system of departments now prevalent—a system that they hold to be responsible, in part at least, for the failure of medical students to realize the importance of the “knitting together” of specialists into diagnostic teams that will insure complete general diagnostic studies of each patient.

The more moderate supporter of the team-work idea believes that the bulk of clinical work will continue to be done by general practitioners and independent specialists, but that the team or group will always be turned to for aid in obscure and complex cases, especially of chronic disease.

Others, still less sanguine regarding the future of group practice, think that the phenomenon of the diagnostic group represents only a temporary phase, necessary, it is admitted, at this stage of medicine, but destined to be replaced by something entirely different later on.

There are many physicians, however, who see insuperable barriers to any great prevalence of group practice, now or in the future. For them, it seems preposterous to assume that the bulk of medical practice will, even in the distant future, be performed by groups, and they contend that if such an attempt to extend group practice were to be successful, it would lead inevitably to “state medicine.”

Groups, they further say, will never become general, owing to certain special objections to them. Among these they emphasize, first, the difficulty of making satisfactory financial arrangements. among group members, though champions of the team idea maintain that such a difficulty can always be overcome if the welfare of society demands it. A second drawback that is made much of is the tendency to impersonality of group medical work (like that of any group work in an “industrial, pecuniary and urban economic system”), whereas every one knows that personal relationships are exceedingly important in medicine. To this, team workers rejoin that, though it is true that a tendency to impersonal relations does lurk in specialization and interdependence and in the new medical technology, yet where personal relations are desirable they can easily be arranged for through close contact of the patient with his family physician or with some especially designated and fitted member of the group. The circumstances of a particular situation determine how far personal, and how far impersonal, relations are desirable. Though the number of impersonal relations may increase, team workers are not likely to undervalue the importance of individual human personality and will see to it that it functions in the new environment.<sup>5</sup>

A third objection urged is that it has never been possible to organize the production of personal services in the same way that the production of material goods or wealth has been organized in our industrial systems. Anything like the factory system of organization is, it is asserted, inapplicable to medicine, because the services to be produced differ much among individual

patients; though standardization of parts of the diagnostic process may be feasible, there can be no such extension of standardization as is characteristic of mechanical industries organized for the production of a single article. Furthermore, since group practice tends to extend rather than to limit specialization, conditions might develop in which the variety of skill and experience required of the single special worker would become too restricted. Individual specialists might then cease to see the end and the utility of the work they did, and the effect might be to degrade distinctly the life and character of the specialists. Even though specialization and team-work in practice might reduce the economic cost of production of medical services to a minimum, the real human cost might actually be enhanced so that it became oppressive of society.<sup>6</sup> We surely do not desire, these objectors argue, any such excessive division of labor in medicine as will culminate in medical specialists that correspond to the machine tenders of factories, men whose lives are narrowed in scope and deprived of human interests. The monotony of such forms of occupation would, of course, be distinctly harmful.

A fourth reason advanced against the view that group practice is likely to become general is a financial argument. It is maintained that since the gain spirit is tabu in medicine, the organization and management of groups of medical practitioners cannot thrive as do organization and management in industry and commerce, where the employment of capital for the production of commodities and services is unabashedly animated by the gain spirit. Even if the organization of team-work in practice were to be inspired, not by hope of financial gain, but entirely by the desire to produce services of higher value at lower cost for patients, it would not be possible, these objectors say, to secure the cooperation of the more independent natures among practitioners; nor would the rewards for the enterprisers be sufficient to induce physicians to elaborate and execute plans for the combined production of services. The medical profession, they assert, contains but little organizing talent. Men in whose minds such plans could originate, and men with the intellect and will power to make them successful, are likely, they think, to turn to enterprise in fields other than that of medical practice, where conditions are more favorable, where the rewards are greater, and where the risks taken are less.

Finally, still other objectors hold that medical education is improving so rapidly that in a few years from now the graduate of the better medical school, with a little hospital experience afterward, will be so well trained in diagnosis and therapy that he will be able to do by himself alone what only an organized team can now do in the production of medical services. Much of the special technic now thought desirable will, they assert, disappear as experience accumulates and short cuts to diagnosis are discovered. Thus, a man who has worked with the electrocardiograph quickly learns how to do without it in ordinary practice. One who has become familiar with the relation of basal metabolism studies to practical medicine can get along very well without a calorimeter simply by weighing the patient regularly while his diet is controlled. The specialist is, they tell us, a pioneer who develops new methods, which, however, general practitioners can soon learn to do without. But do not those who advance this

5. Consult chapter on Impersonal Relations in Marshall's Readings in Industrial Society, Chicago, 1920, pp. 782-823.

6. Hobson, J. A.: The Social Problem, 1901, pp. 226-230.



argument forget that there will be ever new crops of technical methods under test to replace those that are abandoned? Will not the well trained graduate of the future have, in turn, his own particular problems of specialism to deal with?

But all such discussions of the probable future of group practice are more or less academic in nature. Team-work in practice seems, at present, to be performing a useful function and to be extending. It would seem sensible, then, to avail ourselves of it so far as it is advantageous, avoiding so far as we can its evils, and to leave the distant future to look out for itself. In any case, if group practice is to survive, it must benefit the public and it must be made helpful rather than harmful to the general practitioner. If team-work in practice should prove to be essential to public welfare, medical men must and will devise ways and means through which general practitioners, specialists and teams can all do their work satisfactorily; for the public, to be well served medically, must be cared for by a harmonious rather than by a discordant profession.

#### SUMMARY

In this address I have endeavored to throw light on some of the problems that confront the practicing profession today. I have referred to the ever increasing variety and complexity of the services that medical men produce in their efforts to satisfy the diagnostic, therapeutic and prophylactic wants of the people. I have called attention to the steadily increasing necessity of division of labor and of differentiation of function among medical practitioners, and have shown how the evolution of medical specialism has more or less corresponded to the growing need. I have tried to show how diagnosis and therapy benefit by specialization, which increases productivity, facilitates the acquisition of accuracy, speed and skill, provides for a better distribution of tasks among practitioners, economizes material equipment and mental energy, and accelerates discovery and invention. Though it yields these benefits, specialism, as I have indicated, is beset by its own special dangers; and it should be kept within certain desirable limits. I have dwelt at some length on the present day requirements for the correlation and integration of the services of general practitioners, internists, surgeons and specialists in the making of general diagnostic surveys and in the execution of comprehensive plans of therapy based on such general surveys. I have commented on the groups and teams that are being organized to meet this need, and on the emergence of new kinds of specialists—especially the diagnostic integrator—necessitated by team-work. Finally, I have detailed some of the conflicting views regarding the proper field of team practice at present and in the future. I shall be glad if my remarks have been of interest, and I hope that they will provoke a lively discussion.

1035 North Calvert Street.

**Medical Abbreviations.**—The Association of the German Medical Press has appointed a committee to study the subject of the best form for abbreviations of the most commonly used medical technical terms. Schwalbe has a sarcastic article in a recent *Deutsche medizinische Wochenschrift* on the absurdity of some of the abbreviations at present in vogue. The "Widal," for example, now may mean either the agglutination test in typhoid or the hemoclastic test for liver functioning. The committee is to present its report at the annual meeting in September.

## CARCINOMA OF THE BREAST

WITH A CONSIDERATION OF PRECANCEROUS  
CONDITIONS \*

BYRON B. DAVIS, M.D.

OMAHA

In March, 1921, I reported 190 cases of carcinoma of the breast, in all of which operation had been performed more than three years before. Questionnaires were sent to all these patients, and replies were received from 122. Of the 122 cases traced, seventy-five were free of recurrence, forty-five patients were reported as having died, and two were suffering with recurrences.

Computing percentages on the 122 gives a little more than 61 per cent. well and free of recurrence from three to twenty-one years after the operation. This is manifestly too high, since answers are more likely to be sent concerning successful than unsuccessful cases. Computing the results on the entire 190 cases gives us almost 40 per cent. of patients well and free of recurrence for from three to twenty-one years. This is too low, since some, at least, of the sixty-eight patients that did not answer are probably living and well. The true percentage of those remaining free of return probably lies somewhere between these figures.

It is not claimed that any of these patients are cured. A three or a five year period without recurrence is a purely arbitrary standard. I have had patients remain well five, eight, nine and ten years, and then report with recurrence, from which they later died.

The length of time the lump has been known to exist, or the apparent progress the disease appears to have made, is not nearly so good a guide to the prognosis as one would think. The first beginning of cancer is, unfortunately, painless. The lump is usually discovered accidentally, and the date of its discovery bears no relation to the date of the beginning of the disease. Often physicians are consulted about breast tumors, which the patient has just discovered, when the disease is found already far advanced and of very grave prognosis. Other women consult us with the frank statement that they have been aware of the disease for many months or even years, and it is found, clinically and pathologically, at a very early stage, with no palpable invasion of the axillary glands.

Why one breast cancer progresses so rapidly and sweeps the victim into an early grave and another is so mild as to seem almost benign never has been satisfactorily explained. There is no reason to doubt that the cell energy in one case is so great that it beats down all defenses the normal tissue cells are able to build up, while in another the attack is less overwhelming and the tissue defense is able to hold the growth at bay for a long time. In some cases the defense is feeble, scarcely any fibrous tissue being formed, and the lawless cells proliferate almost at will. In others, the fibrotic enveloping movement is so prompt and effective that the cancer cells have a struggle for existence. Is it not possible that, under favorable conditions, the cells may be smothered and rendered inert, and cure of the carcinoma take place without any one suspecting it ever existed? At the risk of criticism, I am almost certain that early malignancy is frequently cured spontaneously. At the opening of the battle there is no

\* Read before the Jackson County Medical Society, Kansas City, Mo., Nov. 22, 1921.



means of knowing how forcible the attack, or how effective the defense; therefore an accurate prognosis is often impossible.

Again I want to emphasize a statement made several times during the last few years, that a local recurrence does not signify that the case has become hopeless. Several of my patients have been operated on for a first, a second, and even a third local return of the disease; one of them now eleven years after the last recurrence is in perfect health. The operation for local return should be carried out along similar lines, and with the same boldness as the original operation. Since adopting the form of operation I am doing now, I am glad to say, local recurrence is much rarer than before.

The usual textbook descriptions of the clinical manifestations of breast cancer are very much out of date. Most of the modern textbooks describe advanced cases—and I hope to live to see the time when adherent skin, retracted nipple, fixation to the pectoral fascia, extensive axillary involvement, in fact, all the classical symptoms so familiar to all of us, will become as rare as the huge ovarian cysts of the last century. Every time I see one of these classical breast cancers it gives the feeling that some one has blundered. Even now, many women have the old time idea that cancer is incurable and, for this reason, keep away from the doctor until the pain becomes unbearable. To the credit of the medical profession, few cases of advanced cancer of the breast are encountered now in which a member of the medical profession could be censured for the delay.

The persistent propaganda carried on by the American Society for the Control of Cancer during the last few years, culminating in cancer week, so recently celebrated, is bearing some fruit. It is certainly adding greatly to the responsibilities of physicians. We have thrown down the gauntlet and there must be no backing down. There must be no superficial examinations, no time consuming hesitation, no trifling with a possibly early malignancy, no admonition to "wait and see what develops."

The public, or, at least, a large proportion of the thinking public, has learned enough about cancer so that there will be a material increase in the number of early operations. Continued education of the public to the fact that cancer is not a hopeless disease, and that the earlier it is operated on the better the prognosis, is sure to result in a larger number of operations in favorable cases. Many will consult us so early that a positive diagnosis will not be easy. But, when one can make a positive preoperative diagnosis, it is too late for the best results. The ideal operation for breast cancer is the one that begins as an exploratory incision. The frozen section made at once by a competent pathologist, together with an intelligent macroscopic examination of the growth after its removal, is coming to be the customary method of making the diagnosis.

If any woman could be kept under sufficiently close observation, she could be assured against death from cancer of the breast. I should like to see tried the experiment of keeping 1,000 women under the observation of a trained clinician for a series of years, in order to see if the foregoing statement cannot be made good. And, if proved true, why could it not be extended to 100,000 women, or to all the women of cancer age in the United States? It could be applied equally well to cancer of the uterus, of the lip and, in a less positive degree, to cancer of the internal organs.

Such an experiment is going to be carried out to a certain extent. Several already have decided to go to their physician every year to ascertain whether or not they are cancer free. Many life insurance companies are offering their policy holders an opportunity for periodic examinations free of charge. If such examinations are made with the view of determining the presence or absence of carcinoma as well as the condition of the heart, lungs and kidneys, it will be greatly increased in practical value. It will, at least, be a great aid in lessening the number of patients getting into a nonoperable condition before the disease is discovered.

Such an idealistic machine as has been suggested is not yet in working order. For the present we can act only when cases come to our attention. A lump in the breast should be looked on as an emergency surgical condition. Often it will be impossible to say whether the growth is benign or malignant. If cancer is already present, the cell division, the infiltration of tissue, the growth along the lymphatics will not stop and mark time, while a slow thinking and slow acting physician is looking wise and waiting for symptoms which will enable him to make a positive diagnosis.

When breast cancer is present and its removal is decided on, it should not be forgotten that no operation is better than an inadequate or a bungling operation. Death has often been hastened by operators who did not fully comprehend the problem before them. We are accustomed to guard the intra-abdominal viscera from contact with pus, when operating for infections, in the most painstaking manner; it is much more important to protect the normal tissue from contact with cancer cells when operating for cancer. It is vital for success in this work that the dissecting knife, at all times, do its work at a distance from all tissue having the least probability of cancer invasion.

Many local recurrences are unquestionably due to accidental implantation of cancer cells during the progress of the operation. If, inadvertently, one cuts into tissue that looks suspicious, the knife and other instruments that might have been soiled, and the gloves worn by the operator and assistants, should be pronounced unclean and discarded for new. The suspicious tissue should be swabbed with phenol (carbolic acid) or cauterized with the actual cautery, and a more remote periphery selected. It is usually possible to maintain the dissection so far radially from the lesion that no tissue that looks or feels malignant is even seen. It is only in advanced cases that difficulty should be encountered in keeping away from cancerous tissue.

The old-time procedure of slashing off the breast and tearing out the axillary fat and glands has been relegated to history, and the lines of the operation are definitely laid down in accordance with the operator's idea of the routes of dissemination. Except the very local neighborhood infiltration, extension, in carcinoma of the breast, is now conceded to be chiefly through the lymphatics. Metastasis by way of the blood vessels plays a minor rôle, and, after it occurs, all hope of a successful operation is abandoned.

Involvement of the lungs, pleurae, liver, etc., formerly explained as metastases through the blood stream, has been shown to be due to permeation of the lymphatic channels along the routes already pointed out. We are indebted to Handley for pointing out clearly the rôle of the lymphatics in the dissemination of cancer. Pathologists and clinicians alike have largely accepted his views.



Following the line of reasoning laid down by Handley, if the chief route of dissemination were embolic, through the blood stream, we would expect the sites of the metastatic growths to be similar to the locations of embolic infections, such as are seen in pyemia. Their distribution in the two conditions is far different. In pyemia, the frequency of splenic and of hepatic abscess is as two to three; in cancer of the breast, the frequency of splenic and of hepatic growths is as one to fourteen. One can hardly conceive an embolic cancer infection, by way of the blood stream, differing in its distribution from an embolic pyemic infection. The distribution of secondary deposits from cancer of the uterus, stomach, breast and lip is very different. If it was due to an embolic process through the blood stream, it ought to be the same. The secondary deposits depend on the location of the primary growth, a fact inimical to the idea of a blood stream infection. In cancer the extension seems to radiate in all directions, but most rapidly in the direction in which the lymphatic channels are largest and most numerous.

For a long time it was supposed that extension along the lymphatic was accomplished by the cells being carried along by the lymph current; it has been found that the growth extends almost as rapidly against the current as with it. This bears out Handley's contention that the cancer cells grow by budding, along the lymphatic channels, by direct growth, or "permeation." Accepting Handley's ideas, I have for several years been planning and shaping my operations in such a way that the lymphatic channels are cut off as far away as possible from the primary growth.

#### TECHNIC OF OPERATION

Keeping clearly in mind the channels along which the cancer cells advance centrifugally, a definite type of operation has been worked out calculated to head off all these highways of dissemination. If it is not possible to get outside the zone of actual lymphatic permeation, the operation is doomed to failure. If we get beyond the point of actual invasion around the entire periphery and all the cancer-bearing tissue within the blocked off area is removed, there is a high degree of probability that the disease will be completely eradicated. The operation described is much like that of Handley, but there are enough differences, I think, to warrant a description.

A routine skin incision is never made. It should be planned according to the location of the neoplasm, which should be in the center of a circular or wide elliptic incision. The margin of this incision should be 2 inches (5 cm.) away from the infiltrated area. Another incision begins on the upper arm at the insertion of the pectoralis major, and sweeps inward with a downward curve along the border of the pectoral, well above and outside the axilla, and meets the central incision at the most advantageous point for closing in such a way as to form the most comfortable and least disfiguring scar. The lower leg of the skin incision extends from the lower margin of the central incision downward and inward along the linea alba almost to the umbilicus.

The custom of removing a very large skin area had its origin in the mistaken notion that cancer extended mainly along the skin. It is now known that the chief mode of extension is along the fascial planes, and that skin invasion is due to the cancer cells reaching the skin by permeation along the lymphatics which pass from

the fascia outward. It is seldom necessary to remove so much skin that it cannot be sutured, and skin grafting is never required except in very advanced cases.

The skin is dissected from the underlying tissues, care being observed to take with it as little as possible of the subcutaneous fat. The dissection is carried inward as far as the opposite border of the sternum, and is loosened upward as far as the clavicle. The dissection is carried outward far enough to lay bare the digitations of the serratus magnus and the border of the latissimus dorsi, and at the lower end of the incision, the upper one fourth of both recti abdomini and the upper attachments of the external oblique are laid bare over a large area. It should be borne in mind that the main object of the extensive undercutting of the skin is to enable us to get rid of the widest possible area of lymphatic-bearing fascia, and in proportion as we succeed in this will our percentage of permanently relieved cases increase.

The next step is to block out this extensive area at the extreme limits of the skin dissection. It is never well to work from the breast toward the periphery; one should work from the periphery toward the common center. To work from the breast outward would run the chance of squeezing cells growing in the lymphatics still farther, and perhaps driving them so far away that they cannot be reached. Thus, in the very act of doing an operation to save life, it is possible to render a curable condition incurable. The danger of dissemination during an operation by rough and ill advised handling is very real.

The first step of the blocking off process begins in the axillary region. The sternal portion of the tendon of the pectoralis major is severed at its insertion on the humerus, and the muscle is rolled inward, its fibers being split just below the clavicle, the clavicular portion being retained. The upper margin of the axilla is opened, the costocoracoid membrane cut, and the insertion of the pectoralis minor to the coracoid process also cut. This muscle ought always to be removed entire, not cut and later united as sometimes advised; it lies too near to the so often infected subclavian glands to be safely retained. Sharp dissection is the only safe way to clear out the axilla, and the contents are removed by dissecting, from the apex downward, cutting close to the axillary vessels and leaving no fat adhering to them. By dissecting carefully and seeing everything clearly, there is no risk of accident. If an obviously cancerous gland adheres to the axillary vein and the wall of the vein is apparently infiltrated, the vein is ligated above and below the invaded portion, and the intervening segment removed.

The dissection is now carried inward just below the clavicle, the fat and glands below being carefully separated from the artery and vein above. The blocking out has now proceeded to the inner extremity of the clavicle; it next proceeds across the upper portion of the sternum, the fascia being dissected from the sternum and far enough to reveal the costal cartilages. This shuts off all communication with the opposite breast and from the retrosternal glands.

The dissection proceeds downward from the lower sternum, and blocks out and removes by reflecting upward the fascia covering the serratus magnus and border of the latissimus dorsi and reflecting it inward. If the disease is primarily located in the outer hemisphere of the breast, I always remove from three to five of the upper digitations of the serratus magnus.



This completes the blocking out process, the whole periphery of the portion to be removed having been raised and rolled inward toward the breast.

It is now easy to remove the entire blocked off area. By a few strokes of the knife, the large island of tissue is severed from the chest wall. This is done as cleanly and neatly as possible. Nothing impairs the appearance of the operation so much as to leave irregular and ragged tufts of muscle standing out over the thoracic wall; but such a spectacle is of minor importance compared with the danger of leaving some cell groups which would nullify the operation, or of leaving behind devitalized tissue which might complicate smooth convalescence.

Hot packs are placed over the raw area to aid hemostasis. All bleeding vessels, having been caught with forceps as they were cut, are now methodically tied with plain catgut. A dry wound is of the utmost value to insure smooth healing.

A stab wound is made through the external skin flap a little below the axilla, and through it is drawn, from within out, a small rubber drain, which is removed in twenty-four hours.

The skin has been undercut over so large an area that its borders are easily brought together without tension. Three or four silkworm-gut sutures are made to bring the skin edges into contact at appropriate intervals; and a running, interlocked stitch of horse-hair or dermal suture quickly and nearly approximates the edges of this long skin incision.

A copious sterile gauze dressing is put on and bound on with a thoracic jacket. It is well to have a pad so placed as to push the skin well up into the axilla and thus fill in the space. The arm is kept well abducted from the thorax, and the elbow rests easily on a pillow. The patient is encouraged to use the arm from the first. No trouble about motion has been encountered since keeping the arm well away from the side and insisting on early and frequent movement. The second morning after the operation, the patient is propped up in bed, if there is no contraindication; and after the third or fourth day, she spends a part of each day in an easy chair.

The most important element in the success of this operation is to keep the dissection as far away as possible from diseased tissue, and is most promising when the whole procedure can be carried out without seeing any cancerous tissue. This is possible in cases with a very considerable amount of infiltration and even when permeation has advanced along the lymphatics several inches.

Intensive deep roentgen-ray therapy is made use of after every radical operation for breast cancer. It is repeated about every four weeks for from six to ten months as a routine. I am not yet fully convinced of the value of the roentgen ray; the dosage delivered to the deeper tissues seems yet too uncertain and hard to measure. I am positive that much ill-advised irradiation has been carried out and that there must be a great deal of exact scientific observation and comparison of results over long periods before this kind of therapy can be considered really standardized.

Some patients do not come to the surgeon until the condition is so far advanced that, for the credit of surgery and the good of the patient, it is better that no operation be done. Among the conditions that render operation futile may be mentioned: (a) deep involvement of the chest wall; (b) fixation of the axillary

mass; (c) very extensive skin involvement; (d) enlarged and fixed supraclavicular glands; (e) secondary growths in the lungs, liver or other viscera, and (f) bone metastasis.

#### IMPROVEMENT OF RESULTS

We now have reached the most important phase of the subject under discussion. How can the great number of deaths from breast carcinoma be prevented? The radical operation has been developed about as far, and is as extensive, as seems practicable. That there will be any great improvement on the present technic is doubtful.

Not much of real value has come yet from the roentgen ray or radium except as an adjuvant of surgery. Many rather dramatic claims have been put forward, and undoubtedly wonderful immediate results have been obtained, and pain has been mitigated; but this does not mean that the patients have been cured. Roentgenologists have thus far been unable to place the heavy dosage at the point most needed without a destructive superficial dose. I am watching with much interest the development of the very high voltage machines so greatly acclaimed of late, and sincerely hope they will justify the claims made for them.

In the meanwhile, as far as greatly improving the present results is concerned, we are up against a stone wall, unless (1) the custom is established of operating on patients very early while the disease is yet localized within the mammary gland or its immediate environment, and susceptible of complete removal, and (2) it is learned how to recognize and cure precancerous conditions.

The public propaganda is likely to accomplish something, perhaps more than we really think, in securing the patients' cooperation. But the gain in time of operation will be limited because, first, it is too much to expect a very large portion of the laity to be sufficiently impressed, and, secondly, the disease is insidious in its onset, and often greatly advanced and widely disseminated, before it is suspected there is anything wrong.

It has for a long time been an idea of mine, perhaps too idealistic to be realized, that the mitigation of the awful menace of breast cancer, and of all cancers wherever located, is in the recognition of precancerous conditions and their correction or removal. The success of the war against cancer will depend less on our ability to detect formed cancer than on our learning how to decrease the incidence of cancer.

It is almost axiomatic that cancer never originates in perfectly normal tissue. In every case the pathologic proliferation prepares the seed from which carcinoma germinates. The crux of the whole question rests on the possibility of learning what functional or organic changes in the breast prepare a suitable soil, how such changes may be recognized, and how far we are justified in going, possibly by doing destructive surgery, before the cancer has yet come into existence.

Standardized agreement as to what constitutes these precancerous conditions is woefully lacking, and this is attested by the diverse views of different pathologists and surgeons. If the present knowledge of the histogenesis of breast cancer is ever to be of practical value, the surgeon and the pathologist must work together as they have never done before.



Cancer cells are recognized only by their behavior. It is impossible yet to distinguish cancer cells from normal cells except by their environment. Since this is so, who can tell the moment the benign cell ceases to be benign and becomes malignant? Who can tell whether the cell, before it breaks through the basement membrane, is malignant or benign? Is the cell innocent before it bursts through the basement membrane, and is it, by the accident of migrating from its former and natural epithelial environment and getting into the surrounding connective tissue, converted into a cancer cell? Pathologists seem to believe that the cell has become malignant before its migration, and that this fact explains why it breaks away from its former environment; but the microscope recognizes it as a normal cell until it changes its habitat. Perhaps biologic chemistry may yet prove that the influence of the connective tissue converts the normal migrated epithelial cell into the cancer cell.

There is a fairly general opinion that many cancers have their origin in fibro-adenomas, in duct cysts, and in chronic cystic mastitis. But when two such trained investigators as Bloodgood and Sir Lenthal Cheate reach such conflicting conclusions, from the examination of pathologic breasts which must have been essentially similar, it must be admitted that we are yet far from having a standardized basis by which to judge the changes that must occur in breast tissue to render it precancerous.

Cheate shows a large number of cystic breasts, in parts of which the malignant process is just beginning. He shows others that yet show no malignant change; but the condition otherwise is so like the first series that he feels justified in concluding that they would have occurred if the breast had not been removed. He states that in the cysts proliferation of epithelium is constantly going on, and as long as it remains within the capsule of the cyst it is considered benign, but is liable at any time to invade the fibrous tissue outside the cyst wall, when it is called cancer. The conclusion is forced upon us that the line separating benignancy from malignancy is a very narrow one and at best somewhat imaginary.

As nearly as I can determine from a recent article by Bloodgood,<sup>1</sup> he has reached the conclusion that mammary cysts practically never lead to cancer.

Nicholson of London, in commenting on Cheate's article, agrees, in the main, with all his conclusions. Nicholson states that he has insisted for years that hyperplasia passes insensibly into carcinoma, and that "there can be no difference in opinion as to the dangers of cystic changes in the breast."

Ewing states that of all the breasts excised for cystic disease that he has examined, pronounced precancerous changes or miniature carcinomas were found in 50 per cent., and that very few cancerous breasts are found that do not show phases of chronic mastitis in outlying portions. He says: "It is therefore clear that chronic mastitis is a very important predisposing condition to mammary cancer." Although Ewing concedes that chronic mastitis sometimes retrogrades and ceases to be troublesome and that simple cysts may disappear spontaneously, he considers that the "disease is generally progressive and most cases eventually terminate in carcinoma or surgical removal."

In another connection, Ewing says: "The growing tendency to remove the breast for recognized chronic

mastitis or suspected carcinoma, while probably sacrificing some organs unnecessarily, has justified itself in the writer's material, by securing the early removal of some miniature carcinomas, and more precancerous lesions."

Finney says that his study of some predisposing causes of cancer, and especially chronic cystic mastitis, "has tended to strengthen the position of those surgeons who have advised the complete extirpation of every breast, the seat of any one of these conditions." Finney also puts himself on record in favor of the removal of every benign breast tumor.

Cheate's answer to the question, "How shall cyst-containing breasts be treated?" is so pertinent that I am taking the liberty of quoting it in full:

After consideration, I am bound to say, I would advise the removal of every breast which is obviously clinically cystic. I would advise this course if only a single cyst were clinically present, for the reason I have given. In practice, I leave the nipple and the axillary lymphatic glands. Some surgeons, I know, are removing cystic breasts as the means of getting rid of cystic breasts, and my evidence compels me to believe that breasts that are known to be cystic ought to be excised with the object of preventing a far greater calamity. I am sure cysts are dangerous.

Paul expresses the belief that in the involution period all cases of unyielding mastitis should be treated by amputation of the breast.

I have quoted these authorities to justify the position taken with reference to these conditions we call "precancerous." The imaginary line between many of these cysts and especially chronic cystic mastitis is so narrow that the best trained pathologists often differ in their interpretation. If Ewing is right when he says most cases of persisting chronic cystic mastitis finally terminate in cancer, we are not justified in continuing the do-nothing policy usually followed in such cases. It is better by far that an occasional breast be sacrificed unnecessarily, if, by this course, many others are rescued from a cancer death. A simple amputation produces a slight scar as compared with the radical operation for breast cancer.

Younger women with mastitis have a fair chance of recovery, and I would not think of adopting such radical measures with them, unless they are great sufferers and the disease is unusually extensive. From and after the age of 35, the time cancer is most likely to develop, if the mastitis is pronounced, and especially if pain and tenderness are prominent symptoms, after stating the facts to the patient as nearly as possible, she is given a chance to decide what she wishes done. Several, since this plan was adopted, have elected to have their breasts removed.

Until the last year my logic was not convincing enough, or my courage not sufficient, to take this position. More lives will be saved and much suffering prevented if these patients with recognized precancerous conditions are given the benefit of the doubt. It is better to see an occasional breast sacrificed that would never have become cancerous, than never to remove a breast until its malignancy is so apparent that no doubt can remain.

Every adenoma and fibro-adenoma ought to be removed. By this it is not intended that every girl or young woman who thinks she has discovered a lump in her breast should be subjected to operation. As all know, many of these cases are more mental than physical, and all that is needed is to reassure the patient and stop her worry, never failing to keep her under obser-

1. Bloodgood, J. C.: The Pathology of Chronic Cystic Mastitis of the Female Breast, *Arch. Surg.* 3: 445 (Nov.) 1921.



vation till we are sure the little trouble she had has disappeared. Even young girls occasionally have definite fibro-adenomas; these should be removed.

In spite of all statements to the contrary, there is room for much optimism in the outlook for improvement of results in breast cancer. It lies, first, in more early operations, while the disease is removable, by intelligently carried out, radical operation; and, secondly, in a clear recognition of the conditions which have been found to be precancerous, and treating them courageously.

## LOCAL SPASM OF THE ESOPHAGUS AND IMPAIRMENT OF DEGLUTITION

FOLLOWING LOCAL INJURY OF THE PHARYNGEAL  
AND ESOPHAGEAL MUCOSA

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The following report, written at my suggestion by the patient herself, is deemed worthy of recording because the patient is a trained physiologist and therefore qualified to note and analyze the physiologic states (peripheral and cerebral) entering into the periodic esophageal spasms and impairment of deglutition that so frequently follow local injury to the upper alimentary tract. The patient (Dr. Emma Kohman-Ivy) has a normal and stable nervous organization, and hence unusual worry or fear is eliminated.

These points in the report seem of physiologic and clinical importance:

1. The long continued difficulty in initiating the reflex part of the swallowing act was probably due to the extensive destruction of the pharyngeal mucosa and with it the endings of the glossopharyngeal nerve. This nerve, which innervates the "chief spots," is the chief factor in initiating the reflex stage of deglutition. The gradual recovery from this difficulty is due either to central reeducation or to partial regeneration of the end organs of the glossopharyngeal nerve.

2. The spasm of the esophagus on swallowing food always occurs at the stricture. As the stricture is located in that part of the esophagus having no local nerve centers (Auerbach's plexus) and made up of striated musculature alone, the spasms represent a long reflex initiated by overdistention of the normal tissue near the point of the stricture, the vagus nerves serving both as afferent and efferent pathways for the reflex. Overdistention of the normal esophagus produces similar local spasms (secondary contractions).

3. The fact that the same food, having the same physical consistency, does not always initiate the spasm, and the further fact that active cerebral states (attention, anxiety, fatigue, etc.) predispose to the spasm are probably due to varying degrees of tonus in the esophageal musculature. But there may be another factor in this particular case. There is some experimental evidence that the glossopharyngeal nerve is an important factor in maintaining the normal degree of esophageal inhibition by way of the vagus nerves. And since the injury in this case involved extensive destruction of the glossopharyngeal nerve endings, this factor by itself might have induced some esophageal hyper-tonus. Destruction of the esophageal mucosa, and with it vagus inhibitory afferents in the region of the stricture, is probably also a factor.

4. Whether the improvement that seems to parallel repeated dilations of a cicatricial stricture is due to mechanical action on the scar tissue or on the normal tissue, it is evident that the act of dilation may itself induce a prolonged esophageal spasm, probably through the same mechanism as that induced by a bolus of food. The headaches appearing at the third or fourth hour following dilations are probably induced by hyper-irritability of the afferent vagus endings in the region of the stricture caused by the dilation. This question calls for further investigation, experimentally and clinically.

### PATIENT'S REPORT

*History.*—April 27, 1919, while I was doing a microchemical determination of nitrogen in the physiologic chemistry department of the University of Chicago, by a modified form of the Folin and Farmer method, about 4 c.c. (65 minims) of concentrated sodium hydroxid, heated to boiling by contact with sulphuric acid, was shot into the back of my throat, without touching the lips or anterior portion of the tongue. Some was reflexly swallowed.

Within five minutes the throat was swabbed with dilute acetic acid, as the injured parts could not all be reached by gargling, and some of the dilute acetic acid was swallowed, but after about five minutes I was unable to perform the swallowing act. Marked edema of the epiglottis and false vocal cords occurred in about twenty minutes, but tracheotomy did not prove necessary.

For five days it was impossible to perform the swallowing act. During this time water was administered by rectum. At the end of the fifth day liquid could be swallowed in very small portions, but this was accompanied by very much coughing. There was less coughing when my body was in a reclining position during swallowing. It was later found that the coughing was due to the defective action of the epiglottis, as quite a bit of it (about one third) as well as of all other parts injured had sloughed off. From that time on, foods in liquid form or very soft and moist foods were taken in as large quantities as possible, until the end of the sixth week. By that time the body weight had been reduced 20 per cent.

Two weeks after the injury I was permitted to leave the hospital, as the temperature had returned to normal and I was able to walk and in large part care for myself. On the second morning out of the hospital I took a short walk, came back and ate some ice cream, and took a sudden chill, followed by a sudden rise in temperature to 103. This was followed by heavy perspiration. The temperature soon came down to normal, but for the next three days rose again to 101 or 102, and was kept that low only by bathing the head and parts of the body with ice water. After having been home five days I returned to the hospital. Examination of the chest revealed that bronchitis had developed. The cause of the bronchitis was most probably due to the passage of foods and fluids into the trachea, made possible by the lesion of the epiglottis and false cords. The infection was most severe on the right side, as I had been lying on that side most of the time while taking food. From that time I took my food while lying on the abdomen with the head hanging over the side of the bed. The liquids had to be sucked up through a straw. By eating in this manner, coughing during eating was stopped and the infection of the bronchial tubes cleared up. This method of eating was continued for many weeks, until I had learned to swallow despite the defective epiglottis. I still have some difficulty in swallowing liquids unless my head is bent slightly forward while drinking.

About the fourth week after the injury it became more difficult to swallow, and even liquids could be swallowed only in very small quantities. At the end of the sixth week the attempt to dilate the esophagus by the Sippy method was successful. From that time on dilations were done at first twice each week, later once a week, then every three weeks, and finally only when I began to notice marked difficulty in swallowing. The last dilation was made the latter part of



May, 1920. During this time swallowing improved continuously, liquids could be swallowed more easily than any solids, even if well masticated, until at the present time (one and one-half years after the last dilation), when swallowing is practically normal.

For about the first week I could not speak above a whisper, and for months my voice was very weak, but is normal at the present time.

*Difficulties Encountered in Attempting to Swallow.*—For five days the swallowing act could not be performed. At the end of the fifth day I was able to swallow orange juice if taken in very small portions. It was very difficult to swallow milk during the first four weeks following the injury, owing to the large amount of mucus present. Ice cream offered the least difficulty in this period of gradual recovery of the swallowing act.

There were two points at which difficulty was experienced in trying to swallow. One was the back part of the throat, and the other at the point of the stricture in the esophagus. The back part of the throat was the point of trouble during the first five days, during which time nothing could be swallowed. After that time food had to be forced through that part of the throat voluntarily with considerable force. This made it necessary to have all food in a semisolid or liquid form before it could be swallowed. Certain sticky, mushy foods, such as sweet potatoes, often caused considerable trouble, and even yet there is some difficulty in getting pasty foods, such as sweet potatoes, past this point of the pharynx. On the other hand, a smooth baked egg custard was swallowed with little difficulty even during the first six weeks. For almost two years, food would very often pass into the nasopharynx and even come out of the nose when a strong attempt was being made to swallow.

The difficulty that occurred in swallowing at the point of the stricture in the esophagus was not experienced until the end of the second or third week after the injury. This gradually grew worse until after the dilations were begun. Portions of food, either solid or semisolid, would lodge above the stricture, and liquids would go through the narrow opening very slowly. While food was lodged here, nothing could be swallowed. Unless this food was hard, there was no pain but simply a sensation of pressure similar to that of pressing with the finger on that portion of the throat. This was usually accompanied by a great deal of gagging, such as would occur on sticking the finger down into the throat. The esophagus seemed to be working to move the food down. This was manifest by the sensations occurring there and by sounds which I could hear and which were many times heard by those sitting at the table with me. When the particle of food finally moved on, it went with a "snap," often making a noise that those sitting near me could hear. As the stricture was just above the manubrium sterni, the food could often be dislodged by rubbing down on that portion of the throat. It was also often dislodged by taking a large swallow of water. The water did not go through, but in coming back would bring up the bolus of food. Vomiting movements were often started by putting the finger down in the throat, causing the esophagus to relax, thus releasing the lodged particle of food. Often, however, all efforts would fail for periods of one and two hours, during which time nothing could be swallowed. After I became accustomed to its presence, I could relax and the food would move down without any further efforts on my part. Up to the time of the first dilation, swallowing became more and more difficult, so that I worked at eating most of the day, to hold my weight. After the first dilation, swallowing became easier and I began to gain weight immediately. At present swallowing is almost normal. Particles of food lodge only occasionally, and then only for a short time.

The difficulty of food lodging at the stricture now occurs only when my attention is strongly diverted from swallowing, when I am anxious or worried, and when eating under unusual environmental conditions. During the first six or eight months following the accident, there was another factor which predisposed to this dysphagia, namely, fatigue. This was such a definite factor during those months that I made

it a practice, if I was tired, to lie down and relax before every meal. The size of the bolus does not seem to be an etiologic factor.

The "after image" following the passage or removal of a particle of food that had lodged at the site of the stricture was continuous and not intermittent in type, gradually decreasing in intensity. Its duration was from ten minutes to an hour, depending on the time the food had been lodged at the stricture.

*Treatments and Their Effects.*—At the first dilation, six weeks after the injury, it required considerable force to push the small enlargement on the end of the wire, slightly less than 3 mm. ( $\frac{1}{8}$  inch) in diameter, through the stricture.

As the throat healed more it was not so sensitive and consequently was little irritated by the dilations. The passage of the olives through the strictures did not cause much pain when everything went normal, but there was always some bleeding. Swallowing was very easy soon after the dilation, but in a few hours there seemed to be an edema (swelling) at the point of the stricture which made swallowing more difficult. A soreness and an aching pain developed at the point of the stricture within a few hours after the dilation, which was felt constantly for a day or day and a half, and became more severe during swallowing. The soreness during swallowing often lasted three days after the dilation. About three or four hours after the dilation, a headache developed which lasted for the remainder of the day (dilations were always done in the morning). As time went on, however, there was less bleeding at the time of dilation, and less soreness and headache followed.

On two occasions the following difficulty was experienced in the dilation process: The olives were pushed down through the stricture with relative ease, but on trying to withdraw them they were found to be immovable. Although great force was applied, the olives could not be withdrawn. After the attending man<sup>1</sup> had given up and planned another procedure, spontaneous relaxation occurred and the olives fairly fell out. The first time this occurred, relaxation took place in a few minutes; but the second time it was about fifteen minutes before the olives were removed. These treatments, especially the second, were so severe that the doctor and I were both ready never to have them repeated. After that, flexible tubes of different sizes were used with the usual wire guide.

The cause of these difficult experiences is not clearly known. It was thought that there might have been a shelf of scar tissue on which the olive may have caught, or a torsion in the esophagus. The roentgen ray did not reveal any such stricture, however. I myself believe it was a spasm, for as soon as it occurred I was aware of it, owing to a "clamping" sensation at that point, a sensation which I often felt when a piece of firm food lodged there, which likewise could not be removed until there was a relaxation.

*Localization and Character of the Stricture in the Esophagus.*—The stricture is about 2.5 cm. (1 inch) long. It is located 3 cm. ( $1\frac{1}{16}$  inches) below the lower level of the thyroid cartilage. The greatest diameter of the lumen at the stricture is anteroposterior, and one year after the injury was 1 cm. ( $\frac{3}{8}$  inch) in diameter. At the present time (two and one-half years after the injury) the greatest diameter, about 1.5 cm. ( $\frac{9}{16}$  inch) is still anteroposterior; and thick barium milk passes as quickly as in the normal individual. The scars in the pharynx are almost entirely anesthetic.

*Points of Physiologic Interest.*—These, as I have drawn them from my experiences, are:

1. A paralysis of the second stage of deglutition, coming on about five or ten minutes after the contact of the corrosive with the mucosa of the throat.

2. Edema of the epiglottis and false vocal cords, coming on about twenty minutes after the accident, which caused severe attacks of coughing, choking and dyspnea. These attacks occurred from five to ten minutes apart and were benefited by the use of a "croup tent."

1. Dr. R. C. Brown, Presbyterian Hospital, Chicago.



3. The formation of a very viscous mucus, difficult to remove from the mouth and throat, was not decreased noticeably in quantity by atropin.

4. A lesion of the epiglottis (the loss of the apical one third) and some edema and excoriation of the false vocal cords, associated with paralysis of the second stage of deglutition, made possible the passage of liquids, foods and saliva into the trachea when an attempt to swallow was made.

5. It was found, as is the case in postdiphtheric paralysis, that deglutition was facilitated by lying on the abdomen and hanging the head over the bed. Frequently the superior pharyngeal constrictor and associated muscles failed to function, and the food or drink would be expelled from the nose.

6. It was found that deglutition was also facilitated, if a voluntary effort was made to force the food through the pharynx by increasing the force of the latter part of the first stage of deglutition and protruding the chin forward.

7. Excitement, nervousness and fatigue made and still make swallowing more difficult and tend to induce spasm at the stricture.

8. After the ability to swallow returned, the stricture could be definitely localized by the sensation produced by the passage of a bolus of food. The bolus caused no sensation until it reached the stricture, when a definite sensation of pressure was experienced.

9. The pain sensation and after image are all rather definitely localized.

10. Marked peristalsis of the upper portion of the esophagus, when caused by some food lodging at the site of the stricture, produced sensations, beginning at the level of the thyroid cartilage and traveling downward, that are analogous to swallowing a very large bolus of food.

## PALLIATIVE CONTROL OF THE GASTRIC CRISES OF TABETIC NEUROSYPHILIS

BY THE RECTAL ADMINISTRATION OF CHLORAL HYDRATE AND SODIUM BROMID

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The helplessness of the physician and the abject misery of the patient during the gastric crisis of tabes dorsalis is most discouraging. The vomiting is central in origin, and the administration of cracked ice, carbonated waters, and so forth, has, therefore, little or no effect. It is too severe and continuous for the use of any sedative by mouth. Under such circumstances the hard pressed physician turns perforce to morphin, which in large doses controls both the pain and the vomiting. Often morphin is first employed by the attending physician under the misconception that gallstone colic or some similar organic and definitely removable cause underlies the symptoms. It may be necessary to use the drug a number of times before the true nature of the trouble is brought to light, and by that time the morphin habit is too often well established. The combination of morphinism and the crises of tabes dorsalis is one of the most unmanageable in the sphere of therapeutics, and may end fatally, whereas the prevention of the addiction in the first place might have saved the patient. The chronic nausea which fills the gaps between the crises of an addict removes the chance for recuperation between attacks on which his salvation by treatment for syphilis depends.

We have experimented with many drugs, using different methods of administration, in the effort to devise an improvement on the morphin hypodermic for the relief

of the patient. The most successful attempt has been the administration of large doses of chloral hydrate and sodium bromid by rectum. Since we have used doses large enough, and learned the safe intervals of administration of this combination, we have achieved results at least as good as those with morphin in the majority of cases, and the grave risk of developing a morphin addiction in addition to the original trouble has been avoided.

### METHOD OF ADMINISTRATION

An aqueous solution of chloral hydrate and sodium bromid is prepared so that one-half ounce (15 c.c.) of the fluid contains 40 grains (2.6 gm.) of each drug. The patient's hips are elevated by a pillow, and the solution is allowed to flow slowly under gravity pressure through a catheter introduced 15 cm. (6 inches) into the rectum. The patient is instructed to retain the injection. The room is then darkened and the patient kept quiet in bed. For large persons, above 150 pounds (68 kg.), as high as 60 grains (3.9 gm.) of each drug at one dose can be given. We have found it most satisfactory to give the injection at about bedtime, when possible, although this will depend on the need of the patient.

### TYPE OF PATIENTS

The patients in this series were all definitely proved syphilitics with gastric crises. Nearly all the cases were extremely obstinate and severe; the patients had been tried on ambulatory treatment and finally had to be hospitalized. Four patients were morphin addicts. All had used, without relief, the simpler palliative remedies, such as carbonated water, cracked ice, sodium bicarbonate, and rest in bed, before the rectal administration of the chloral-bromid mixture was resorted to.

### RESULTS

Our observations were made on twelve patients seen since Jan. 1, 1921. Each patient received from one to fifteen injections by rectum; the average number was four. In all, forty-nine injections were given, and definite relief was obtained in 76 per cent. of the forty-nine administrations. In two instances the injection was partially expelled, and in the remaining instances the hospital records noted "very little relief" or "not much improved." The administration of the chloral and bromid gives relief from both pain and vomiting for from two to five hours. In many instances, when the injections were given at 9 p. m., patients rested comfortably or slept most of the night. This is certainly all that could be expected from the usual hypodermic dose of morphin. In no case have we noted any deleterious effect from the drug, although occasionally injections have been repeated as often as three times in twenty-four hours. In no instance has the development of an appreciable immunity to these drugs been noted. The last injection, therefore, is apparently as effective as the first. When the attack is finally over, the patient is left without a handicap, to begin the period of recuperation on which his ability to weather the disease depends.

Gastric lavage was used in two cases and seems to be a valuable adjunct to treatment, especially if there is evidence of gastric distention. Codein administered in doses as high as 1.5 grains (0.1 gm.) has been disappointing. In four instances a paravertebral injection of the splanchnic nerves with 0.5 per cent. procain and a few minims of epinephrin was performed, but with doubtful results. The latter method also requires technical experience, which is not always available.



DESENSITIZATION OF HAY-FEVER  
PATIENTS BY SPECIFIC LOCAL  
APPLICATIONS \*GEORGE M. MACKENZIE, M.D.  
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A short time ago, with Baldwin,<sup>1</sup> I reported observations on the local exhaustion of cutaneous reactions in patients with hay-fever or asthma. It was found that, by repeated applications to the same skin area, either by the scratch method or by intracutaneous injection, of the substance to which the individual is hypersensitive, the reactivity may be locally abolished. This exhaustion of reactivity was repeatedly accomplished with horse serum, egg albumin, feather extracts, certain food proteins and pollen extracts. There seemed to be a considerable degree of specificity in the exhaustion, because, in a few individuals giving positive reactions to more than one substance, the reactivity to one protein could be locally abolished with little or no diminution of the reaction at that site to the other proteins to which the individual was hypersensitive. Furthermore, it was observed that the exhaustion was more readily effected with substances known to possess a higher degree of antigenic property, such as horse serum and egg albumin, than with substances having relatively poor or questionable antigenic properties, such as pollen and feather extracts.

## LOCAL DESSENSITIZATION

With these observations as a point of departure, I have attempted to apply this principle of local desensitization to the treatment of hay-fever.

Perhaps a word should be said about using the term "desensitization" in this connection. The word implies, of course, that the hypersensitiveness in question is a manifestation of anaphylaxis. At present it seems that the evidence either placing hay-fever and asthma in, or excluding them from, the category of anaphylactic phenomena is incomplete, but there is an almost universal custom of using the terms anaphylaxis, sensitization and desensitization in referring to these manifestations of human hypersensitiveness. Coca<sup>2</sup> has objected to the uncritical use of the terminology of anaphylaxis for any of the manifestations of hypersensitiveness in man, and one cannot fail to appreciate the force of his contentions. However, until there is sufficient evidence really to settle the question one way or the other, the use of the term "desensitization," with the foregoing reservation, seems most convenient and justifiable.

The literature contains several studies bearing on the principle involved in the treatment of hay-fever by local applications. First Dserzgowsky<sup>3</sup> and later Blumenau,<sup>4</sup> by applications of diphtheria toxin to the mucosa of the nose, throat and trachea, produced an active immunity which they believed to be in part gen-

eral and in part local. However, it is not clear from their work that a local immunity was produced. It is possible to interpret their results as due entirely to a general active immunity in which the nose and throat participated. It is clear, nevertheless, from their experiments as well as from the earlier observations of Ehrlich<sup>5</sup> on ricin and abrin immunization, that an active immunity may be produced by introducing the antigen into the upper air passages or the alimentary tract.

Sewall and Powell<sup>6</sup> demonstrated that, by varying the dosage, guinea-pigs may be either sensitized or rendered refractory to horse serum by intranasal instillation. Here, again, it is not clear whether a specific local desensitization was produced or whether the results were due to a refractory condition of the entire animal. Recently, Besredka<sup>7</sup> has studied the immunity produced when the oral and intratracheal routes are employed for administration of the antigen. With organisms of the typhoid-dysentery group he obtained results after oral administration which he interprets as demonstrating the production of a local immunity in the intestinal mucosa. Similar results were obtained by intratracheal injection of diphtheria bacilli. It should be noted, however, that Zingher<sup>8</sup> has been unsuccessful in an attempt to confirm Besredka's results.

## RESULTS IN THIRTY-EIGHT CASES

The group of patients on whom this brief report is based consisted of thirty-eight individuals with seasonal hay-fever; many of them also had asthma during the hay-fever season, but in all there was reasonably certain evidence (skin reactions and limitation of symptoms to the pollen seasons) that the symptoms were dependent on hypersensitiveness to pollens. A number of patients have not been included in the report for either one or the other of two reasons: Either the treatment was too incomplete to furnish an adequate test of the method employed, or no reply to follow-up letters has been received to date.

All of the patients included received what we have arbitrarily called a complete or nearly complete course of preseasonal (prophylactic) treatment. The pollen extracts were thus prepared: The pollen-containing portion of the plant was ground up in either a mortar or a meat chopping machine, and the pollen mechanically separated from the rest of the plant with carbon tetrachlorid. The pollen was then ground in an agate mortar with powdered glass until few or no intact pollen granules were left, and then the mass of powdered glass and pollen material was extracted with hundredth normal sodium hydroxid, first in the shaker for an hour, then in the icebox overnight, and finally in the shaker for another hour. The extract was then filtered through paper and a Berkefeld or Mandler candle.

5. Ehrlich, P.: Experimentelle Untersuchungen über Immunität; über Ricin, Deutsch. med. Wchnschr. **17**: 976, 1218, 1891.

6. Sewall, H., and Powell, C.: The Conditions and Characters of the Immunity Produced in the Guinea-Pig by Instillation of Horse Serum in the Nose, J. Exper. Med. **24**: 69 (July) 1916.

7. Besredka, A.: De la fièvre paratyphoïde B. expérimentale; du mécanisme de l'immunité dans la paratyphoïde B; de la vaccination par la voie buccale, Compt. rend. Acad. d. sc. **167**: 212-214, 1918; Du mécanisme de l'infection dysentérique, de la vaccination contre la dysentérie par la voie buccale et de la nature de l'immunité antidysentérique, Ann. de l'Inst. Pasteur **29**: 301-317, 1919; Reproduction des infections paratyphiques; sensibilisation au moyen de la bile, ibid. **33**: 557-568, 1919; De la vaccination contre les états typhoïdes par la voie buccale, ibid. **33**: 882-903, 1919; Infection et vaccination par voie trachéale, ibid. **34**: 361, 1920; Infection et immunisation par voie buccale contre la dysentérie et les états typhoïdes, Bull. de l'Inst. Pasteur **18**: 121-129, 1920.

8. Zingher, A., and Soletsky, D.: Besredka's Method of Oral Immunization of Rabbits with Ox-Bile and Paratyphoid Vaccine, Proc. New York Path. Soc. **20**: 133, 1920.

\* From the Medical Clinic of the Presbyterian Hospital and the Department of Medicine, Columbia University College of Physicians and Surgeons.

1. Mackenzie, G. M., and Baldwin, L. B.: Local Desensitization in Hypersensitive Individuals, and Its Bearing on the Prevention of Hay-Fever, Arch. Int. Med. **28**: 722 (Dec.) 1921.

2. Coca, A. F.: Hypersensitiveness, in Tice's Practice of Medicine, 1920.

3. Dserzgowsky, S. K.: Ueber die aktive Immunisierung des Menschen gegen Diphtherie, Ztschr. f. Immunitätsforsch. (Ref.) **2**: 602, 1910.

4. Blumenau, N. R.: Ueber die aktive Immunisierung von Kindern gegen Diphtherie nach dem Prinzip von S. K. Dserzgowsky, Ztschr. f. Immunitätsforsch. (Ref.) **3**: 196, 1911.



Five-tenths per cent. phenol (carbolic acid) was added as a preservative. Extracts prepared in this way have contained from 75 to 150 mg. of nitrogen per hundred cubic centimeters. We have standardized the extracts by content in Kjeldahl nitrogen, a method first suggested by Cooke and Vander Veer.<sup>9</sup> For routine use we have made up four strengths containing, respectively, 0.01, 0.1, 1.0 and 10.0 mg. of nitrogen per hundred cubic centimeters.

With a few patients, owing to extreme hypersensitivity, it was necessary to start with a solution containing only 0.001 mg. of nitrogen; a few were finally given a solution containing 50 mg. per hundred cubic centimeters, but the majority were started on the solution containing 0.01 mg. and carried through to the solution containing 10 mg. per hundred cubic centimeters.

In the group of thirty-eight patients there were thirty-five with late hay-fever, all of whom were treated with ragweed extract, and three with early hay-fever, treated with timothy extract.

In order to determine the effect of repeated local application of pollen extracts to the nasal mucosa, we divided the thirty-eight patients into three groups. Eight were treated by subcutaneous injections alone; ten were treated by local applications alone, and twenty by both subcutaneous injections and local applications. The routine method was to give the injections twice a week, beginning with the weakest of the four stock solutions, gradually increasing the amount and then the strength of the solution, until several injections of from 0.5 to 0.7 c.c. of the solution containing 10 mg. of nitrogen per hundred cubic centimeters had been given. For the local applications, the patient was given an ordinary nasal atomizer and instructed to spray the nasal passages night and morning, beginning with the weakest solution. If no symptoms were produced by free spraying with this solution, the next stronger extract was substituted and so on, until the solution containing 10 mg. of nitrogen per hundred cubic centimeters could be tolerated. It was soon clear that the reactivity of the nasal mucosa could be greatly diminished by the spray alone. Patients who, at the beginning, experienced symptoms of hay-fever after spraying the nasal passages with the weakest of the four solutions soon showed unmistakable evidence of increasing tolerance. In several instances, patients were eventually able, after from eight to ten weeks of spraying, to use freely a solution 1,000 times stronger than the one which at the onset had caused symptoms when used in very small amounts. There was, however, considerable individual variation in the rapidity with which the patients could increase the amount and strength of the solution used in the spray. The same variation in the rapidity with which tolerance is acquired has often been noted during the course of prophylactic injections. With all but two of the patients, the injections and spray were stopped a few days before the date when symptoms were due to begin. None of the nonspecific methods for alleviating the symptoms were employed during the season of pollination.

#### RESULTS OF TREATMENT

In estimating the result of treatment, we have found it difficult to assign, as some have done, a numerical value to the amount of relief obtained. We have, there-

fore, recorded the results of treatment under four descriptive terms: (a) complete relief; (b) almost complete relief; (c) considerable relief, and (d) no relief.

By "complete relief" is meant that no symptoms whatever were noted. "Almost complete relief" has been used for the patients who have had only trivial symptoms for a few days or a week, and at no time suffered distressing symptoms. "Considerable relief" means that the duration and intensity of the symptoms were clearly lessened in comparison with the patient's experience in previous years. "No relief" has been used for the patients in whom the symptoms were unaffected by the treatment, or relieved only to a degree that fell short of being properly called "considerable." Patients who have had both hay-fever and asthma during the pollen season may get complete relief from asthma, and little or no relief from hay-fever. Such patients have not been recorded as having obtained more than considerable relief. As there was little difference in the age, sex, severity or duration of symptoms in the individuals of the three groups treated differently, nothing will be gained by giving these data. The results of the thirty-eight patients who received a complete or almost complete course of prophylactic treatment are given in the accompanying table.

RESULTS OF PROPHYLACTIC TREATMENT IN THIRTY-EIGHT CASES

	Injections Alone	Spray Alone	Spray and Injections
Complete relief .....	0	1	3
Almost complete relief.....	3	2	9
Considerable relief .....	4	6	6
No relief .....	1	1	2
Total .....	8	10	20

From these results, and from the observations mentioned above that patients become tolerant of increasing strengths of the pollen extracts administered in the spray alone, one may conclude that it is quite possible to alter the reactivity of the nasal and pharyngeal mucosa of pollen-sensitive persons by local application of pollen extracts. This desensitization is manifestly quite different quantitatively from the desensitization which may readily be accomplished in anaphylactic animals. Neither by injections nor by local applications, nor by both methods used simultaneously has desensitization been produced in man with the rapidity, completeness or certainty characterizing guinea-pig desensitization. Whether the desensitization of hay-fever patients is also qualitatively different from the phenomenon in animals is not so clear; but, in addition to other evidence, the recent demonstration by Parker<sup>10</sup> that ragweed extract is a true antigen inclines one to view hay-fever desensitization as a saturation phenomenon in which an intracellular antibody-like substance unites with an antigen endowed with relatively low grade antigenic properties.

Whatever be the mechanism of the increased tolerance for the pollen antigen in these hypersensitive individuals, it seems clear that it is not necessary that the antigen be injected into the tissues in order that increased tolerance may be produced. Merely bathing the exposed surfaces of the cells has the same kind of effect as when the antigen is introduced into the tissues.

9. Cooke, R. A., and Vander Veer, A.: Human Sensitization, *J. Immunol.* 1: 201 (June) 1916.

10. Parker, J. T.: The Antigenic Properties of Ragweed Pollen, *Proc. Soc. Exper. Biol. & Med.* 18: 237, 1921.



One feels inclined to consider this a local desensitization dependent on an alteration in the cells of the nasal mucosa whereby their specific reactivity is markedly diminished. Although such an interpretation of our results is perhaps correct, one is not justified in concluding that a local desensitization apart from a general loss of reactivity has been demonstrated. The pollen extracts used in this work are soluble antigens, and since it has already been shown that a general active immunity may be produced by using the nasal route of administration, it is possible that the pollen antigen was absorbed through the nasal mucosa and produced a general desensitization which included the nose and throat.

It is well known that subcutaneous injections may relieve the symptoms of hay-fever without abolishing or even weakening the skin reaction very much; and hence the fact that the skin reactions of the patients treated with the spray were not perceptibly altered by the treatment does not necessarily mean that the desensitization was purely or even mainly local.

Further observations are necessary in order to determine just how valuable the method of local application of pollen extracts is in the treatment of hay-fever. Our series of patients is too small to justify conclusions as to the practical usefulness of the method and, furthermore, it seems quite probable that the details of the method may be improved; but whatever its value as a practical prophylactic or therapeutic procedure may prove to be, the principle involved is not without importance.

#### CONCLUSIONS

1. The reactivity of the nasal mucosa of hay-fever patients may be markedly diminished by spraying the nose and throat with the specific pollen antigen.

2. In a series of patients given specific prophylactic treatment by this method, the results compared favorably with those in a series of patients treated by specific subcutaneous injections, but were less satisfactory than when a combination of the two methods was employed.

41 East Seventieth Street.

**Epidemic Encephalitis Mortality.**—Deaths from epidemic encephalitis, in 1920, numbered 1,503, according to statistics made public by the Bureau of Census. These figures are based on death certificates issued in the death registration area of the United States. In 1919, the number of deaths from this source was 589, giving mortality rates of 1.7 and 0.7 per hundred thousand population, respectively. With the exception of the state of Delaware, deaths from lethargic encephalitis were reported for every state in the registration area. New York reported the largest number, totaling 364 and showing a mortality rate of 3.5 per hundred thousand population. A comparison of deaths in the city and in rural communities shows that 1,129 of the total 1,505 deaths occurred in the metropolitan communities, while only 376 were recorded from the rural districts of the country. The rate is, respectively, 2.6 and 0.8 per hundred thousand. The white population, with 1,453 deaths from lethargic encephalitis, has a rate of 1.8 per hundred thousand population, while the colored population, with only 52 deaths, has a rate of 0.7.

## MECHANICS AND TREATMENT OF FRACTURES OF THE FOREARM\*

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Fractures of the forearm probably offer more problems in mechanics than any other fractures in the body, not excepting the femur. There are here two bones which form a pedestal, supporting the hand and having attached to them an intricate system of muscles which control the hand. The arm in itself is of comparatively little use; it is the fact that it controls the motion of the hand that makes it important. The ulna can be considered an extension of the arm downward and the radius an extension of the hand upward, as the ulna articulates with the humerus in a pure hinge joint and is supported by the humerus, tapering down to a smaller diameter at its distal portion than at its base at the elbow. The radius, however, is wider at its distal portion, tapering toward the elbow. The radius is concerned with motions of the hand; the ulna, with motions of the arm. The radius forms an important part of the wrist joint, and the ulna a very small part. The ulna forms a very large part of the

elbow joint, and the radius a very small part. These two bones, of course, are joined by the interosseous membrane, the fibers of which run from the ulna to the radius in a slightly upward direction, so that a blow transmitted from the hand to the radius, driving the radius upward, has a direct pull on the ulna also, and, if the bones are fractured, has a tendency to draw the fractured fragments together. Many of the muscles of the forearm

have more than one direction of pull, depending on what position the hand occupies. The pronators and supinators have in some cases almost a direct transverse pull on both bones, and, in addition to their rotating action, some of them, as the pronator teres, biceps and brachioradialis, have a flexor action.

Fractures most frequently occur in the lower third of the forearm, because at this point the bones are less well protected by heavy muscles than they are in the upper forearm, and also because the ulna is weakest in the lower portion, and hyperextension or flexion of the hand exerts a direct pull on the lower part of the radius which may cause fractures, as in chauffeurs' or in Colles' fracture.

Considering the lower forearm, then, first we have most commonly the Colles fracture, the mechanism of which is familiar to all: a hyperextension of the hand with a blow directed upward, transmitted directly from the palm of the hand to the lower articular surface of the radius. The lower end of the radius is driven backward and upward, and the upper fragment is driven downward and forward. The upper attachments

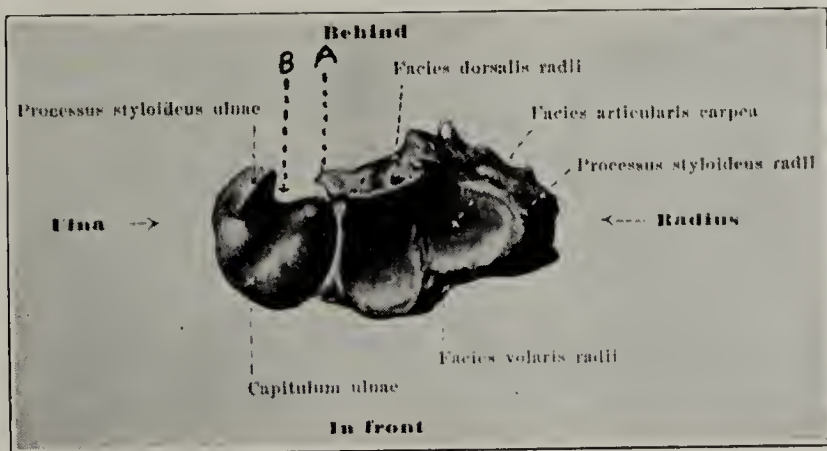


Fig. 3.—View of lower articular surface of right radius and ulna in full pronation. When the radius rotates into full supination, point A on radius fits into groove B in ulna. When radius is shortened by fracture, the lower end moves up and strikes the bulge in lower end of ulna instead of the groove, B, making full supination impossible.

\* Owing to lack of space, this article is abbreviated in THE JOURNAL by the omission of several illustrations. The complete article appears in the author's reprints.



of the anterior ligaments of the wrist tilt the volar edge of the lower end of the radius backward and upward, changing the angle of the wrist joint from an angulation which runs from the radial side upward toward the ulna and facing slightly forward, to a directly transverse line cut straight across the axis of the two bones and facing the lower articular surface of the radius backward and upward, leaving the typical silver fork deformity.



Fig. 4.—Chauffeurs' fracture: shortening of radius, with anterior displacement of upper end of loose fragment, and downward and forward displacement of lower end of ulna.

There may occur in this fracture something that has been given very little attention in the textbooks and writings on this subject. There is between the radius and ulna, at its lower articulation, a fibrocartilaginous lined joint held together by ligaments. At this point the radius rotates around the ulna. When the lower end of the radius is driven upward, if the ulna is not also fractured, then the ulna, to all intents and purposes, is displaced downward. This throws a strain on the radio-ulnar ligament and tears it, allowing the ulna to move downward and forward as the lower end of the radius moves upward and backward (Fig.

1). A picture is presented of a prominence on the ulnar and flexor side of the wrist, made by the styloid process and the lower end of the ulna protruding at this point, which also gives the impression of a displacement of the hand toward the radial side (Fig. 2). Looking at the lower ends of the radius and ulna where they articulate, it will be seen that the styloid process projects backward and downward; that there is a notch into which the radius fits when the hand is in supination (Fig. 3). Now, if the radius is driven upward and backward and the ulna downward and forward, the ligaments between the radius and ulna must be injured and the relation between the ulna and radius much disturbed, which explains the inability of patients with Colles' fracture improperly reduced to supinate to full extent. The point *A* of the radius no longer fits into groove *B* of the ulna, but strikes above it and prevents full supination.

This is also true of chauffeurs' fracture, which occurs as a result of a quick blow on the palm of the hand with hyperextension of the wrist, followed sometimes by a complete whirl of the crank striking the radius about  $2\frac{1}{2}$  inches (63 mm.) above the wrist. In this case, we have the mechanics of an indirect and direct violence combined. Here the radius is fractured about  $2\frac{1}{2}$  inches (63 mm.) above the wrist; the lower fragment is displaced forward at its upper end, as one

would expect it to be as a result of a tightening on the anterior ligament of the wrist joint where it is attached to the lower lip of the radius on the flexor side, which acts as a short lever to tip the upper end of the lower fragment forward. The brachioradialis, or supinator longus, now comes into play. This muscle, being attached to the humerus and to the styloid process of the radius, has a tendency to tip the upper end of the lower fragment toward the ulna, making an angulation toward this point. In Figure 1 it will be seen that instead of the radio-ulnar ligament being ruptured, the whole surface of the radius where it articulates with the ulna has been torn out and remains in place on the ulna. In this case perfect apposition can be had and maintained because the bony surface will reunite, leaving no deformity at the radio-ulnar joint. However, this is not the case in most injuries of this type. In most of them it will be found that the radio-ulnar ligament is torn instead of the bone surface of the radius being torn out with the joint intact. If these ligaments are not approximated and normal anatomic relations reestablished, there must surely result some interference with pronation and supination, and this joint should not be overlooked in any case involving shortening of the radius with no fracture of the ulna. It is often overlooked on account of the normal overlap of the radius upon the ulna, making it difficult to gage any injury to this joint. If a roentgenogram could be taken at right angles to the long axis of the forearm, it is my opinion that many more injuries and separations at this joint would be found than are found under present conditions.

Fractures of one or both bones of the forearm above the wrist are affected by all the muscles of the forearm

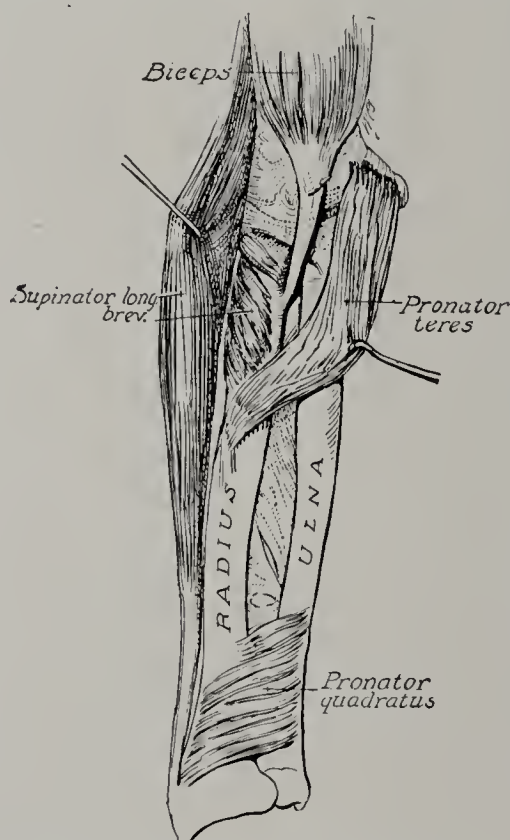


Fig. 5.—Diagram showing muscles of forearm exerting rotating and lateral displacing influences on fractures of forearm.

so far as longitudinal traction is concerned, but it is usually not overriding that gives us difficulty in fractures of this type. As has already been stated, the value of the forearm lies in the fact that it controls the motions of the hand, the most important of which are pronation and supination. The ulna is a fixed quantity; the radius rotates around the ulna, and when the hand is in full pronation lies immediately over it, crossing it at about the middle. In semipronation and full supination, the bones are at their maximum distance apart and the difference in space between the bones in supination and semipronation is negligible.

Fractures of the forearm can, therefore, be treated according to their location, either in semipronation or in full supination. There are a number of displacements which are common. The lower fragments may be displaced anteriorly or posteriorly or laterally, or



they may be displaced in a position of rotation. The ends of the fragments are sometimes caught in the muscles, but there is one displacement which never occurs, and that is wide separation of the ends of the fragments, as the interosseous membrane holds them in relatively close approximation. In considering fractures of the forearm, they must be classified according to their relation to the insertion of the pronator teres, which is about the middle of the forearm. Fractures below this point, as one can see from Figure 5, would occur between the pronator quadratus and the pronator teres. The muscular action here is for the lower fragments to be drawn together by the action of the pronator quadratus, which runs practically transversely between the radius and the ulna at their lower ends, assisted by the supinator longus, or brachioradialis, which is inserted at the styloid process and has a tendency to tip the radius toward the ulna. The supinators, which are the strongest group, consisting of the biceps and the supinator brevis, have a tendency to supinate the upper fragment, but are opposed in this by the pronator teres, which also has a tendency to pull the lower end of the upper fragment toward the ulna and flex it. The biceps also flexes the upper fragment. Therefore, we have a tendency in this fracture to a scissors deformity, with a pronation of the lower fragment and supination of the upper fragment.

The fracture above the pronator teres and below the supinator brevis and biceps is, in my opinion, impossible to treat successfully by the ordinary methods used in the treatment of fractures of the forearm. It will be seen by reference to Figures 6 and 7 that here both pronators are attached to the lower fragment. The pronator quadratus pulls the upper end of the lower fragments together, the supinator longus aiding in this action. The pronator teres rotates the lower fragment into pronation and also pulls it against the ulna, the upper fragment controlled by the biceps, which is a strong supinator, and the supinator brevis rotating the upper fragment into full supination and flexing it so that the upper fragment is practically always anterior to the lower fragment unless it is caught in the muscles as a result of violence, in which case it will be impossible to reduce without open operation.

There is another consideration of a fracture at or near this point, which is not commonly taken into consideration, and that is the entrance of the nutrient artery in the immediate vicinity, in both the radius and the ulna (Fig. 7). This, of course, leads to a considerable hemorrhage, which forms an organized clot and is

a first class bridgework on which bone deposit can be made, so that the fragments may eventually be joined by a solid bony callus. Even with separation of the fragments, this occurs not infrequently. It will be plainly seen that fracture at this point cannot be controlled by the ordinary methods of reducing and holding in reduction fractured bones, as there are too many cross pulls displacing the bones toward each other and rotating them to be overcome by any external mechanical means. As the loss of pronation and supination materially cripples the use of the hand, the danger in operation by competent surgery is far outbalanced by the danger of a permanent loss of use of the member.

In fractures at this point also, which are practically always produced by direct violence, there may be a complete rotation of both fragments, as in Figures 8 and 9, with overlapping. Once callus is formed with a deformity of the type shown, it is practically impossible ever to attain a completely useful hand and forearm, because the surgical procedure necessary to break up the synostosis and replace the fragments in their normal relation requires so much traumatism to the attachments of the muscles and the interosseous membrane, with danger of injuring the posterior and anterior interosseous nerves, that it is almost useless to attempt.

Fractures above the middle of the forearm practically always occur as a result of direct violence on the ulna, as when the arm is thrown up to ward off a blow. In this case the lower end of the upper fragment attached to the olecranon may be driven forward, or the upper end of the lower fragment may be driven forward. In either case, however, the force is carried through, and often an anterior displacement of the head of the radius occurs; the orbicular ligament is torn, and the head of the radius is displaced upward toward the head of the humerus (Fig. 10).

The fracture of the ulna is easily recognized, but the dislocation of the radius may be entirely overlooked, as it frequently is. The fracture in the ulna usually occurs where the head of this bone, which is narrowed down by the bicipital hollow, is gouged out by nature to allow free passage of the tendon of the biceps to its insertion in the radius. This is the narrowest and weakest part of the ulna in its upper end, and is very close to the elbow joint (Fig. 10). In this fracture there is not only the displacement of the fragments, but

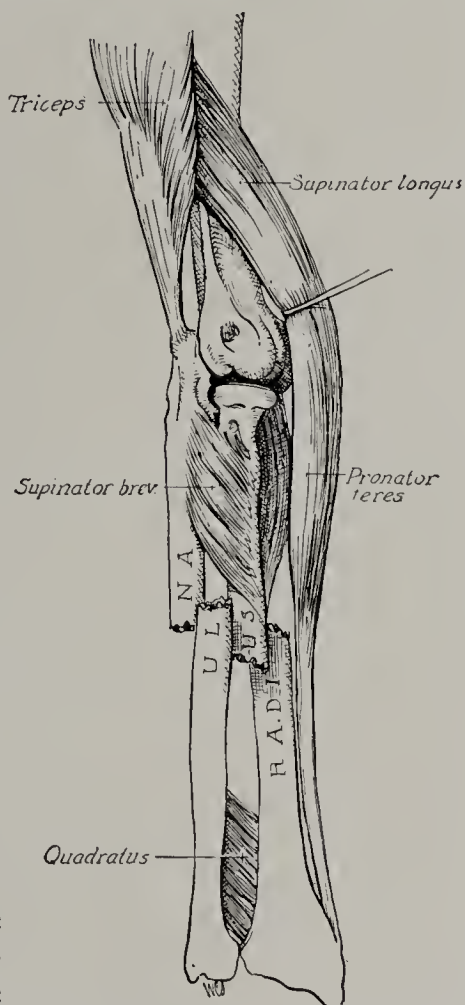


Fig. 6.—Fracture of both bones of forearm between pronator teres and supinator brevis, with both lateral displacement and rotation.

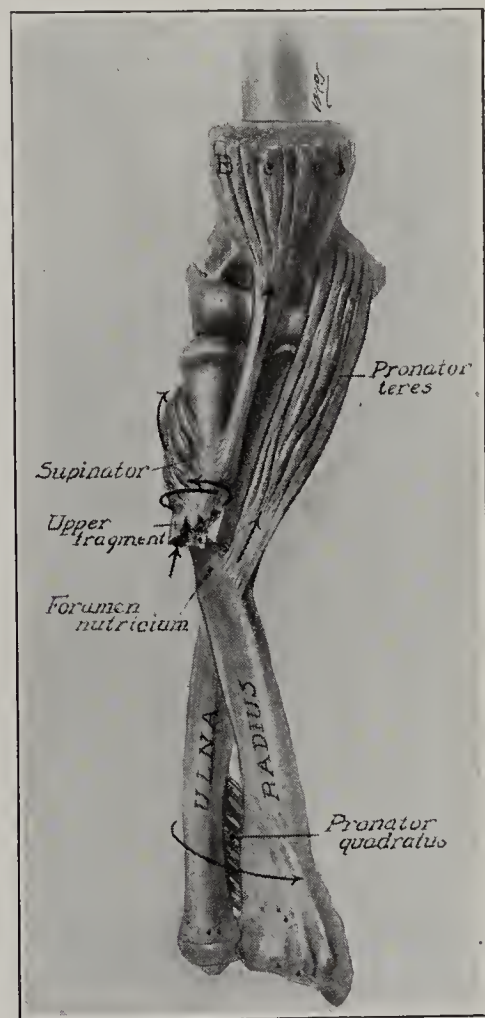


Fig. 7.—Fracture of radius between pronators and supinators, showing pull of various displacing muscles. Pronation of loose fragment with supination of upper fragment. This should always be set in full supination, because the upper fragment cannot be controlled.



also a loss of carrying angle on account of shortening of the ulna. Because of its hinged joint at the elbow, the ulna holds the forearm in its normal relation to the humerus and maintains the normal carrying angle. When the ulna is broken near the elbow and shortened, the radius does not maintain this angle (Fig. 11). The loss of the carrying angle is a serious handicap to the

working man, and if, in addition, it is not observed that the head of the radius has been carried into anterior displacement, he will lose both the carrying angle and the power of flexion of the elbow beyond a right angle.

#### TREATMENT

The treatment of these conditions, of course, can be divided into two classes, or possibly three: nonoperative ambulatory, nonoperative recumbent, and the operative treatment.

It has been the custom, because arms are not necessary in walking, to allow a patient to go about during the course of treatment of fractures of the forearms. It is because of our reluctance in putting a patient to bed with fracture of the forearm, as we do in fractures of the lower limbs, that I believe many deformities occur. Traction is an essential part of treatment of fractures of any kind. The muscles are in

a constant state of tone, which means that they are working twenty-four hours a day to reach a point at which there is normal tension put upon them. If there is no bony approximation of the ends of fragments, or at least not enough rigidity to keep these muscles under their normal stretch, they will continue to contract until a point of resistance is reached which counterbalances their tone. It is impossible to apply traction to fractures of the forearm with a patient out of bed. Also, the ambulatory patient carries his arm in a sling of one kind or another. This may be a sling around the wrist with two board splints anterior and posterior, properly applied to fractures of both bones. Under this treatment a tendency toward sagging of the bones at the point of fracture occurs, merely as a result of gravity.

Cases of perfectly transverse fractures of one bone of the forearm, it is true, can be treated as ambulatory; but in fractures of both bones of the forearm, I believe that the patient should always be confined to bed and be under constant observation of the attending surgeon. They should be confined to bed because this is the only method by which one can exert constant traction in a fixed direction, which is the axis of the bones, and maintain this traction for sufficient length of time to warrant the expectancy of a good result.

We have found that a suspension of the forearm, perpendicular position, with the elbow flexed at right angles, is the most satisfactory position. In this way

the biceps is relaxed, and its supinating and flexing effect on the upper fragment of the radius is eliminated. The weight of the upper arm acts as counterextension, and in this way traction is put on the muscles which run parallel to the long axis of the bones, to prevent the fragments from overlapping. There is no tendency toward sagging; the ligaments of the wrist are pulled tight to maintain the lower fragment, which has a tendency to put tension on the lower ends of the lower fragments and maintain them in their normal line. Pronation and supination can be controlled as illustrated in Figure 12 A.

If the weight of the upper arm is not sufficient to drag the fractured fragments into line, a piece of ordinary plumbers' lead pipe can be hammered flat and bent in the shape of the arm just above the elbow, slightly padded and bent around the arm, fitting closely to it and adding enough weight to meet the requirements of the situation. This is a comfortable means of applying weight to the arm, and at the same time allows the patient freedom of motion in bed. There are several requirements in applying extension to the forearm:

1. The extension must be applied in such a way that it will not pinch the radius and ulna together.
2. All of the extension must be exerted on one side of the fracture, and all counterextension on the other side. In other words, the adhesive plaster, if used, must not overlap the fracture.
3. The fingers and thumb must be free at all times so that the patient can move them voluntarily, that adhesions between the tendons and tendon sheaths may not take place.
4. Pronation and supination should be under the control of the surgeon and not under the control of the patient.
5. Extension should be applied in such a way that the patient can move the hand freely in bed without changing the direction of pull, within, of course, certain reasonable limits. This can be accomplished by

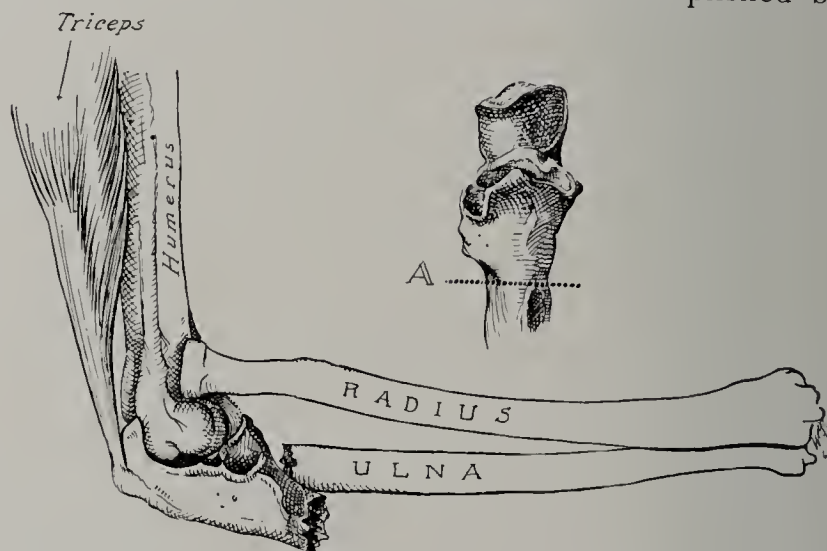


Fig. 10.—Fracture of upper end of ulna through bicipital notch, with anterior dislocation of head of radius.

the use of two laths cut in length of about 12 inches (30 cm.) Narrow strips of adhesive plaster are run obliquely from the ulnar side toward the base of the thumb, and vice versa, both on the flexor and on the extensor surfaces. The distal ends of these adhesive plaster straps are wrapped around the lath on the flexor surface and one on the extensor surface. The strips should exert their pull just distal to the wrist on the proximal ends of the metacarpals and around the carpals, and on the extreme

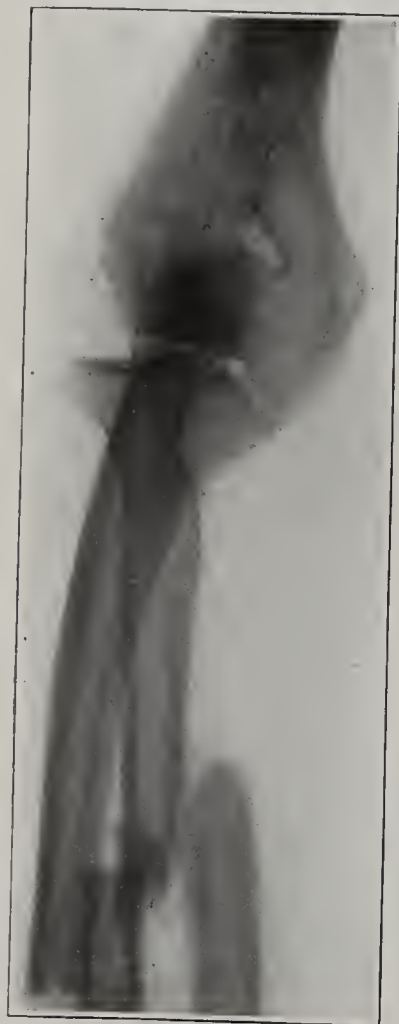


Fig. 8.—Fracture of radius and ulna at middle, with rotation and lateral displacement.



distal ends of the radius and ulna. They will run almost at an angle of 45 degrees from the lath, both toward the ulna and the radius and on the flexor and extensor surfaces. The laths are placed at right angles to the long axis of the arm and on a level with the metacarpophalangeal joints. This allows the fingers to project, and daily motion of the fingers should be per-

formed, which eliminates the possibility of adhesions and facilitates complete recovery. The arm is now suspended by the attachment of ropes to each end of each lath, and these ropes in turn are attached to weights and pulleys, the weight sufficient to balance exactly the weight of the arm, which pulls directly on the upper ends of the upper fragments. Semipronation or supination can be established by attaching to the laths a rope which will hold the hand in the position desired (Fig. 12 B). The bones are held anteroposteriorly by padded board splints, which are wider than the arm and which are held in place not by bandage, but broad strips of adhesive plaster at both ends (Fig. 12 C). No circular dressing should be used under any circumstances, since the whole tendency of the bones is to approximate at the fractured ends and consequently form a synostosis. Boards tend to force the muscles into the space between the bones, and this aids in holding them apart.

Fig. 11.—Carrying angle which is lost when ulna is fractured at upper end.

Circular casts are not applicable in any way to fractures of the forearm, and should not be used. If anteroposterior board splints are used and the patient is ambulatory, then provision should be made for supporting the fracture beneath the ulna so that there can be no downward ulnar angulation of both fragments from the pull of gravity at the point of fracture. These fractures should always be set under a fluoroscope. Extension should not be made by the hands of the surgeon; the patient should be held on the table with a sheet passed between the arm and the ribs on the affected side, and the patient firmly tied to the opposite side of the table on which he lies. A loop of strong muslin bandage should then be passed around the patient's wrist and over the operator's shoulder (Fig. 13). The operator now can throw the weight of his body firmly and strongly against the pull of the patient's muscles; and, with both hands free to manipulate under the fluoroscope, is in position to force the bones back into proper alignment and perform pronation and supination passively; while doing this, his motions are not jerky, his hands do not slip, and consequently he is able to restore the bones to their normal anatomic position in a much more skilful manner than he ordinarily would be. This is a method I have used for a number of years and found extremely satisfactory.

In operative treatment of fractures in this region, the site of election for incisions is, of course, lateral, either on the radial or the ulnar side, or both, as the case may

be. It has been my painful experience to reoperate after incisions have been made through the flexor or extensor surface. This, of course, leads to adhesions around the flexor or extensor tendons, and gives serious disability when no disability should have occurred. It would seem perfectly obvious that the exposed areas on the sides of the arm would be selected in any case, but this has not been true always, and the point is mentioned in passing merely because it has been brought to our attention forcibly on several occasions.

The lateral incision involves no destruction or interference with blood vessels, nerves or arteries, and does not interfere materially with the attachment of muscles.

Absorbable material should always be used. The day of steel plate and wire has passed. Ivory is our preference because of its nonirritating qualities and its strength, which firmly fixes the fragments in position and holds them there without fail until union has taken place, and then is finally absorbed without irritation to the soft parts. Beef bone screws and plates have been used and are satisfactory in many cases. Their strength is only about one-third that of ivory, and consequently firmer fixation is necessary for their external support. They are absorbed more quickly than ivory, but one always has the feeling that they may break. String or wire in the form of catgut, kangaroo tendon, silver or steel wire may hold in some cases, but it has been my experience that this form of mechanical union cannot be trusted, and if an open procedure is to be admitted, then that procedure should so fix the bones that there should be no fear in the heart of the operator that there will be any recurrence of deformity.

Finally, the fingers and hand should be moved regularly and systematically at the earliest possible

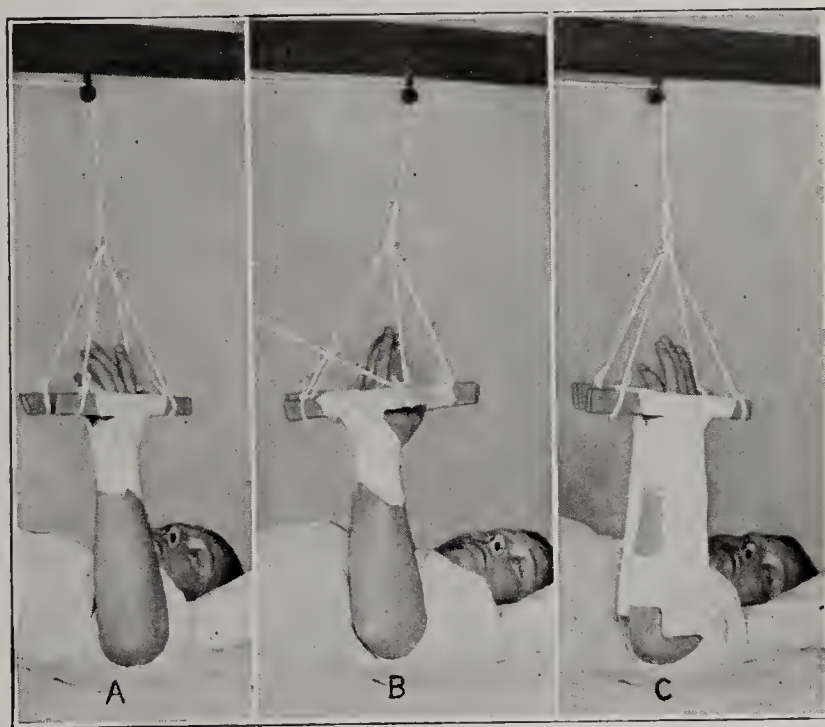


Fig. 12.—A, adhesive plaster applied distal to fracture in form of cuff and supported by laths at level of metacarpophalangeal joints for extension of arm and free use of fingers; B, rope attached to laths to hold arm in any degree of pronation or supination; C, anterior posterior board splints applied with board strips of adhesive plaster to aid in holding fragments.

opportunity. Fingers should never be included in fixation dressings, and daily massage and motions of the fingers should be instituted from the day of fracture until final recovery. The delicate tendon sheaths of the forearm and hand are easily injured and easily become adherent to the tendons. There will be a cer-



tain amount of cicatrization at the point of fracture at best, and this can be kept at the minimum by keeping the muscles in motion at regular intervals, which will also assist in keeping the circulation active and aid nature in repairing the damage that has been done.

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## ANATOMIC STUDY OF INJECTION OF SECOND AND THIRD DIVISIONS OF TRIGEMINAL NERVE\*

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Of recent years, with the great advances made in the use of local anesthesia, injections into the second and third divisions of the nervus trigeminus have become a common procedure. Used primarily almost only for the relief of trigeminal neuralgia, the present indications for blocking these nerves include many dental and surgical manipulations on the face and jaws in which the use of a general anesthetic is inadvisable. The descriptions in the literature which various writers have given of the technic of injecting these two divisions of the fifth nerve may seem precise, when read, but are disappointing in their practical application. That this must be so is readily appreciated after any experience in the dissecting room. The skull varies in different individuals, so much so that the establishment of a precise technic is difficult. It is for this reason that it cannot be too emphatically stated that no one should attempt these deep alcoholic injections without sufficient practice on the cadaver to impress him with the difficulties and dangers to be encountered and avoided.

Any attempt to reach a nerve trunk lying deep beneath the skin, and emerging from bony orifices in the skull, requires definite landmarks and angles as guides to the approach. In this clinic there has recently been developed an instrument called a zygometer which helps in great measure to determine accurately the point on the face at which the needle should be introduced to reach a particular nerve trunk. Using this instrument to standardize the points of insertion of the needle through the skin, we have worked out, in a series of cases in the dissecting room, the angles in the horizontal and vertical plane through which the needle must pass from this fixed surface point to enter the nerve trunk. In the case of the second division of the trigeminus, which is the more difficult of the two branches to inject, three points of approach were used, and the angles taken by the needle in penetrating the nerve were ascertained. For the third division, owing to the relative

ease of injecting it, only one fixed point was employed, and its corresponding angles were determined.

### TECHNIC

The calvarium was removed from every specimen, and the dura over the ganglion and foramina on both sides dissected away. This was found necessary so that the actual penetration of the nerve trunk by the needle point might be accurately ascertained. Penetration was admitted only when a methyl blue solution injected into the nerve passed up the sheath sufficiently far to be seen from within the skull. Two prominent landmarks were selected on the cheek, the external auditory meatus and the masseteric border of the malar bone. The zygometer was applied with the button in the external ear and the lower edge of the lowermost of the two parallel bars on a level with the masseteric edge of the malar bone. Thus, the lower arm of the zygometer follows roughly the inferior edge of the zygoma.

*Subzygomatic Injection of Maxillary Division from the 3.5 Centimeter Mark.*—The fixed point through



Fig. 1.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (110 degrees) in vertical plane with protractor.

which the first series of angles was determined was situated at the 3.5 centimeter mark, anterior to the ear, along the lower bar of the zygometer. This approach is subzygomatic and corresponds closely to the point of insertion used by Levy and Baudouin.<sup>1</sup> In our series of 162 injections in eighty-five cases studied it was found impossible to reach the nerve by any maneuver from this position in four cases, three times on the right side and once on the left, although in every case of failure on one side the corresponding nerve on the opposite side could be reached. In nineteen of the cases it was found

necessary to open the lower jaw to avoid impinging upon the coronoid process. In thirteen of these nineteen cases, this occurred on both sides. The average angles determined in the 162 injections on eighty-five cadavers was 98.5 degrees in the horizontal and 115.5 in the vertical plane. The angle at which the shaft of the needle entered the skin was measured from the malar bone posteriorly (before backward) for the horizontal plane, and from the vertex of the skull downward (above downward) roughly perpendicular to the zygoma for the vertical plane. A protractor was used in computing the angles. For the vertical angle the straight edge was so placed, flush along the surface of the vertical sliding bar of the zygometer, that the shaft of the needle passed through its midpoint, and the external or free tip of the needle registered the angle; while for the horizontal angle the surface of the lower arm of the zygometer was used as a base, and the midpoint of the straight edge of the protractor approximated to the needle shaft. With these two flat surfaces as bases from which to measure, the difficulties

\* From the Clinic of Dr. C. H. Frazier, University Hospital.

1. Levy and Baudouin: Presse méd., Feb. 17, 1906.



in accurate estimation of the angles arising from the curves in the contour of the face were in great measure overcome. In spite of these efforts to establish a uniform procedure it was found that in only fifty-three of the eighty-one cases in which both sides were measured did the angles in corresponding planes on right and left agree within a margin of error of 5 degrees. In the other twenty-eight cases, twenty-one varied within 10 degrees and the remaining seven showed a discrepancy of from 10 to 20 degrees. The error seemed as great in one plane as in the other. This variation is an evidence of how markedly the two sides of the skull may differ. The depth at which the nerve was reached varied between 5 and 5.5 cm. from the surface. We believe that a penetration greater than 5.75 cm. would be attended with considerable risk of damaging important structures through the passage of the needle point into the posterior part of the orbit or nose.

To inject the supramaxillary nerve by this method, the needle is inserted at the 3.5 cm. mark on the lower border of the zygometer. The point of the needle should be directed inward at an angle of 98.5 degrees

in the horizontal plane and 115 degrees in the vertical plane, as described. The needle passes below the zygoma. At this point it may at once be obstructed by the coronoid process of the mandible. If so, the jaw should be opened, which will allow the needle to pass. The vertical angle should now be increased a trifle, thus deflecting the needle point slightly above the exact point at which the nerve is to be sought. At about 4.5 cm. depth a bony process will be met which is the pterygoid plate. Next the vertical angle should be decreased slightly by lowering the needle point. Then the point is slid

forward over the upper anterior edge of the pterygoid plate into the sphenomaxillary fissure, where, at a depth of from 5 to 5.5 cm., the nerve is reached. The sensation of sliding forward into a cleft over the edge of the pterygoid plate is very striking and makes the experienced operator feel sure of a successful injection. In the four cases in our series in which it was impossible to transfix the nerve by this route, the interference seemed to be due to an anterior development of the pterygoid plate, which prevented the needle point from passing anteriorly to it with any chance of hitting the nerve. The dangers in the use of this method are twofold: If the needle point is held too high and inserted more than 5.5 cm., it is possible to enter the orbit through the posterior part of the sphenomaxillary fissure; if held too low and advanced too far, the needle tip will pierce the thin, bony walls of the nasal cavity or pass through the sphenopalatine foramen into the posterior nares.

*Subzygomatic Injection of the Maxillary Division from 5-Centimeter Mark.*—The second approach to the superior maxillary division of the trigeminus is

through a point 5 cm. anterior to the external auditory meatus. The zygometer is in the same position as in the previous method, and the angles the needle shaft forms with the skin are measured in the same fashion from above downward and from before backward. In our series of 120 injections on sixty cadavers, the average for the horizontal angle was 87 degrees and for the vertical angle, 138 degrees. There was no variation between the angles at which the nerve was reached on the right and left side of more than 10 degrees. Fifty-five of the sixty cases showed a variation between the two sides of less than 5 degrees. In every case it was possible to reach the nerve. The point of entrance of the needle is so far forward that the instrument must be passed below the malar, which accounts for the larger vertical angle. In general, this is the route used in the intra-oral method advocated by Schlosser<sup>2</sup> and Ostwald,<sup>3</sup> this method being an extra-oral modification of their technic.

In the dissecting room it was our practice to stand behind the subject's head during this procedure. The little finger of the hand opposite the side being injected

is inserted in the mouth, pressing up into the angle bounded posteriorly by the coronoid process, laterally by the malar and internally by the superior maxillary bone. The anterior edge of the vertical movable bar of the zygometer is placed on the 5 cm. mark on the upper and lower arms. If the shaft of the needle be held roughly in line with this anterior edge from behind downward and forward, a horizontal angle of about 95 degrees with the skin surface is produced. The wide vertical angle which the needle must take to pass under the masseteric border of the malar bone and at the



Fig. 2.—Injecting third division of fifth nerve from 2 centimeter mark: method of measuring angle (90 degrees) with protractor in the horizontal plane.

same time avoid penetrating the buccal mucous membrane closely approximates the 135 to 140 degrees necessary to reach the nerve. As the needle is inserted, the finger in the mouth directs the point upward along the lateral wall of the maxillary antrum into the sphenomaxillary fissure and the foramen rotundum. The nerve is reached just after it leaves the foramen. At first the vertical angle should be increased to about 140 or 145 degrees and the needle point directed high so that it first encounters the upper anterior edge of the pterygoid plate. The vertical angle is then decreased to 135 or 140 degrees and the needle point directed slightly forward and downward until it slips anterior to the upper curved edge of the plate into the sphenomaxillary fissure. Here, at a depth of 5.5 cm., the nerve is encountered, lying in a mass of fat and muscle. Once the pterygoid plate has been passed, great care must be taken not to seek too deeply after the nerve. The needle should never penetrate to a depth of more than 6 cm. from the skin surface, for

2. Schlosser: München. med. Wchnschr., April 30, 1897.  
3. Ostwald: Presse méd., Dec. 16, 1905.



the needle point may easily be forced upward through the sphenoidal fissure and pierce the optic nerve or the internal carotid artery. While the angles of approach are remarkably uniform, and in the dissecting room the nerve was more certainly and quickly reached by this route than by any other, we cannot recommend its use unreservedly. Once past the pterygoid plate, no bony landmarks may be felt. Reckless probing with the needle point at too great a depth will almost certainly result in damage to vital structures. It is this procedure more than any other which requires practice on the cadaver to insure its safe performance.

*Suprazygomatic Injection of Maxillary Division.*—The third avenue of approach that we studied is suprazygomatic. With the zygometer in the standard position, the superior border of the zygoma and the temporal border of the malar bone are outlined by palpation. The apex of the angle formed by the junction of these two bones is approximately 3.5 cm. anteriorly on the base line of the zygometer. Using this point for the insertion of our needle in a series of sixty injections in thirty-two cases, the average angle in the horizontal plane is 100 degrees, and in the vertical plane, 87. In two cases on the right and the left side in the same case it was found impossible to reach the nerve trunk by this approach. In twenty-three of the thirty cases the right and the left angles agreed within 5 degrees. The other seven cases right and left conformed within 10 degrees.

The needle is inserted above the zygoma at the 3.5 cm. mark almost perpendicularly in the vertical, and slightly forward in the horizontal plane. The point impinges first on the posterior wall of the maxillary antrum and is carried along this wall and slightly downward to pass under the upper anterior curved edge of the pterygoid plate. By holding close to these two bony landmarks, the nerve is reached at about 4.5 cm. from the surface. If the needle be inserted too far, the lateral wall of the nose may be pierced, although this is not a serious mishap. The needle is at all times well below the level of the optic nerve, and anterior to the larger blood vessels. This, therefore, is a safe procedure, and the angles are fairly constant. But from the number of trials required before the nerve could be reached in many cases, and with total failure in two out of thirty-two, we fear that clinically this method may not be as satisfactory as was hoped.

*Injection of the Mandibular Division.*—For injection of the mandibular division of the trigeminal nerve, only one approach was considered. Injection of this branch is relatively so simple and satisfactory that no other method is needed. With the zygometer in the standard position, the 2 centimeter mark on the lower bar was selected. This corresponds approximately to the point of election described by Levy and Baudouin. Through this point, 162 injections were made on eighty-one cadavers. The nerve was easily reached in every case. The horizontal angle averaged 91 degrees, and the vertical angle 108 degrees. In fifty-two of the eighty-one cases the angles for injection on the left and right corresponded within 5 degrees, in twenty-six within 10 degrees; in three cases, the variation was more than 10 degrees. In the 3.5 cm. approach to the second division, the angles measured in fifty-three of the eighty-one cases were equal within 5 degrees right and left. In forty of these fifty-three cases in which the second division measurements were in accord on either side, the third division measurements were also closely similar. These figures only go to prove the

variability of structures on the opposite sides of the same skull.

The needle is inserted below the zygoma opposite the 2 centimeter mark on the lower bar. The direction is perpendicular to the skin in the horizontal plane, and a little upward in the vertical plane. Once the zygoma is passed, the needle point should be deflected slightly upward to strike the floor of the middle fossa. This bone is followed backward, bearing at the same time somewhat forward to avoid the middle meningeal artery, which passes through the foramen spinosum just posterior to the foramen ovale until, at a depth of 4.5 cm., the nerve is reached. By thus keeping the needle point high, it was possible in every case studied to inject the entire ganglion through the foramen ovale if such a procedure should be deemed necessary. If it does not seem desirable to affect the whole ganglion but only the third division, the needle point should be held a trifle lower. The nerve will then be pierced somewhat beyond its exit through the foramen. If the direction of the needle is accurate, the nerve will always be reached within 5 cm. of the surface. The needle point should never be allowed to penetrate to a greater distance than 5 cm.

#### SUMMARY

1. In 162 subzygomatic injections of the supramaxillary division of the fifth nerve from the 3.5 centimeter mark:
  - (a) The average angle was 98.5 degrees in the horizontal and 115 degrees in the vertical plane.
  - (b) In 65 per cent. of injections, the angles for the right and left sides corresponded within a margin of error of 5 degrees.
  - (c) In 25 per cent. of the cases there was a variation of 10 degrees in the corresponding angles on the two sides.
  - (d) In 10 per cent. of the cases the variation was between 10 and 20 degrees in the corresponding angles on the right and left.
  - (e) The percentage of failures to reach the nerve was 4.7.
2. In 128 subzygomatic injections from the 5 centimeter mark:
  - (a) The average horizontal angle was 87 degrees and the vertical angle, 138 degrees.
  - (b) In 91 per cent. of the subjects, the corresponding angles on the right and left were equal within a margin of error of 5 degrees.
  - (c) In the remaining 9 per cent., the variation was 10 degrees or less.
  - (d) There were no failures to reach the nerve by this route.
3. In sixty-two suprazygomatic injections from the 3.5 centimeter mark on thirty-two subjects:
  - (a) The average vertical angle was 87 degrees, and the horizontal angle, 100 degrees.
  - (b) In 72 per cent. of the cases, the corresponding angles on the right and the left agreed within 5 degrees.
  - (c) In 22 per cent. of the cases the difference in the corresponding angles, right and left, was 10 degrees.
  - (d) In 6 per cent. of the cases it was impossible to reach the nerve by this route.
4. It was always possible to reach the nerve in every case, right and left, by one of these three methods. In no case were all successful.



5. In 162 subzygomatic injections of the mandibular division of the trigeminus from the 2 centimeter mark:
- (a) The average vertical angle was 108 degrees, and the horizontal angle, 91 degrees.
  - (b) In 62.2 per cent. the corresponding angles on the right and the left agreed within 5 degrees.
  - (c) In 32.1 per cent. the angles varied within 10 degrees.
  - (d) In 3.7 per cent. the angles varied more than 10 degrees.
  - (e) In 75.4 per cent. of the cases in which the corresponding angles of injection by this route agreed within 5 degrees, the angles of injection for the supramaxillary division from the 3.5 centimeter mark by the subzygomatic route also varied less than 5 degrees.
  - (f) There were no failures to reach the mandibular division by this route.

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## CARCINOMA IN LATERAL ABERRANT THYROID GLAND

### REPORT OF CASE

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AND

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Aberrant thyroids are probably not as rare as is supposed. The type most commonly reported is situated in the midline, as the result of remnants of

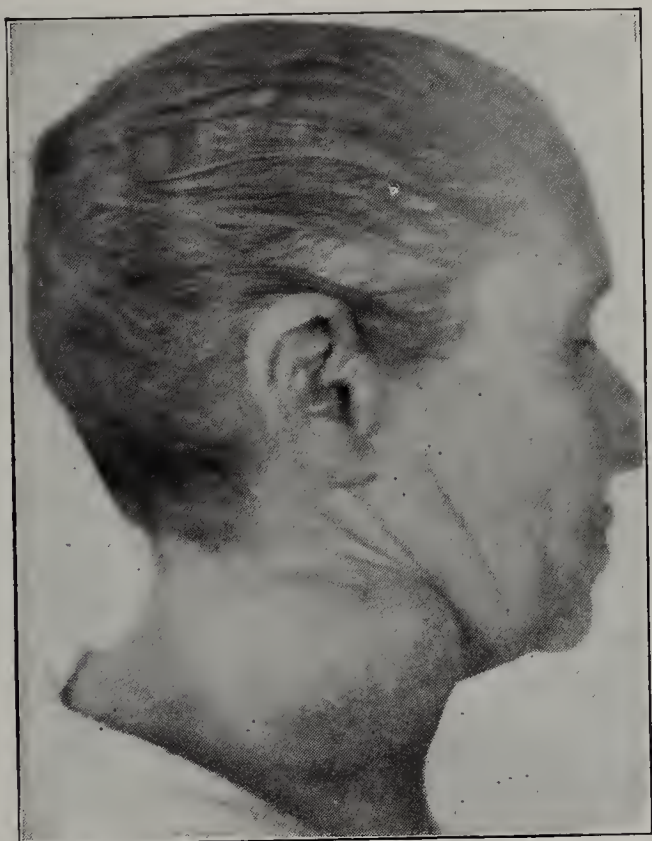


Fig. 1.—Lateral view of tumor.

thyroid tissue left in the course of the thyroglossal duct. Only a few lateral aberrant thyroids have been reported. In 1906, Schrager<sup>1</sup> compiled fourteen cases from the literature and added two cases of his own.

Wohl,<sup>2</sup> in 1917, reported a case of lateral aberrant thyroid in a patient of his, and compiled four cases from the literature. A few other cases have been reported. The small number of cases reported might lead to the supposition that lateral aberrant thyroids were extremely rare. We believe that this may be accounted

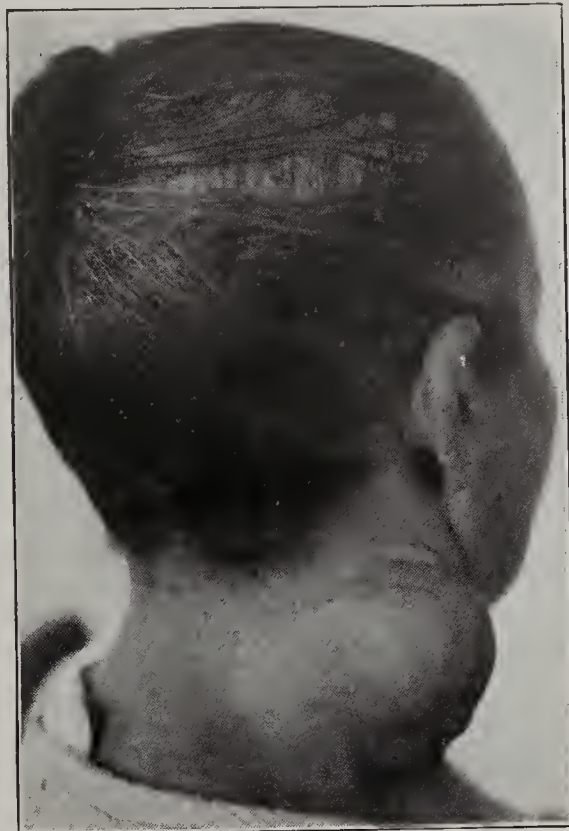


Fig. 2.—Posterolateral view of tumor.

for to a large extent by the great difficulty in diagnosing the condition. Unless some intercurrent pathologic condition presents itself, the lateral aberrant thyroid will pass entirely unrecognized, or be mistaken for a slightly enlarged cervical lymph gland. Even after it has undergone a pathologic change, the true nature cannot be ascertained with any degree of certainty before excision and section of the tissue. In none of the cases reported was a preoperative diagnosis of aberrant thyroid made. Most of the cases were of a cystic nature, and were usually mistaken for branchial cysts. The macroscopic appearance of the tissue at operation is not always characteristic of thyroid tissue, and it is not until the tissue has been subjected to careful microscopic study that a definite diagnosis can be made. Therefore we agree with Schrager that the majority of cases of lateral aberrant thyroids go unrecognized and are not recorded.

Primary malignancy of lateral aberrant thyroid tissue does seem to be extremely rare. Malignant tumors, these days, are almost invariably sent to the laboratory for section, and, were the condition more common, undoubtedly a far greater number would have been reported in spite of the fact that the results of operation are apt to be poor. Of the sixteen cases compiled by Schrager, only two were malignant, both cases first reported by Hinterstoisser. Hinterstoisser<sup>3</sup> reported a third case (second in his series) which he did not call malignant. He quotes Pollard as having recorded a malignancy of a lateral accessory thyroid, but Pollard<sup>4</sup> declared that he did not consider his case malignant.

2. Wohl, M. G.: Carcinoma of Lateral Aberrant Thyroid, *Interstate M. J.* 24: 1044 (Nov.) 1917.

3. Hinterstoisser: *Wien. klin. Wchnschr.* 1: 651, 1888.

4. Pollard, B.: *Tr. Path. Soc. London* 37: 507, 1885-1886; *abstr.*, *Brit. M. J.* 1: 446, 1886.

1. Schrager, V. L.: *Lateral Aberrant Thyroids, Surg., Gynec. & Obst.* 3: 465, 1906.



Gutmann,<sup>5</sup> according to Hinterstoisser, reported a case of carcinoma of an accessory thyroid. We have not been able to obtain a copy of this thesis.

Pool<sup>6</sup> reported a case in 1910, and Wohl one in 1917. We report a case of our own, making, as far as we have

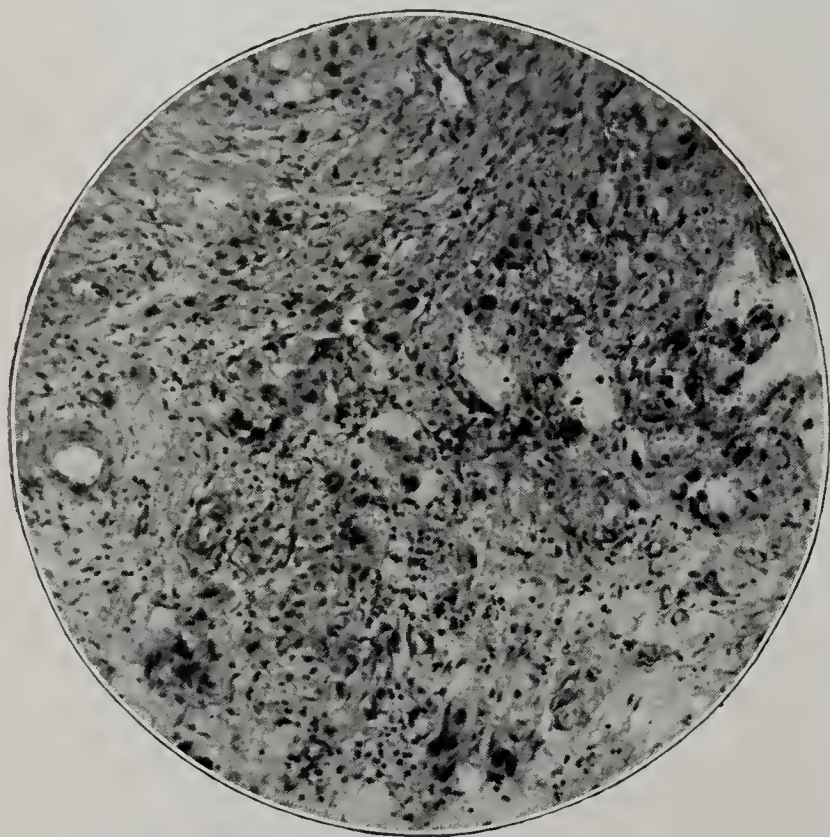


Fig. 3.—Section of tumor: indistinct alveolar arrangement; irregularity of cells, invasion of stroma; slightly reduced from a photomicrograph magnified 110 diameters.

been able to discover, the sixth case. This patient was admitted to our service at the Michael Reese Hospital with the safe diagnosis of "tumor of the neck."

*History.*—B. K., a woman, aged 55, housewife, came to the hospital because of a lump in her neck. About one and one-half years before, the patient first noticed a small, hard nodule in the left side of her neck about one-third the distance from the mastoid process to the middle of the clavicle. The tumor gradually increased in size until it was as large as an English walnut. At no time was there any pain or tenderness. For almost a year the tumor retained about the same dimensions, decreasing and increasing, however, in size. The fluctuations were slight, and the time interval was irregular. Sometimes the period of diminution was long and the period of increase short, and sometimes the opposite. So far as the patient knew, the fluctuations were not related to any incidents or habits of life. Within the last two months the tumor had grown rapidly. The patient volunteered the information that this growth seemed to be from the periphery of the mass, as if it were growing into the adjacent normal tissues of the neck. This growth was accompanied by a "drawing sensation," but no definite pain. There had been no systemic symptoms; the patient ate well, slept well, lost no weight, and continued her numerous duties as housewife and mother of three children, up to the time of admission to the hospital. There was no dysphagia, no dyspnea, no speech disturbance; in short, there were no subjective symptoms aside from the slight "drawing" sensation already mentioned.

She had always been well and, except at the time of an injury to her right eye many years before, had never consulted a physician. There was no history of trauma to the neck. She had had six children, three of whom died in infancy of unknown cause, and the other three of whom were now living and well. She reached the menopause ten years before.

One sister died of cancer of the stomach; otherwise the family history had no bearing on the case.

*Physical Examination.*—The patient was fairly well developed, and lay quietly in bed in no apparent pain or discomfort. All her teeth were missing except three molars, which were in bad condition. Both tonsils were slightly enlarged. Otherwise the physical examination revealed no deviation from the normal for a woman of her age, except that on the left side of the neck there was a tumor about 9 cm. ( $3\frac{1}{2}$  inches) long, 5 cm. (2 inches) wide and 30 mm. ( $1\frac{3}{16}$  inches) high, situated in the median line of the lateral aspect of the neck (Figs. 1 and 2). The upper margin was about 4 cm. ( $1\frac{1}{2}$  inches) below the tragus of the left ear; the tumor extended downward and forward. The tumor was round, very hard and slightly nodular. It was not adherent to the skin, but definitely fixed to the underlying tissues. The outline of the tumor was very irregular, and seemed to be invading the adjacent structures by finger-like projections. The lobes and isthmus of the thyroid appeared to be normal. There were no other tumors palpable in the neck or supraclavicular spaces. There was no cervical or supraclavicular adenopathy. The Wassermann reaction was negative. The blood count revealed a hemoglobin of 75 per cent. (Tallqvist's scale); red blood corpuscles, 4,400,000, and white blood corpuscles, 7,800, of which there were 68 per cent. neutrophilic polymorphonuclears, 22 per cent. small mononuclears, 8 per cent. large mononuclears and 2 per cent. transitionals. The blood pressure was 112 mm. of mercury systolic and 75 diastolic, equal on the two sides. The urine was normal except for a slight trace of albumin. Pulse, temperature and respiration were normal.

A diagnosis of a possible malignancy was made, the nature or origin of which could not be determined. Operation was advised.

*Operation and Result.*—The tumor was circumscribed by a wide incision through the skin and superficial fascia. The sternocleidomastoid muscle was cut. The superficial part of the tumor was freed by careful dissection; the base seemed to extend deeply into the structures of the neck. A suggestion of a line of cleavage was found but could not be followed, the tumor having broken through in many places. The inter-

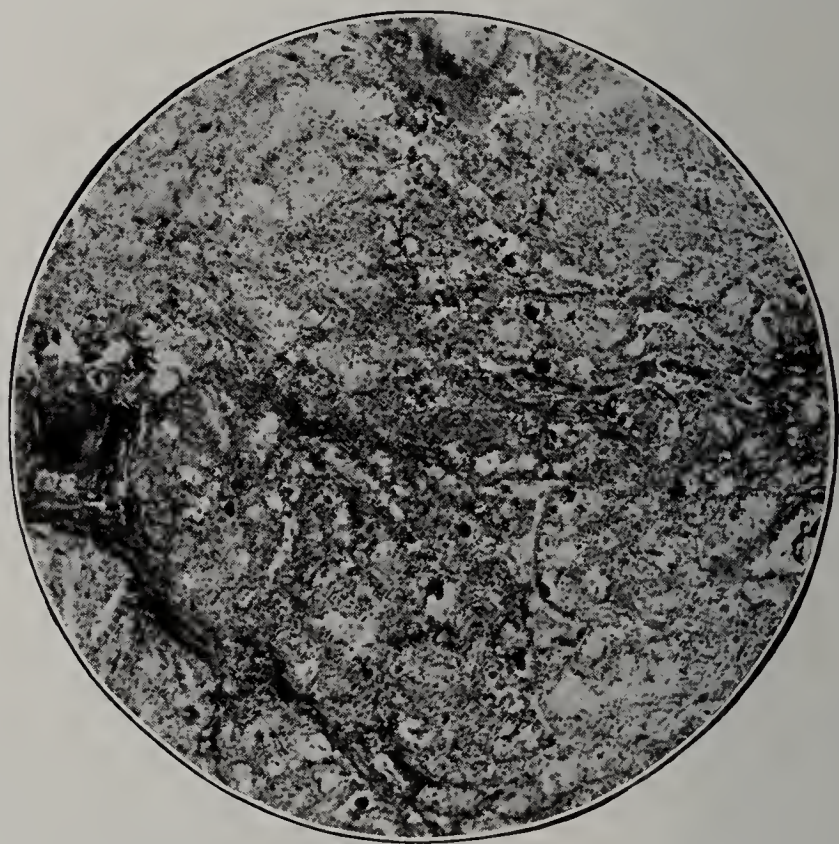


Fig. 4.—Atypical thyroid alveolar structure; some follicles containing colloid; slightly reduced from a photomicrograph magnified 60 diameters.

nal jugular vein was exposed, the tumor being very intimately attached to it. As a matter of precaution, rubber protected clips were placed on the vein above and below the tumor, and the tumor was carefully dissected away by means of sharp dissection, which was finally accomplished without injury to the vessel wall. The tumor, which extended down to the carotid sheath but which did

5. Gutmann, A.: Inaug. Diss., Berlin, 1883, quoted by Hinterstoisser.

6. Pool: Carcinoma of Accessory Thyroid, Ann. Surg. 52: 711. 1910.



not seem to involve the muscles, was then dissected free by sharp and blunt dissection. Several smaller projections of the tumor were removed separately. Several small, hard glands in the neighboring tissue and one in the position of the carotid gland were excised. There was no connection with the lateral lobe of the thyroid. The remaining structures were soft, and apparently the entire tumor had been removed. An interesting fact noted was that the jugular vein remained contracted even after the clamps had been removed and its patency reestablished. Its diameter was but one-half normal

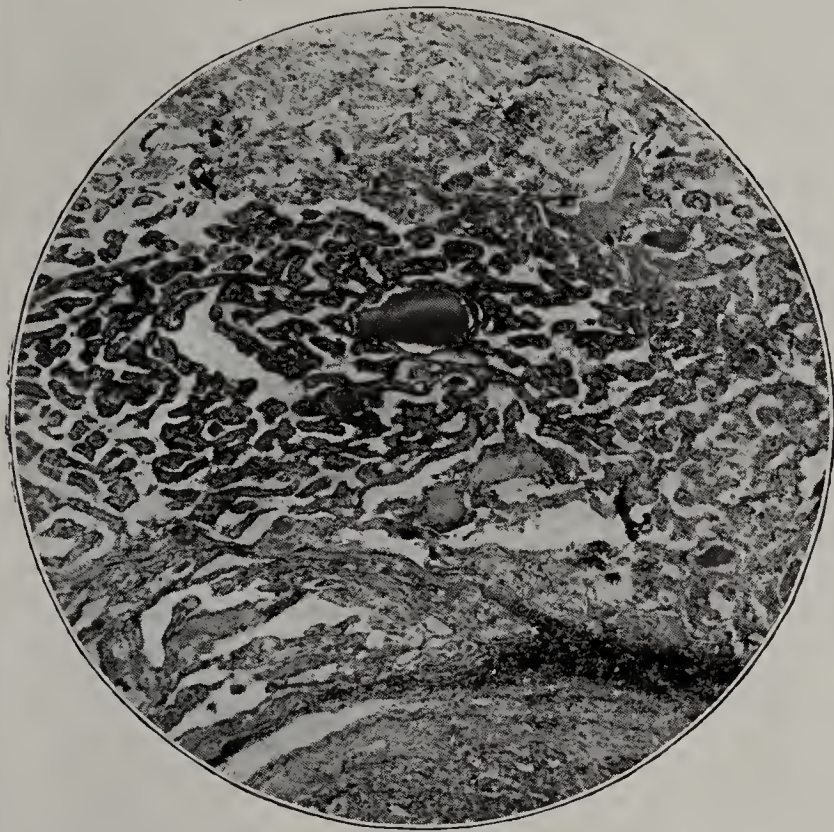


Fig. 5.—More typical thyroid tissues with scattered colloid-containing follicles; slightly reduced from a photomicrograph magnified 60 diameters.

when the tissues were closed over it, at least fifteen minutes after the clamps had been opened. The cut ends of the sternocleidomastoid muscle were reunited, and the wound was closed without drainage.

The patient made an uneventful recovery, and left the hospital on the fourteenth day, to return for intensive roentgen-ray treatment.

*Pathologic Report* (by Dr. O. T. Schultz).—A hard, firm mass, 6 by 4.5 by 1.5 cm. ( $2\frac{3}{8}$  by  $1\frac{3}{4}$  by  $\frac{5}{8}$  inch) had a lobulated appearance, areas of pale tissue being separated by bands of more congested tissue. There were also several separate masses which had the appearance of thyroid tissue in which were pale, solid areas resembling the large masses. Some of these had no pale tissue but contained calcified areas and colloid.

Microscopically, the pale tissue which made up the main mass was composed of closely placed alveoli of thyroid type. These varied in size and shape; some were solid and had no lumen, while others had a small lumen which contained no colloid. In the solid alveoli the epithelial cells were large and irregularly polyhedral; in the other alveoli the lumen was surrounded by a single layer of epithelium, which varied in height from low to high cuboidal. In the solid areas there was a great nuclear variation. There were few mitoses. The tissue was traversed by broad bands of dense fibrous tissue, which was invaded by small solid tumor alveoli. One of the masses contained compressed colloid-containing follicles at one side and tumor tissue at the other. Another small nodule was composed only of colloid-containing thyroid tissue.

The diagnosis was carcinoma of thyroid.

#### COMMENT

The diagnosis of carcinoma of the thyroid made after investigation of the excised specimen, coupled with the fact that the mass was in no way connected with the thyroid, makes one believe that the carcinoma

must have originated from aberrant thyroid tissue in a lateral position of the neck.

The lessons taught us by this case and out of our reading instigated thereby are:

Lateral aberrant thyroids are more common than supposed.

Because of this fact, unilateral enlargements of the neck, and especially cystic enlargements, should make the surgeon consider, among other possibilities, disease of lateral aberrant thyroid tissue.

Malignancy of lateral aberrant thyroid tissue is extremely rare.

The jugular vein is very likely to be involved and injured during the operation, and should be clamped as a preliminary procedure.

We have of late been interested in the perivascular sympathetics, and therefore noted with interest that the vein remained contracted after it had been dissected free from the tumor and after the clamps had been removed.

For a detailed discussion of the cases up to 1906, as well as a discussion of the embryology, the reader is referred to the papers of Madelung,<sup>7</sup> Hinterstoisser,<sup>3</sup> and Schrager;<sup>1</sup> the last, in English, covers the subject up to 1906.

## BLOOD PRESSURE FINDINGS IN CIRCULATORY DISORDERS OF THE EXTREMITIES

BERTRAM M. BERNHEIM, M.D.

BALTIMORE

In the effort to arrive at a plausible explanation of certain circulatory disturbances of the lower extremities whose origin and mode of production have been obscure, the blood pressure findings have not only been interesting, but may turn out to be of real significance. The gangrenes and the near gangrenes one sees nowadays are customarily differentiated into various groups—Raynaud's disease, arteriosclerosis, diabetes (with arteriosclerosis), senility, thrombo-angiitis, etc.—according to such clinical manifestations and etiologic features as they exhibit. This is, of course, desirable, as it is the scientific method of approach and study. But, in the last analysis, all of these conditions exhibit many features in common, the treatment for the most part is as unsatisfactory and as unsystematized in the one as it is in the other, and the end-result is usually the same. As far as the patient is concerned, it matters little what group he falls in. I merely make this point because it is my feeling that our studies on circulatory disorders of the extremities thus far have been directed too much along unproductive lines and that we have overemphasized the anatomic side of the affair, having little regard to the patient's welfare, and being totally oblivious to certain factors that might well be given deep consideration.

In all circulatory disorders of the extremities, a narrowing of blood vessel lumens comes to pass, gradually in most instances, suddenly in a few. It may be due to some spastic condition of the vessels that is at first of an intermittent character but later becomes continuous, or, as is more usually the case, there is a gradual deposition of material from one

7. Madelung: Arch. of klin. Chir. 24: 71.



cause or another in the wall of the vessel under the intima or within the lumen itself which eventually totally occludes the vessel. In any case, an obstruction of varying degree is offered the flow of blood. This being the case, one of two things must occur: either the amount of blood that passes the obstruction becomes less or, if the volume is to remain as before, the pressure back of the stream must be raised.

Blood pressure readings taken on patients suffering from a variety of circulatory disorders of the extremities indicate that, far from exhibiting a rise, many of them reveal a low pressure, extraordinarily low in certain instances, while most of them present a normal pressure. Once in a while a slight elevation is encountered. Almost never does one see a real hypertension. The surprising part of this is that it is just the opposite of what one might have expected in view of the fact that a compensatory elevation of blood pressure is frequently seen in generalized arteriosclerosis and in certain forms of heart and kidney disease.

The relation of these findings to ischemic conditions of the legs may be interpreted in two entirely different and distinct ways. It may be argued, on the one side, that in circulatory derangements exhibiting obstruction to the blood flowing toward the lower leg and foot the blood pressure does not rise, the vis a tergo fails to increase, and so no opposition is offered to the further encroachment of the disease process. The result—unless successful treatment is given—is gangrene. On the other hand, it is just as logical to suppose that in the vast majority of disease processes affecting the blood vessels of the extremities there does occur a compensatory rise in blood pressure and that, as a consequence, the threatened and real gangrenes do not come to pass. Only where this rise fails to materialize do we see the gangrenes. The latter theory might well account for our failure to find these disasters among the many hypertension victims. In my experience it is most unusual to see a gangrene or even a threatened gangrene in one of these patients.<sup>1</sup>

I feel, then, that in the blood pressure we may possibly have the explanation of certain obscure features connected with the production of the threatened and real gangrenes. Just why there should fail to be a rise in pressure in these cases is a mystery. It may not be logical to feel that it should come to pass, especially in a disorder that is perhaps affecting but one limb. Nature does so much, though, that we are accustomed to expect the obvious thing from her at all times.

That a gradually narrowing blood vessel lumen—whatever the cause may be—is aided and abetted on its course toward total occlusion by a thinned out, slowed blood stream which has little or no force back of it, no one can deny. Little roughened plaques, tiny cracks in a stiffened intima, pin-point areas of disease, it does not require much of an imagination to see them picking out of the slowly passing stream first, perhaps, the platelets and then such other cell elements as may be needed to form the finally occluding thrombus. Nor is it difficult to understand why so many of these threatened gangrene patients have such a poor collateral circulation, if one will only realize that blind passages, collapsed tubes, can be opened up only by a blood flow of real force—such as they do not seem to have. It follows, then, that the blood pressure

element in all cases of threatened and real gangrene is apparently of more importance than has heretofore been recognized.

#### ILLUSTRATIVE CASES

CASE 1.—Mr. B., aged 51, German, suffered from threatened gangrene of both feet. No arterial pulsation could be felt in either leg below the femorals. He had constant pain in both feet, and was unable to sleep. The diagnosis was thrombo-angiitis obliterans. The average blood pressure was: systolic, 110; diastolic, 60.

CASE 2.—Mr. G., aged 49, Russian, was a patient at the Hopkins, St. Agnes and Hebrew hospitals. He suffered from gangrene of the left leg due to thrombo-angiitis obliterans. The leg was amputated. The average blood pressure was: systolic, 132; diastolic, 80.

CASE 3.—Mr. S., aged 35, Russian, a patient at the Hebrew Hospital, suffered from intermittent claudication, pain in the left leg and sleeplessness. There was no pulsation below the femoral artery. The diagnosis was thrombo-angiitis obliterans. The average blood pressure was: systolic, 105; diastolic, 60.

CASE 4.—M. J., aged 42, American, a patient at Church Home and Infirmary, suffered from pain in the left leg and intermittent claudication. A faint pulsation could be felt in the dorsalis pedis artery, but none in the posterior tibial or popliteal. The foot was cold, and blanched on occasion. The diagnosis was Raynaud's disease. The average blood pressure was: systolic, 140; diastolic, 90.

CASE 5.—Mr. X., aged 37, American, seen in consultation with Dr. Arthur Shipley at University Hospital, suffered with pain and threatened gangrene of the left lower leg. There was no pulsation below the femoral artery. The condition was suggestive of thrombo-angiitis obliterans, but might have been due to obscure trauma occurring seven years before. The average blood pressure was: systolic, 110; diastolic, 70.

CASE 6.—Mr. S., aged 55, Russian, had arteriosclerotic gangrene associated with diabetes. The right leg was amputated. The average blood pressure was: systolic, 124; diastolic, 86.

CASE 7.—Mr. S., aged 54, German, had arteriosclerotic gangrene of the right leg associated with diabetes. The leg was amputated. The average blood pressure was: systolic, 160; diastolic, 90.

CASE 8.—Mr. M., aged 55, underwent amputation for thrombo-angiitis obliterans. The average blood pressure was: systolic, 135; diastolic, 90.

#### COMMENT

These eight cases were taken at random. The average age is 47 + years, the average blood pressure is systolic, 127, diastolic, 78 +. The findings are suggestive. It may be that our present methods of treatment, such as they are, will have to be revised, and a more rational therapy, one that conforms to the actual state of affairs existing, instituted. A later paper will deal with this subject.

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**Education and Public Health.**—Sensible education in the principles of healthy living should be universal, but neither the state nor the nation should embark upon programs of socialization of medicine, socialization of nursing or the paternalistic or maternalistic care of health of individuals without first looking ahead to see where such policies lead, socially, financially and politically. The police power of the state should be used severely to prevent crimes against the public health; the advisory powers of health departments should be freely used, but the treasury of the state should not be drawn on to pay for personal benefits or class benefits even in the name of health. Public health and private health are not the same, and governments may do for the one what they ought not to do for the other. We Americans cannot boast of the success of our governments, especially the governments of our cities. We cannot boast of our governmental methods of public health administration—and unfortunately our local governments are not becoming more efficient as they become larger.—Prof. George C. Whipple, the Public Health Work of Professor Sedgwick, *Science*, Feb. 25, 1921.

1. Embolic gangrene is, of course, excluded.



## Clinical Notes, Suggestions, and New Instruments

### A PEDUNCULATED LIPOMA OF THE ESOPHAGUS\*

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The case herewith submitted is unusual with regard to both the type of lesion and the large size of the tumor.

#### REPORT OF CASE

Mr. S. V. J., aged 62, came to the Mayo Clinic, Nov. 28, 1921. Six years before, on coughing, he brought into his mouth what seemed to be a small growth attached to the uvula. The growth was easily swallowed, but his throat felt sore and swollen for several days. He had no further trouble until three weeks before coming for examination when, following a heavy meal, he had become nauseated, and in vomiting ejected a piece of tissue long enough to protrude from his mouth. He became quite excited and tried to bite it off, but lack of teeth prevented this, and he again swallowed the tumor. His throat felt uncomfortable and his breath was very offensive for a few days following this experience. A

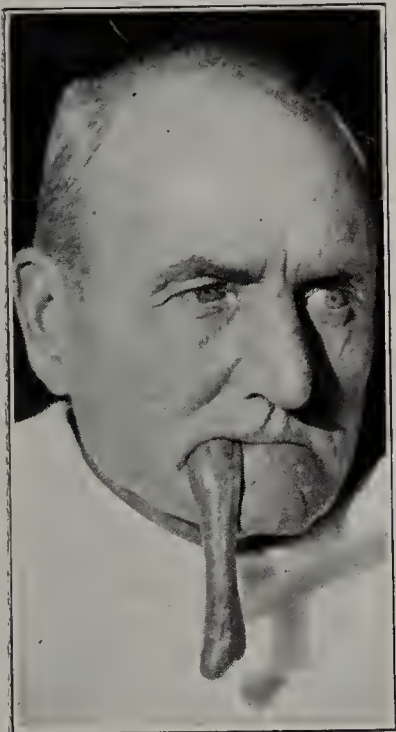


Fig. 1.—Protruding tumor.

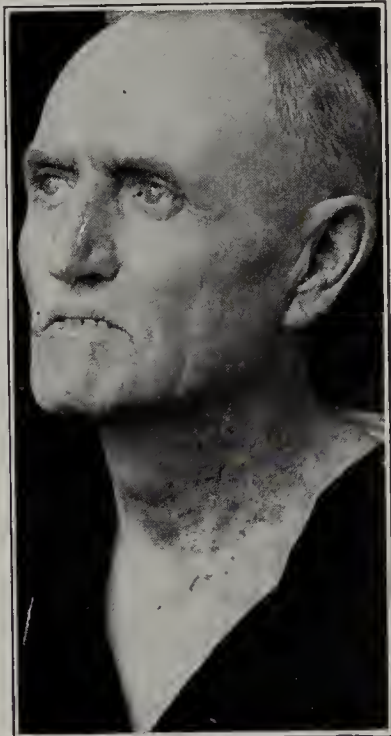


Fig. 2.—Patient after operation.

week later the growth was again regurgitated, but was swallowed with comparative ease. There was no dysphagia at any time.

November 30, with the aid of an esophagoscope introduced without anesthesia, on the right wall of the esophagus just below the introitus was seen the origin of a pedunculated tumor; the pedicle was about 1 cm. ( $\frac{3}{8}$  inch) in diameter. No attempt was made to pull the growth out of the mouth. A week later, after the patient had eaten breakfast, vomiting was induced and the tumor regurgitated (Fig. 1). It extended from the mouth 11.5 cm. ( $4\frac{1}{2}$  inches) beyond the incisor teeth. The tip was 6.5 cm. ( $2\frac{9}{16}$  inches) in circumference, gradually tapering toward the base. It was rather firm and covered with normal mucous membrane, except for a small area of ulceration near the tip.

Removal by means of snare or electric cautery through the mouth was considered, but on account of the high attachment it seemed best to open the esophagus through an incision on the left side of the neck and excise the growth. The operation was performed, December 7, by Dr. Judd, whose data concerning the operation are as follows:

The patient had been made to vomit the tumor out of his mouth prior to operation, as it was feared some difficulty might be encountered in locating its base. The neck was

infiltrated according to Allen's technic, 0.5 per cent. procain being used. The injection was made in the middle and posterior portion of the left sternocleidomastoid muscle. About a 13.7 cm. ( $5\frac{1}{2}$  inch) incision was made along the anterior portion of the left sternocleidomastoid muscle, extending from 2.5 cm. (1 inch) below the mastoid process almost to the

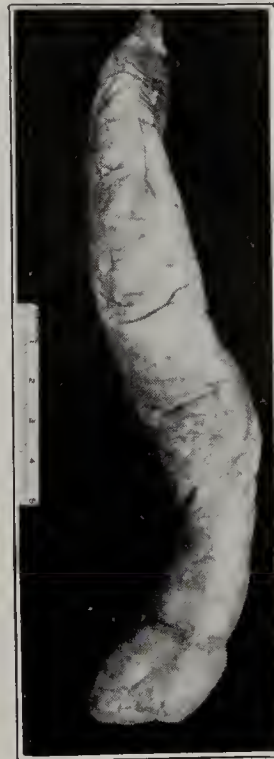


Fig. 3.—Tumor after removal.



Fig. 4.—Longitudinal section of tumor.

sternoclavicular articulation. The tissues were divided in layers, and the muscle was retracted to the outer side. Coming down to the thyroid capsule, the thyroid gland was gently retracted inward, and the carotid sheath and vessels were

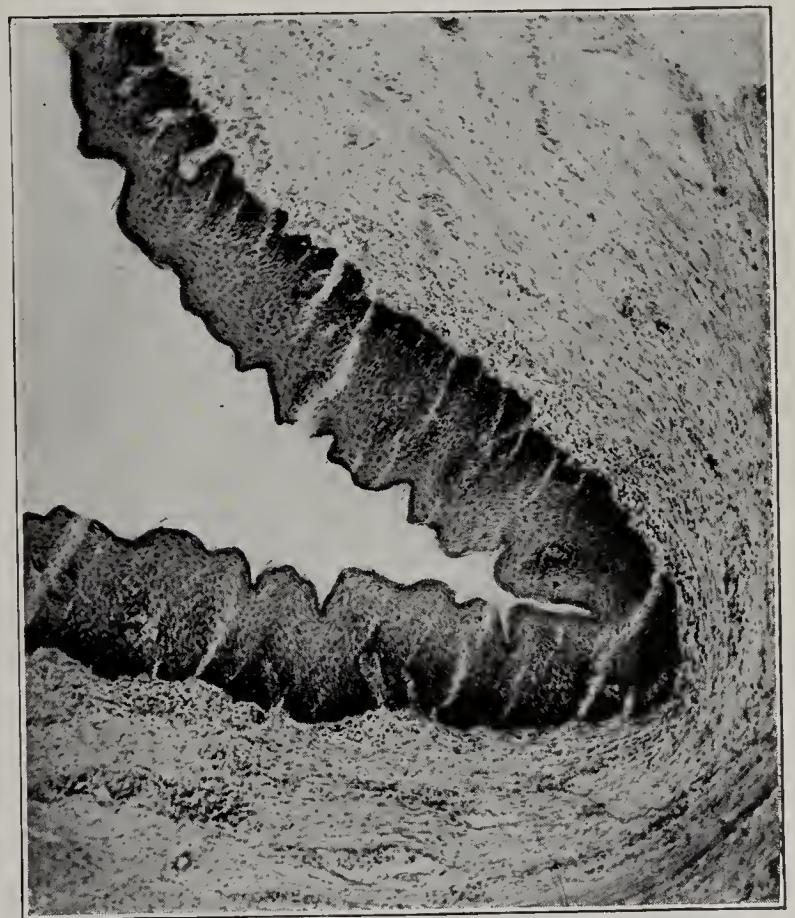


Fig. 5.—Photomicrograph of covering of normal mucous membrane,  $\times 50$ .

pulled to the outer side of the neck. The omohyoid muscle was divided, and, the cricoid cartilage being identified, the esophagus was sought opposite this point, much the same as in operations for esophageal diverticula, which almost always come off at the pharyngo-esophageal dimple. On the

\* From the Section on Medicine, Mayo Clinic.



left side, care was taken to avoid the recurrent laryngeal nerve, but this structure was not identified during the operation.

After a careful dissection down to the esophagus, an opening was made and the base of the tumor identified. Although it had been the intention to remove the tumor from below upward, it was now decided to withdraw it through the wound. The base was ligated and the tumor severed. The raw surface over the stump was closed with normal mucous membrane from the esophagus, and the esophagus itself closed with two rows of catgut. The wound, which was soiled from regurgitated material, was thoroughly washed and closed tight except for an opening for a small rubber tissue drain. The tissues of the neck were closed in layers, the skin being closed with interrupted dermal sutures. The mediastinum had not been invaded, and a satisfactory prognosis seemed certain. The patient cooperated well, and the whole procedure was accomplished without difficulty.

The postoperative course was entirely satisfactory. Nothing was given to the patient by mouth for eight days. He was nourished by hypodermoclysis and proctoclysis. He bore unflinchingly the lack of fluids by mouth. The drain was removed at the end of seventy-two hours, and the neck healed without infection (Fig. 2).

At the end of a week, when water was given in small quantities, the patient had some difficulty in swallowing. This soon disappeared, however, and when he was ready for dismissal, two weeks after operation, there was only slight evidence of dysphasia. The length of the tumor after removal (Figs. 3 and 4) was 22.5 cm. (8¾ inches). Microscopic examination showed it to be a simple lipoma (Figs. 5 and 6).

#### COMMENT

Benign tumors of the esophagus occur rarely. A few cases of myomas, angiomas and fibromas, and a large number of cases of polyps have been reported, but the majority were

such a case. Jones<sup>2</sup> reported a pedunculated lipoma of the larynx 5 cm. (2 inches) in diameter, arising from the right aryepiglottidean fold and protruding into the mouth.

#### A CASE OF SPOROTRICHOSIS IN CONNECTICUT\*

CHARLES T. NELLANS, M.D., NEW HAVEN, CONN.

Since 1898, when Schenck<sup>1</sup> published a report of human infection with a sporothrix, interest in the condition has not been lacking. The French, principally de Beurmann and

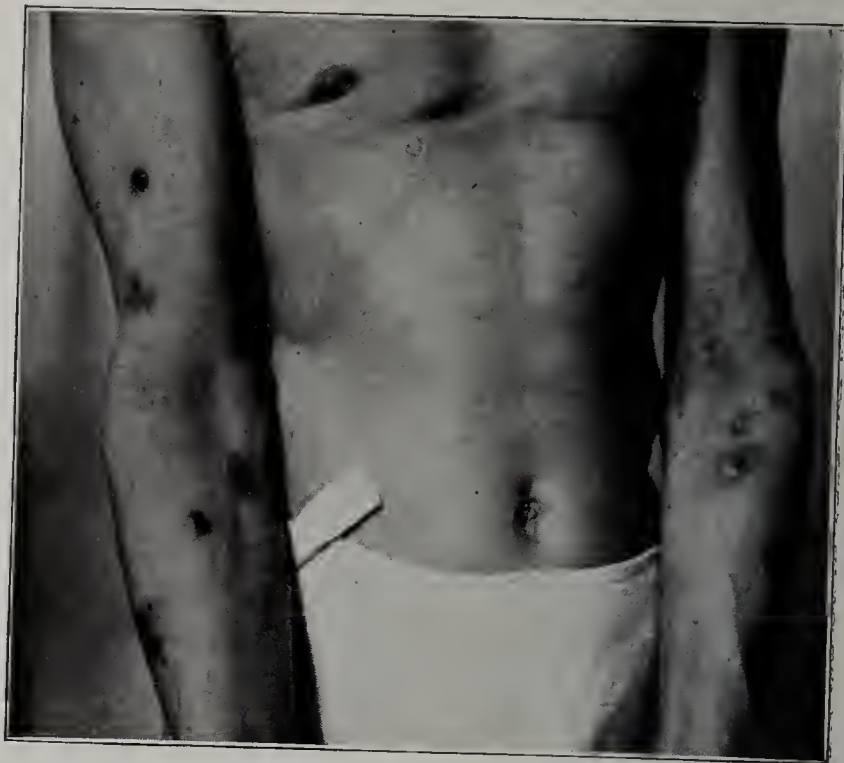


Fig. 1.—General distribution of lesions on arms.



Fig. 6.—Photomicrograph of tumor,  $\times 60$ .

discovered at postmortem and had not caused symptoms. Rokitsky<sup>1</sup> reported a polyp 18.75 cm. (7¾ inches) in length which caused slight dysphagia. In discussing benign tumors of the esophagus, several authors have stated that lipomas may occur; but I have been unable to find a report of

Gougerot, have continued the study of the organism and have pointed out not only its widespread distribution in France but also the comparative frequency of human infection. In America, eighty-two human cases, of which fifty were substantiated by culture, were compiled in a survey of the literature by Meyer<sup>2</sup> in 1915. The disease at that time, as would seem to be the case now, occurred with greater frequency throughout the West and the Northwest, in the valleys of the Mississippi and the Missouri rivers, appearing less frequently throughout the more Eastern seaboard states.

During the last four years occasional reports have appeared in the American literature, some twenty cases having been recorded. This small number, however, does not indicate that the disease is a rare one. On the contrary, as knowledge of the condition becomes more general, recognition occurs in direct proportion and cases are now being seen which are not reported.

In 1917, Blaisdell<sup>3</sup> reported a case in Boston which was the first recorded case in New England. In 1918, Cragin, Hardy and Shaw<sup>4</sup> reported a case in Maine. A personal communication to Dr. Lane from Dr. Harvey P. Towle in September, 1921, states that several unreported cases of sporotrichosis had been seen in Boston since 1918.

The case here reported is the first, as far as can be ascertained, seen in Connecticut:

A man, aged 45, referred by Dr. W. S. Lay, entered the New Haven Hospital in the medical service, Sept. 7, 1921. In November, 1920, there appeared on the lateral surface of

2. Jones, S.: Fatty Tumor Removed from Right Arytoeno-Epiglot-tidean Fold, Tr. Path. Soc. London **32**: 243, 1881.

\* From Yale University School of Medicine and the New Haven Hospital, Department of Internal Medicine, Subsection of Dermatology.

1. Schenck, B. R.: On Refractory Subcutaneous Abscesses Caused by a Fungus Possibly Related to a Sporotricha, Bull. Johns Hopkins Hosp. **9**: 286, 1898.

2. Meyer, K. F.: The Relations of Animal to Human Sporotrichosis: Studies on American Sporotrichosis, III, J. A. M. A. **65**: 579-585 (Aug. 14) 1915.

3. Blaisdell, J. H.: Sporotrichosis: A Clinical and Histopathological Report of the First Case to be Published in New England, J. Cutan. Dis. **35**: 452 (Aug.) 1917.

4. Cragin, D. B.; Hardy, T. E., and Shaw, J. F.: Sporotrichosis, Report of Case, J. Maine M. A. **9**: 93 (Nov.) 1918.

1. Rokitsky, quoted by Zenker, F. A., and von Ziemssen, H.: Diseases of the Esophagus, Cyclopaedia of Practical Medicine (Ziemssen), New York **8**: 1-214, 1878.



the left leg just below the knee, a subcutaneous, pea-sized, firm, painless nodule over which the skin was easily movable and not discolored. Within a fortnight the nodule increased in size to that of a hazelnut. The overlying skin progressively reddened and became more closely associated with the underlying nodule, the whole process attaining a purplish hue. No history was obtainable of a concomitant lymphangitis, but at about this time the process spread, similar lesions appearing on the lateral surface of the left thigh, on the right leg, and on both forearms. The earlier nodules appeared near the distal end of the extremities, the progress of the lesions being upward.

On admission, the patient was seen by Dr. Lane, chief of the section of dermatology, who made a tentative diagnosis of sporotrichosis, and thus described the lesions:

On each forearm were a number of lesions varying from a very small pea to a hazelnut. The earlier lesion was a hard, cutaneosubcutaneous nodule. Large ones were red, with softened center. Where they had been incised and healed, there was a deep, dusky pigmentation. There was one small subcutaneous nodule about 3 inches (76 mm.) to the right of the umbilicus. On the outer surface of the left leg there was a scar about 1 inch (2.5 cm.) long and one-half inch (13 mm.) wide, and near it a softened nodule. There was a soft nodule on the outer surface of the left thigh, and several scars. There were several scars on the right thigh, and three disappearing nodules. There was one spot about the size of a quarter of a dollar with a granulating surface. There were two lesions which had small discharging sinuses. The larger tumors were typical gummas, soft in the center but, with the exception of the two just mentioned, covered with unbroken skin.



Fig. 2.—Lateral surface of thigh.

Several of the nodules were excised for microscopic examination and for culture. The pathologic report was made by Dr. R. A. Lambert:

The specimen consisted of two small pieces of skin and subcutaneous tissue. The larger, about 1 by 1.5 cm. ( $\frac{3}{8}$  by  $1\frac{1}{32}$  inch), showed a small abscess cavity beneath the red, brawny epidermis. The abscess contained a thin, bloody pus. From this, smears and cultures were made. The second piece of skin included a nodule, which in the fixed specimen looked firm and white. The epithelium was everywhere apparently intact. Microscopically, the smaller of the two pieces of tissue showed the more clear cut lesions. In the derma there was a small abscess with an irregular cavity which communicated with the exterior through a tiny break in the epidermis. The cavity contained polymorphonuclear leukocytes in various stages of disintegration, a moderate amount of fibrin, and a few red cells. The abscess wall was made of granulomatous tissue of unusual character. Beneath the layer of polymorphonuclear leukocytes there was a zone of large, elongated cells with pale nuclei, and indistinctly outlined cytoplasm of the same general type as the so-called epithe-

lioid cells which form the body of a tubercle. These cells were, for the most part, arranged with their long axes parallel to one another and perpendicular to the cavity wall. Some of the cells were multinucleated. Interspersed among them were a few polymorphonuclear leukocytes. Outside this epithelioid zone there were great numbers of mononuclear wandering cells mostly of the plasma cell variety. They were scattered through a loose connective tissue along with developing fibroblasts and young blood vessels. The abscess wall thus showed clearly three zones: (1) a layer of pus cells; (2) an epithelioid zone, and (3) an outer zone in which plasma cells predominated. Extending through the derma about the abscess there were focal inflammatory nodules, some of which simulated tubercles. They were made up of epithelioid and connective tissue cells, occasional giant cells of the Langerhans type, mononuclear cells, and a few polymorphonuclears. The histologic picture clearly suggested a specific type of chronic granuloma. The presence of great numbers of epithelioid cells and their arrangement here and there into more or less discrete nodules made the reaction very much like that of tuberculosis. There were, however, at least three features that distinguished the lesion from tuberculosis: (1) the presence of polymorphonuclear leukocytes throughout the entire inflammatory zone; (2) the absence of coagulative necrosis, and (3) the presence of blood vessels in the nodules. The histologic picture agreed in every detail with that described by de Beurmann and Gougerot in cutaneous lesions of human sporotrichosis. The three distinct cellular zones forming the abscess wall are regarded by these and other investigators as characteristic of the reaction. Anatomical diagnosis: probably sporotrichosis.

Bacteriologic examination of the pus from an incised lesion showed a sporothrix to be present. Very rapid and satisfactory improvement occurred after administration of potassium iodid by mouth.

#### ADMINISTRATION OF ETHER BY THE USE OF A SIMPLE MECHANICAL ETHER DROPPER \*

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ALEXANDER FOSHEE, M.D., NEW YORK

The open method of etherization was originated and developed in 1893 by Dr. Lawrence Prince. Isabella Herb was associated with Dr. Prince, and in 1888 she reported 1,000 cases in which she gave the open method. She relates that the superiority of this method is evidenced by a steady growth in popularity. According to the statistics of the committee on anesthesia of the American Medical Association, more than half of the ether anesthetics administered from 1905 to 1912 were by the open method. The simplicity of this method should argue rather for than against its efficiency.

#### TECHNIC OF OPEN ETHER ADMINISTRATION

The administration of ether spells comfort or discomfort to the patient. Often it establishes his attitude toward ether, and determines the patient's reaction toward the whole art of surgery. Many hospitals are not equipped for the induction of gas and oxygen, which doubtless is most agreeable to the patient, and must resort to ether alone, which has been found the most desirable method. By gaining the patient's confidence and telling her to breathe naturally, allowing her at first barely to smell the ether, and then gradually increasing the drop, we have no trouble to induce narcosis. Rarely do we experience any excitement stage. Occasionally a volatile oil, such as oil of lavender, is placed on the mask, which disguises the odor of the ether, and the patient loses consciousness before the ether becomes too concentrated. A gauze ring pad is placed over the face before the anesthetic is started; this keeps the air from passing in except through the cone. The cover on the cone should not be too thick. From four to six layers of gauze are ample; if more are used, this method becomes semiclosed. A stockinet is much better for covering the mask than is gauze. If the cone is too thin, it is difficult or impossible to induce and maintain anesthesia. The ether should be dropped continuously on the cone. If the dropping

\* Read before the gynecologic conference at Bellevue Hospital, Dec. 3, 1921.

\* From the Post-Graduate Department of Surgery, University and Bellevue Hospital Medical College, New York.



is suspended until the patient becomes rigid, then this becomes an uneven narcosis. Intermittent administration of ether has the further disadvantage or danger of administering too concentrated a vapor in one's haste to get the patient in under again. It has been proved that from 6 to 7 per cent. ether vapor is the greatest concentration which can be inhaled without irritation to the air passages. When the proper technic of etherization is carried out by a steady, even drop, which

can best be done by the use of a mechanical apparatus as described below, narcosis develops along the lines of a natural sleep. It is rare not to have a smooth anesthesia, with relaxed muscles and perfect oxygenation.

The open drop method is suitable for any operation in which ether is the anesthetic of choice. Trouble during induction is due to faulty technic or poor ether.

#### ADVANTAGES OF THE OPEN METHOD

This rests on demonstrated facts. The greatest advantage of this method is the large and constant supply of oxygen that the patient receives during the anesthesia, which is indicated by

the good color of the skin and blood. There should be no toxic effects. Gatch,<sup>1</sup> in 1911, during a series of experiments, proved that the severity of pulmonary lesions found after experimental etherization by the closed method is accounted for by the great concentration of the ether vapor.

Dresser,<sup>2</sup> in 1895, showed that ether vapor in the closed mask often rose to a concentration of 34 per cent., while 6 or 7 per cent. is the strongest concentration that can be inhaled without irritation to the air passages. He regards any concentration of ether which cannot be inhaled by the conscious person without coughing as harmful to the lung epithelium.

Offergeld,<sup>3</sup> in 1898, studied pathologic changes in the lungs after etherization of a series of animals for from seventy to eighty minutes by the closed method. The open method was given to another series of animals. Many of the animals etherized by the closed method died of bronchopneumonia; the rest were killed, and all were found to have patches of consolidation, desquamation and hemorrhages into the alveoli. None of the animals anesthetized by the open method died. After two days there were no changes in the lungs at necropsy, while the closed method victims showed pathologic changes four days after etherization.

As mentioned in a previous paragraph, a perfectly smooth, even drop can best be given by the use of a mechanical dropper. Various ether droppers have been made for this purpose, but many of these have been unsatisfactory; for this reason we have devised an apparatus, which in every way meets the necessary requirements. It has proved that narcosis can be produced without any excitement stage. The pulse and respiration remain good, the color of the patient is excellent, and the postoperative blood pressure in many cases exceeds the preoperative pressure.

The apparatus is very simple, but is efficient when properly handled. It consists of a transparent glass cup through which runs a needle valve that regulates the drop. The cup holds

one 4 ounce can of ether. This cup is suspended on a flexible arm which is fastened to a clamp, and can be attached to any operating room table with ease. The flexible arm allows the cup to be placed at any desired angle.

The advantages of this apparatus are: that it is easy to manipulate; it gives an even, steady drop on one place of the cone; it allows perfect oxygenation with smooth anesthesia; induction is readily and easily produced with it; it leaves one hand free so that the anesthetist may attend his patient with ease, and it can readily be attached to any operating table.

#### CONCLUSIONS

With the open method of etherization, the blood is well oxygenated. The concentration of the ether is small. There is no rebreathing, but always a fresh supply of air. There is less injury to the lung epithelium. Anesthesia is easily induced, and a simple mechanical apparatus is best for obtaining a smooth, even drop.

The apparatus described was made by the Foregger Company, Inc., 47 West Forty-Second Street, New York.

### LEVELING (BALANCING) THE PELVIS IN CASES OF INEQUALITY OF LENGTH OF LEGS, WITH A DESCRIPTION OF A PATHOGNOMONIC SIGN

PHILIP LEWIN, M.D., CHICAGO

Attending Orthopedic Surgeon, St. Luke's and Cook County Hospitals;  
Associate in Orthopedic Surgery, Northwestern University Medical School

The case herein reported emphasizes the importance of balancing the pelvis, in the presence of infantile paralysis, congenital shortening of a leg, fractures involving a leg, or disease of the bones or joints of the pelvis and lower extremity. This can be done only after a careful examination of the nude dorsal surface of the body, with the patient standing. The examination should be insisted on, in all cases of possible involvement of the area from the midlumbar to the midthigh regions.

#### REPORT OF CASE

A girl, aged 17, a pupil of the Fallon School for Crippled Children, was admitted to St. Luke's Hospital, in the service

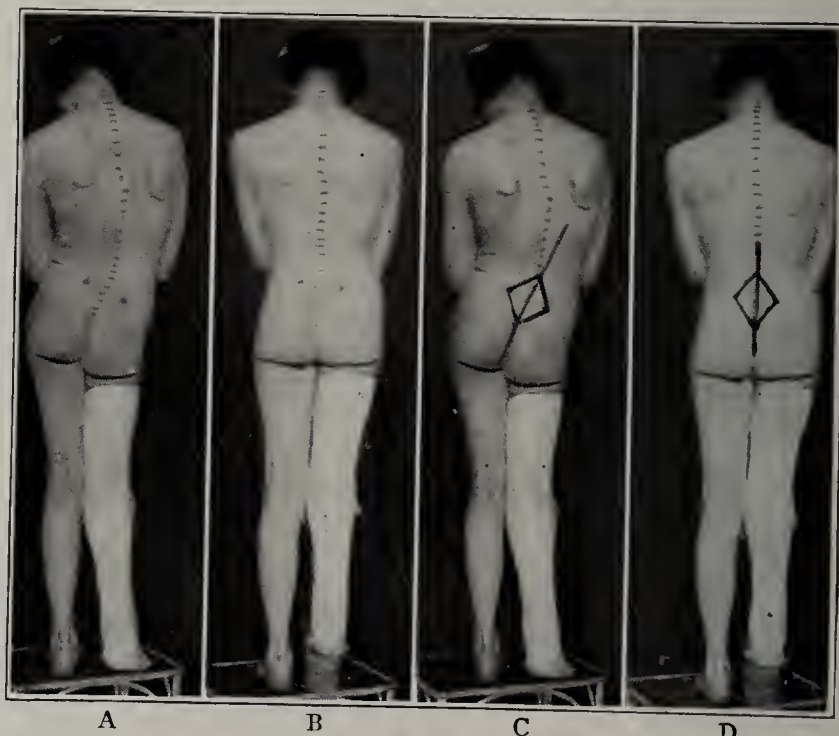


Fig. 1 (case herein reported).—A, pelvic disbalance; right gluteal crease, posterior superior iliac dimple, iliac crest and anterior superior iliac spine are low; three folds in left iliocostal angle, none in right; marked right total scoliosis. B, 2 inch elevation under right foot; creases, dimples, crests and iliac spines level; no scoliosis, iliocostal angles symmetrical. C, rhomboid tilted. D, rhomboid level.

of Dr. John Lincoln Porter, with the history of having had an attack of infantile paralysis when 2 years old. Because of a flail right knee, with marked involvement of all groups of muscles, no tendon transplantation was possible, and an arthrodesis was performed. The ankylosis was successful.

1. Gatch, W. D.: The Use of Rebreathing in the Administration of Anesthetics, J. A. M. A. 57: 1593 (Nov. 11) 1911.

2. Dresser: Bull. Johns Hopkins Hosp. 6: 7, 1895.

3. Offergeld: Arch. f. klin. Chir. 57: 175, 1898.



When she stood on both feet: (1) There was marked total right scoliosis (Fig. 1 *A*); (2) the right gluteal crease was 2 inches lower than the left; (3) the dimple at the posterior superior iliac spine was lower on the right side; (4) the right iliac crest and anterior superior spine were low, and (5) there were three folds in the left iliocostal angle and none in the right. When wood splints were placed under the right foot until it was raised 2 inches, the result—a balancing of the pelvis with correction of the scoliosis—was striking (Fig. 1 *B*).

A word of caution is not amiss: The difference in level of the gluteal creases is not directly proportionate to the inequality in length of the legs because in infantile paralysis affect-

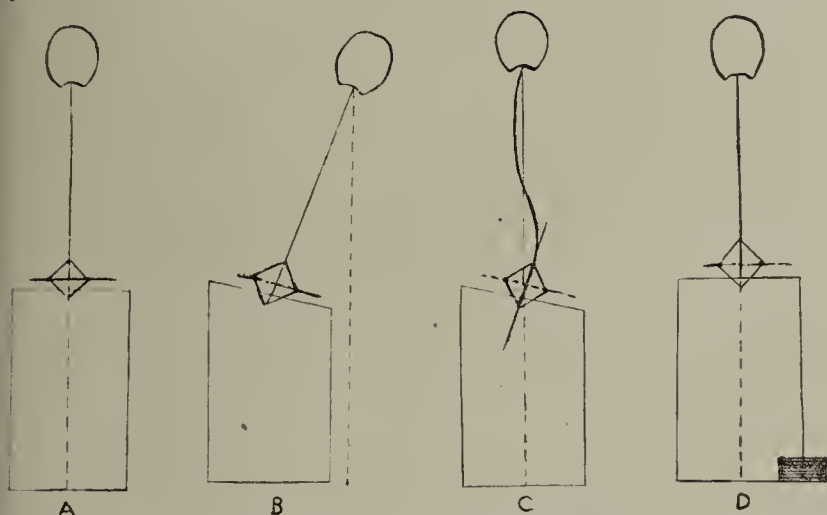


Fig. 2 (schematic).—*A*, legs of equal length, pelvis and posterior superior iliac spine dimples level; rhomboid upright. *B*, right leg 2 inches short; pelvis and dimples unlevel; rhomboid tilted; head and trunk displaced to the right. *C*, same as figure *B*, except that in the endeavor to maintain the head over the middle of the pelvis, the spine assumes a left dorsal, right lumbar scoliosis. *D*, with 2 inch lift under right leg, the head is maintained over the middle of the pelvis and it is not necessary for the spine to curve because now the pelvis is level and the rhomboid is again upright.

ing the muscles of one buttock, that part is much smaller throughout. In such cases the dimple at the posterior superior iliac spine is a better landmark. The entire femur is possibly slightly smaller, owing to neurotrophic disturbance. Asymmetry of the pelvis may be present.

It is surprising how many adults (especially females) with low back pain, may be relieved by leveling the pelvis.

Comparatively few orthopedic surgeons attach sufficient importance to the rhomboid of Michaelis as a landmark in determining pelvic balance, whereas obstetricians have emphasized this point particularly. It has been described by De Lee as a diamond-shaped depression formed by the dimples of the posterior superior spines of the ilia, the lines formed by the gluteal muscles and the groove at the end of the spine. Variations in its shape and size, he says, give us valuable information in deformed pelves.

If this rhomboid is outlined on the patient, while standing, the vertical axis should be parallel with the long axis of the body. If not parallel, it is a pathognomonic sign of definite value (Fig. 1 C). I have not seen this mentioned in the literature. In the case described, the wrinkles in the iliocostal region are on the side opposite the short leg; the high shoulder is on the same side as the shot leg and on the same side as the low iliac crest.

## RUPTURED ANEURYSM OF THE TONGUE

FRED C. SABIN, M.D., LITTLE FALLS, N. Y.

*History.*—Mrs. J., aged 34, white, married, referred to me by Dr. Eveleth, Jan. 18, 1922, complained of persistent bleeding from the tongue. The history was negative, with the exception of three previous pregnancies. During the first pregnancy, varicose veins formed on the inner sides of both thighs. During the second and third pregnancies these veins became more prominent, and some formed below the knees. During these pregnancies her general health was good. In the interval between pregnancies these veins became much smaller and gave the patient no trouble or discomfort. The venereal history was negative. No Wassermann examination was made.

*Present Illness.*—According to the menstrual history, the patient was thirty-eight weeks pregnant. Her general health had been rather poor during this period. Since the twenty-fifth week there had been a gradual enlargement of the veins of the lower extremities. January 11, she first noticed "a dark red blister on the tongue," which pulsed synchronously with the heart beat. This blister was about the size of the head of the old phosphorus match. It was located on the dorsum of the tongue, in the median line, about 2 cm. ( $\frac{3}{4}$  inch) from the tip. This blister was annoying because of its location, but was never painful. January 15, on rising, the patient noticed that her lips were blood stained and that the blister had disappeared (ruptured). There was bright red blood oozing from the tongue. In spite of local applications of ice, alum and caustics, the oozing persisted. Following exertion, the blood would spurt in jets synchronously with the pulse.

*Examination.*—The patient was quite nervous and worried over her condition. The tongue was covered with a heavy, black coating from continued use of the caustics. At the site where the blister had been, an artery the size of a pencil lead was spurting blood to a distance of from 12 to 15 inches (30 to 38 cm.) The abdomen was markedly enlarged. There were no enlarged veins in the abdominal wall. In the vulva the veins stood out in clusters not unlike a bunch of grapes. There were marked varicosities of the veins of both lower extremities below and above the knees. There was no edema of the feet or ankles. The blood pressure was: systolic, 135; diastolic, 85.

*Operation and Result.*—Under procain-epinephrin infiltration anesthesia of the tongue I placed one deep silk suture, checking the hemorrhage. This suture was removed on the sixth day. By this time the black coating had disappeared, and the tongue was normal in appearance. The patient was put to bed and was given liquor ferri et ammonii acetatis (Basham's mixture) and digitalis, and the veins of the vulva and extremities decreased somewhat in size. January 30, I delivered the patient of twin girls weighing  $7\frac{1}{2}$  and  $7\frac{3}{4}$  pounds (3.4 and 3.5 kg.), respectively. The second stage of labor was somewhat prolonged. The babies were both well formed and above the usual weight for twins.

23 North Ann Street.

## A NEW INTRAVENOUS NEEDLE

LOUIS LANDMAN, M.D., NEW YORK

Various kinds of needles are to be found in a physician's office. When taking blood for different tests, many use the Wassermann needle; for giving intravenous injections, a Luer or other needle is used.



Needle for intravenous administration.

I have devised a new intravenous needle, illustrated herewith, which will prove useful (1) for taking blood for various tests; (2) for the administration of intravenous medication, and (3) for blood transfusion.

The advantageous points presented by this needle are that (1) the fulcrum is in the center and thus enables the operator to steady the needle; (2) blood is not so likely to get over the fingers; (3) by having the hold on the fulcrum, connection can be made with either tube or syringe without contamination; (4) it is a straight needle and can be easily cleaned.

The needle is manufactured by Beckton, Dickinson & Co.,  
220 East Sixty-Ninth Street, New York.

**Anesthetics in China.**—The earliest record of the use of anesthetics in China was in the third century B. C. It is not known what is the exact composition of the narcotic wine of Pien Chiao, the effervescing powder of Hua To, the oil of the magician, or the "tincture forget-oneself" of Chen Shih-toh. Anesthetics are practically unknown in China at the present time.—*China M. J.* **35**:473 (Sept.) 1921.



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SATURDAY, MARCH 18, 1922

## PLACE OF TECHNIC IN THE PROGRESS OF MEDICINE

Progress beyond the traditional knowledge that we have inherited from our ancestors does not go on rapidly through the process of unaided observation and "the half-unconscious education which results from mere experience." In seeking the facts that lead to new discoveries in science, the ingenuity of the investigator engaged in the search is often taxed to the utmost. As Lord Moulton<sup>1</sup> fancifully expressed it, in an incisive defense of experimental research, the game has to be stalked from long distances and often by circuitous routes. It is no longer possible to walk directly up to it. Part of most plans for scientific investigations of the present day are concerned with the development of methods—with the technic of research. Professor Hopkins<sup>1</sup> has remarked, for instance, that although there were few aspects of modern bacteriology which the epoch-making Pasteur did not foresee and initiate by pioneer experiments, the advance made by others in bacteriologic technic was, during his lifetime, so great as to leave him almost an amateur among experts in the narrow domain of pure technicalities.

An excellent example of the triumph of new technic in the progress of science is furnished by Koch's greatest achievement, the invention of the poured plate method in 1881. At the annual meeting of the American Public Health Association in New York a few months ago, Professor Jordan<sup>2</sup> of the University of Chicago made significant reference to the procedure which has played a part so highly important in the modern study of disease. He reminded his hearers how in rapid succession came the discovery of the bacilli of tuberculosis, typhoid fever, diphtheria and other widespread diseases, of the micrococci of ordinary suppuration and of gonorrhea, of the vibrio of Asiatic cholera, and of many other micro-organisms still today regarded as bearing a specific causal relation to a specific disease.

Nor is the value of novel technic confined solely to such striking instances of eminent discovery. It is the

lack of a suitable method of approach which often limits the resourcefulness of the surgeon. A comparable ignorance of appropriate chemical or physical procedures may explain the failure to make an illuminating diagnosis in certain cases. Even therapy depends on devices as well as on drugs to secure desired remedial or curative results. Lee<sup>3</sup> has truly remarked that one cause of distrust of medicine lies in the inability of the physician to do certain things. Technic often is the key to success, and new technic, like other discoveries and inventions, is usually the outcome of experiment and investigation. Ehrlich's studies with dyestuffs led to some of the great triumphs of present day chemotherapy. Galvani's observations of frogs were the beginnings of our knowledge of electrotherapy. If it is to prosper in every direction to the greatest degree, medicine must safeguard the activities of those engaged in the study of technic as well as of those concerned with the "practice" of their profession; for it has often been pointed out that the success of the practical man is largely due to the fact that he applies the principles which the idealist has discovered. "The more we encourage the freedom of research," says Lee, "the sooner will scientific medicine arrive at its goal."

## "THE FUTURE INDEPENDENCE AND PROGRESS OF AMERICAN MEDICINE IN THE AGE OF CHEMISTRY"

The recent war caused American physicians, chemists and, to some extent, the American public to realize as never before how dependent they had been on Germany for many of their most valuable, often almost indispensable, drugs. Even before the United States was drawn into the war, adequate supplies of such important drugs as arsphenamin, the modern local anesthetics, hypnotics, diuretics and certain analgesics were not available. The need for some of these was first met by other foreign countries (Canada and Japan, for example); but before the war was over, American manufacturers were making adequate supplies<sup>4</sup> of those urgently needed.

On the chemists devolved the problem of meeting the war-time shortage of drugs. In their work on war gases they had had an example of what could be accomplished in an almost incredibly short time, when facilities for research were provided on a large scale and under conditions allowing of the fullest cooperation of chemists, physicists and physicians. They were not slow, therefore, to appreciate the situation. Even before the armistice, the American Chemical Society appointed a committee to determine, among other things, whether there is "no valuable lesson for peace, in this mighty and successful effort in the making of war."

1. Science and the Nation, edited by A. C. Seward, Cambridge University Press, 1917, p. xvii.

2. Jordan, E. O.: The Relations of Bacteriology to the Public Health Movement Since 1872, Am. J. Pub. Health 11: 1042 (Dec.) 1921.

3. Lee, F. S.: Scientific Features of Modern Medicine, New York, Columbia University Press, 1911, p. 169.

4. The American Chemical Industry, editorial, J. A. M. A., Aug. 6, 1921, p. 407.



The report of this committee, entitled "The Future Independence and Progress of American Medicine in the Age of Chemistry," has appeared; it contains much of interest to the physician. Some of the achievements in synthetic organic chemistry in relation to therapeutics are briefly outlined: how, for example, chemists, pharmacologists and clinicians, starting from the naturally occurring cocaine and atropine, have made modifications and, for some purposes, improvements in these drugs; often valuable compounds which superficially seem to have no connection with the original drugs have resulted from these studies.

The introduction of synthetic organic chemicals, beginning with ether and chloroform, has revolutionized the practice of medicine and surgery in the last seventy-five years. Yet nearly all these discoveries were made in a haphazard, often accidental way. There have been few well directed and well supported efforts looking toward the development of this line of work. This history offers a sorry contrast to that of the development of modern dyes, explosives and poison gases. The study of pharmacology today is at about the stage the study of the dyes was sixty years ago: "Originally dyes (like the older drugs) were obtained from natural sources. . . . Then, in 1856, Sir William Perkin accidentally prepared the first aniline dye. . . . In the sixties, pioneer chemists started on the finest ultimate analysis of the dyes. . . . The result of this . . . has been the complete conquest by man of the domain of color production."

There were powerful financial incentives to develop the chemistry of dyes; there were not only monetary but also patriotic motives for the development of explosives and war gases, and the governments financed the latter. The development of pharmacology (as shown by the section of the report on "Existing Facilities for Chemomedical Research") has been left largely to the pharmacological laboratories of the German universities and the German institutes for experimental therapeutics, hygiene, and the like; these were supported largely by the German governments. Recently, private endowment has also played a part in Germany; the pioneer work of Ehrlich on arsphenamine was made possible by the Speyer endowment. The universities of the United States, as regards facilities for the study and teaching of pharmacology, are still behind those of Germany; scarcely one has a department comparable, as regards resources, with many departments of anatomy and physiology, and most have only makeshifts or pseudodepartments. Our schools of medicine and hygiene are largely ignoring the great services which pharmacologists, in close cooperation with chemists and clinicians, can render to hygiene and preventive medicine; for just as smallpox and typhoid have been controlled by vaccination, so treatment of the individual syphilitic by arsphenamine

or similar drugs, thus rendering him noncontagious, promises to be the chief factor in the elimination of syphilis. The use of drugs (silver compounds) has saved the sight of countless children; curing the person infested with hookworms by the use of drugs, curing the malaria carrier by quinine, curing the victim of bilharziasis with antimony, and checking for a time at least the infectivity of the leper by the use of chaulmoogra oil derivatives, are among the most promising chemotherapeutic means of controlling these diseases. But the field of preventive medicine has scarcely been entered. Here certainly is an opportunity for what the chemists' report calls an "outlet for practical idealism," through the liberal endowment of an institute in which scientific investigators in all the fields interested in drug therapy may cooperate to determine what drugs are necessary and what are the best and most economical methods of producing them. Coincidentally, there is an opportunity for the provision of better facilities for the study and teaching of pharmacology in the schools of medicine and hygiene.

Some twenty years ago, Congress, with rare vision, established the Hygienic Laboratory of the United States Public Health Service; the plan of organization was unsurpassed by that of any laboratory in the world. The staff has included some of the foremost representatives of chemistry, pharmacology, bacteriology and medical zoology, the specialties most needed for a cooperative attack on the great problems of health, in the country. But subsequent congresses have failed to provide for any considerable growth of this laboratory; it stands virtually as it was two decades ago. Enlarged and with adequate support, this laboratory could give the United States the leading place in the world in this great scientific and humanitarian work. The people of this country spend \$500,000,000 a year on drugs in addition to other large sums for other means of obtaining relief from suffering and disease. Would it not "pay" to spend a million or two a year to determine whether this great drug bill could not be reduced by the discovery of better, fewer and cheaper drugs as well as of other means of preventing disease and obtaining relief from pain? Physicians and others who believe such to be the case should use their influence with Congress to secure more adequate support for the Hygienic Laboratory.

A governmental research institute of the type described would be ideal; if, however, the government cannot be made to see its opportunity, an adequately endowed and controlled research institute, in which there will be actual cooperation, must be the goal of those who realize the vast benefits which will accrue from the proper type of research in drug therapy. In such institutions, research workers of a high type, with sufficient remuneration to enable them to give the fullest attention to the problems demanding solution,



may shortly achieve results of such great scientific as well as monetary value as to dwarf into insignificance the sums spent for endowment.

### THE QUALITY AND VITALITY OF AMERICA'S POPULATION

No group of citizens has a greater interest in the quality of its population than does the medical profession. The physician is naturally solicitous about the health, intelligence and "all around efficiency" of the peoples of America, and inevitably the factors that control or modify these aspects of our civilization enter into the problems to the solution of which the medical sciences and hygienic arts are expected to contribute. If the United States is in truth a great melting pot wherein the most diverse races are being fused and amalgamated, what sort of a human product is the coming generation likely to be? Is it advantageous from the biologic standpoint to permit the human evolution in our nation to proceed as in the past century, or does the accumulated experience analyzed from an impartial scientific standpoint dictate a departure from our traditional policies?

These are some of the questions that arise from a study of an investigation of the vitality of the peoples of America which Raymond Pearl<sup>1</sup> of the School of Hygiene and Public Health at the Johns Hopkins University has made for the Society of American Peoples of New York. From his biostatistical analysis it appears most probable that the United States, as now areally limited, has passed its period of most rapid growth of population, unless some factor that has not operated heretofore comes into play. The maximum population attainable in the course of the next hundred years is likely to approach twice our present numbers. Two hundred millions of persons will require about 260,000,000,000,000 calories per annum. As Pearl points out, unless our food habits radically change and man becomes able to live on less than the currently accepted standards of daily food fuel, the limitations of our agriculture and the difficulties of inevitable importation of one-half our requisite food units will bring the pressure of population on the means of subsistence to bear in ways that the great grandchildren of our people of today are likely to realize emphatically.

With respect to the kind of population to be expected in America at the time when a real overcrowding may be looked for, Pearl has offered some interesting speculations based on statistical facts regarding the racial changes now going on among us. It is an outstanding fact, he states, that the newly arrived foreigners rather speedily fuse effectively with the stocks already here to a degree far greater than is assumed, at least in most popular discussions of the subject of immigration and related matters. The foreigner in this country is

more likely to marry an American-born person, if he does not marry one of his own race, than he is to marry some foreigner of his own race. The fertility of the foreign-born women is greatly in excess of that of the native-born. A significant biologic result of Americanization is to reduce the fertility of marriages. For each native-born woman dying between the ages of 20 and 24, the native-born women as a group produce approximately twenty-two babies; the corresponding figure for foreign-born women is thirty-five.

The farther the fusion process proceeds from fresh immigrant stock the lower becomes the "vital index," that is, the measure of a population's condition which is given by the ratio of births to deaths within a given time. Pearl has concluded:

In general, unless forcibly prevented—which means finally by murder and sudden death—that people will inherit the earth and the fulness thereof which has habitually the highest vital index. The advocate of birth control as a solution of the problem of population should remember this, and draw from it the logical conclusion that if, for any reason whatever, he does not want the people who have the highest vital index to be the inheritors, he must be prepared to do something a good deal more violent than merely to control the birth rate of his own kind of people, which is, in practical effect, about all that he has done so far. And he must not forget that people who have a high vital index are apt as a group to be pretty good fighters, in a technical military sense.

Facing the fact "in the gigantic American experiment in human genetics" that the native population is not reproducing itself in competition with the amalgamating peoples, we need not fear a consequent deterioration of our descendants. The dominant element will be a new one, for the biometrists assure us that there cannot be anything approaching biologically pure race stocks in this country a century hence. Quoting Pearl again, the kind of people who will survive and conduct the affairs of the country, say a couple of centuries hence, when population pressure will be intense, will not be Englishmen or Slavs or Italians, but Americans of that type which has shown the greatest adaptability to the problems which life in this part of North America has presented. Why, then, need we be pessimistic about future Americans?

### RÔLE OF BLOOD PRESSURE AND FILTRATION IN THE FUNCTION OF THE KIDNEY

For many years, medical students have listened to the rehearsal of two theories of urine secretion; but physiologists have been unable to marshal sufficiently convincing evidence to remove either of these from the field of uncertainty. Three quarters of a century ago the Leipzig physiologist Carl Ludwig attempted to explain the formation and composition of the renal secretion by a purely physical hypothesis. Assuming that the membranes containing the blood are impermeable to a number of substances, among which proteins are most conspicuous, Ludwig concluded that the pressure exerted by the blood in the glomerular capil-

1. Pearl, Raymond: The Vitality of the Peoples of America, *Am. J. Hyg.* 1: 592 (Sept.-Nov.) 1921.



laries on their walls sufficed to bring about the filtration through them of a certain amount of fluid. The protein-free glomerular filtrate was supposed to contain the blood crystalloids in the proportion in which they exist free in blood; but, as the urine ultimately secreted is by no means precisely like the nonprotein portion of blood in composition, the further assumption was made that a reabsorption of certain components from the glomerular blood filtrate ordinarily takes place during its passage along the epithelium-lined tubular structures of the kidney.

The competing theory of urinary secretion, commonly designated as the Bowman-Heidenhain hypothesis, teaches that mere filtration followed by selective absorption or diffusion is not adequate to explain the known facts. It assumes, on the other hand, that the epithelial cells of the renal structures do not serve merely as a passive filter subject to blood pressure effects. Heidenhain assumed that both in the glomerular membranes and in the convoluted tubules the cells participate in some physiologic manner by an act of "secretion," the ultimate chemistry of which remains unexplained. At any rate, the physical forces of filtration, diffusion and perhaps imbibition have been regarded by many as inadequate for a satisfactory interpretation of the known phenomena of kidney function.

Richards<sup>1</sup> has now brought convincing support to the filtration theory so early formulated by Ludwig, and has refuted many of the seemingly valid objections to it. In his recently published lecture on kidney function, he has reported experiments which show unmistakably that variations in the flow of urine follow blood pressure changes in the kidney with surprising uniformity. This is true even under conditions in which the blood flow and blood volume are not materially changed. The work of Richards and his collaborators fortifies us in the belief that the glomerulus filters fluid rather than vaguely "secretes" fluid from the blood. The filtration hypothesis now rests on the clear demonstration that increment of blood pressure, even when unattended by increment in velocity or volume of blood flow in the kidney, increases urine formation; and the most weighty previous objections to this conclusion can now be explained in a manner consistent with it.

Nor is this the whole story. Indications have been afforded by Richards to show that nervous stimuli and chemical substances may exert different degrees of effective influence on the afferent and efferent vessels of the glomerulus, and that this may be a factor in that automatic regulatory control of glomerular filtration which is responsible in part for the maintenance of constancy of blood composition. Furthermore, by a brilliant technic Richards has actually observed the glomerular tufts during function in the living kidney.

It appears thereby that not all the glomeruli are receiving blood and are active at the same time. There may be intermittence of glomerular flow. The proof that the 2,000,000 urine-forming units in the human kidneys need not always exhibit a simultaneous functioning, one group resting while another responds to an active circulation in the malpighian tufts, permits new insight into renal behavior. It becomes easier, Richards writes, to understand how a kidney might eliminate from blood of the same composition and in equal periods of time urine of widely different composition; for a urine issuing as the result of highly active blood flow and high glomerular pressure in a smaller number of glomeruli must be different from that which issues as the result of slower blood flow and lower glomerular pressure from a larger number of glomeruli. The resorptive powers of the tubules would be effective to different degrees.

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## Current Comment

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### A DEFENSE OF RAW EGGS

Although eggs and a variety of products prepared from them have long been popular in the dietary of the sick, they are nevertheless the subject of frequent debate with respect to the form in which they are presented for ingestion. Traditional prejudices regarding eggs often find expression on the part alike of patients and of their physicians. Speculation as to the degree of cooking preferable to make eggs ideal as foods often calls forth contradictory advice. To one person the hard boiled egg is reputed to be peculiarly difficult of digestion; another will insist on its innocuous and wholesome character. Raw eggs have likewise been included in discussions of digestibility. Students of gastric physiology have repeatedly demonstrated that uncooked white of egg rapidly leaves the stomach, thus differing from most protein foods; furthermore, it does not excite any noteworthy flow of gastric juice. Unheated egg white is somewhat more resistant to digestion *in vitro* by proteolytic enzymes than is the same product after cooking. Several years ago, Bateman<sup>1</sup> asserted as the result of observations on animals that the feeding of considerable quantities of raw egg white may actually lead to diarrhea with loss of some of the ingested material in the feces. On the basis largely of such evidence, he<sup>2</sup> warned against the use of large quantities of uncooked egg in the dietary of the sick, urging that the food be heated at least to the point at which incipient coagulation of the proteins of the whites takes place. Recent tests on healthy persons by Rose and MacLeod<sup>3</sup> at the Teachers College of Columbia University, New York, have failed to disclose any occasion for severe condemnation of the raw egg in dietetics. When the whites of from ten to twelve eggs

1. Bateman, W. G.: The Digestibility and Utilization of Egg Proteins, *J. Biol. Chem.* **26**: 263 (Aug.) 1916.

2. Bateman, W. G.: The Use of Raw Eggs in Practical Dietetics, *Am. J. M. Sc.* **153**: 841 (June) 1917.

3. Rose, M. S., and MacLeod, G.: Some Human Digestion Experiments with Raw White of Egg, *J. Biol. Chem.* **50**: 83 (Jan.) 1922.

1. Richards, A. N.: Kidney Function, *Am. J. M. Sc.* **163**: 1 (Jan.) 1922.



a day were included in a simple mixed diet they were well utilized, the average coefficient of digestibility calculated for the raw egg white alone being 80 per cent., as compared with 86 per cent. for cooked whites in the same diet. The absorption varied with the method of preparation, being less for raw egg whites taken in their natural state than when beaten light. A mixture of whites partly beaten and partly unbeaten gave an intermediate value. In no case was there any sign of indigestion, such as discomfort or diarrhea, though one or two subjects found the diet slightly laxative. Since the quantities referred to may be regarded as maximal in dietary practice, one may agree with Rose and MacLeod that it seems unnecessary to emphasize unduly the difference between raw and cooked eggs, especially if the raw eggs are beaten.

#### ATOMIC DECOMPOSITION

Again the application of a new experimental tool from the domain of physics has opened a new field of chemistry. In a recent report to an intersectional meeting of the American Chemical Society, G. L. Wendt and C. E. Irion described their utilization of intense heat in the investigations of conditions which correspond to those of extremely hot stars; this heat was produced by means of massive electrical condensers. Whereas the chemist heretofore has been limited to a temperature of about 3,000 degrees centigrade, recently J. A. Anderson of the Mount Wilson Solar Observatory devised a method of producing "artificial lightning" whereby a temperature of 30,000 degrees could be reached. Using this method, Wendt and Irion subjected metallic tungsten to the maximum temperature—a temperature which lasts only a fraction of a second. They found that tungsten atoms, as such, were actually destroyed, and a considerable amount of helium gas was formed in the process. As yet the new process has no commercial value, because an extraordinarily large quantity of electrical energy is required to produce the phenomenon. The method consists essentially in "breaking up" or destroying the atoms used. Chemists tell us that the splitting of a heavy atom, e. g., tungsten, into a lighter one should be easier than the reverse process: the building of heavy atoms such as gold from iron is still as remote as ever. This work emphasizes again how scientific advance often is made to wait on mechanical achievement. The practical heavier-than-air flying machine was a theory until the development of the modern internal combustion engine gave power with small weight; so the demolition of metallic atoms at will, though theoretically thought possible, was not practically demonstrable until physicists had developed means of attaining temperatures of a degree never before reached. Our definition of an atom will change with the extension not only of our knowledge but also, even more, of our powers. To Sir Isaac Newton the atom was a hard, massy particle, indestructible, impenetrable. Twenty-five years ago, with the discovery of radioactivity, the conception changed, as a result of the revelation that radium decayed into totally different substances. Scientists have learned that the atom has a complex structure,

a real anatomy; they have observed one atom—that of radium—change into another, although that change was beyond human control. The atom in the light of newer knowledge was then conceived as an ultimate particle which man cannot change, but which may change automatically. Now appears another extension of the mastery of human intellect over matter: It has long been known that the very hot stars do not contain the heavy elements, presumably because the atomic collisions at high temperatures are so violent as to decompose them. It was on the basis of this fact that Dr. Wendt attacked the problem, and brought to the laboratory conditions approximating those that exist on the hot stars. Atoms, it seems, can be decomposed at will, if sufficient energy is employed. It need scarcely be said that the importance of this first step lies chiefly in what may follow. Probably more than atomic decomposition will be discovered at such extreme temperatures. A detailed knowledge of the factors that determine atomic stability in itself holds more promise than one may now surmise. Possibly it is true that "we inhabit a sensuous raft adrift on a supersensuous chaos." In any case it is reassuring to know that the fundamental sciences are adding still to the possibilities of the raft, and even overcoming the surrounding ocean of chaos.

#### THE DEMAND FOR VITAMINS

Thus the *British Medical Journal* in its current issue:

In spite of the fact that ordinary fresh foods are the simplest, cheapest and richest sources of vitamins, the public apparently demands to be supplied with vitamins in the form of medicinal products.

The public "demands" vitamins in pill form! Why? For the same reason that the public, lay or medical, demands many things today that it does not need—because the whole trend of modern advertising is toward creating demands, rather than supplying needs. Vitamin concentrates are being "demanded" by the public because shrewd and forward-looking "patent medicine" exploiters are using all the subtle arts of modern advertising to convince the public that it is in serious danger of vitamin starvation, and that the only hope lies in buying these alleged concentrates to make up a hypothetical deficiency. It seems inconceivable that a rational man would pay a tremendously high price for certain food factors which are already present in his ordinary diet. But he will; and advertising is the reason. Advertising campaigns such as these of the vitamins constitute a vicious circle; an artificial demand is created and then the manufacturer excuses his business on the ground that he is merely supplying a demand! As our British contemporary says, "ordinary fresh foods are the simplest, cheapest and richest sources of vitamins."

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**Public Health Movements Represent Private Initiative.**—It has been the story of this country that most of the permanent constructive progressive movements in public health have come from private initiative and later have been assimilated into official policies and administration and later still have been so approved of as to become incorporated in the sanitary law of the community.—H. Emerson, *Hosp. Soc. Service* 4:273 (Nov.) 1921.



## Association News

### ST. LOUIS SESSION

#### Special Railroad Fares

The Trans-Continental Passenger Association has announced that the individual lines in California, Nevada, Oregon, Washington and western British Columbia have decided to authorize a round-trip rate of fare and one-half of the current fares for the annual session of the American Medical Association to be held in St. Louis. Round-trip tickets will be on sale May 12 to 19, inclusive, and will be limited for return to June 5, 1922. They will be available only to Fellows and members of the American Medical Association, and dependent members of their families. Tickets may be purchased on presentation to the ticket agent of Identification Certificates. These certificates may be secured on request, accompanied by a self-addressed, stamped envelop, from the Secretary of the American Medical Association, 535 North Dearborn Street, Chicago.

### ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS

*Held in Chicago, March 6-10, 1922*

*(Continued from page 740)*

#### MEDICAL EDUCATION

MONDAY, MARCH 6—AFTERNOON

#### The Function of the Hospital in Medical Education

DR. C. P. HOWARD, Iowa City: It is self-evident that just as one requires a dissecting room for the teaching of anatomy, or a laboratory for the study of physiology, one must make use of the hospital beds for the teaching of the clinical branches. One of the greatest advances, if not the greatest advance, in medical education during the last twenty-five years is the widespread appreciation of the absolute necessity for the medical student to come into close personal contact with the patient instead of merely viewing him from the benches of an amphitheater and listening to the teacher's more or less stereotyped lecture two or three times a week. While this clinical lecture has still, no doubt, its place in the curriculum, it occupies a decreasingly less prominent one in most of the modern medical schools.

The system of the clerkship and dresser long since followed in the Scotch and English medical schools was amplified by Osler in 1891 in the Johns Hopkins Hospital, and his methods have been adopted in many other institutions since then. In this system we see the senior student engaged in practical work in medicine, surgery and the various specialties in a manner in every way analogous to the junior student in the dissecting room or the mammalian laboratory of physiology. He is learning for himself to unravel the history of the patient, learning to feel, see and hear the phenomena of disease, and to weave them into a complete clinical picture. Here he makes for himself the blood, sputum, stool and urine analyses, and assists at any of the special examinations, as the removal of test meals and the exploratory puncture of the chest or abdomen or meninges. He learns, too, his therapy and has an opportunity to watch the course of the disease from day to day, almost from hour to hour. I tell my students that I depend more on them than even my interns to give me the data necessary for the final diagnosis in a difficult case. Lastly, the medical student first acquires a certain self-reliance when still under direction and control, instead of waiting for it to be acquired when engaged in town or county practice several years later. He also unconsciously will imitate his teacher in gentleness, forbearance and courtesy in dealing with their suffering brethren. A medical school which cannot offer this opportunity to its students is not fulfilling its proper function.

The importance of civic hospitals in large centers of population has long been realized. Fortunate is the hospital

of this kind that has some affiliation with the medical school of its community. The less fortunate ones are encouraging their medical staff to offer postgraduate instruction.

The one danger that I see in the community hospital and group system idea has already been referred to by Dr. James B. Herrick in an address before this association. Another danger is the necessary use of more or less trained technicians as diagnostic aids.

We have not yet felt inclined to adopt the more elaborate scheme proposed by Dr. Hugh Cabot of the University of Michigan Medical School. Yet for several years two state laws have been in effect in Iowa which provide for the care of the indigent adults and children at the university hospital. These laws insure a mass of clinical material, on the one hand, and, on the other, offer expert help to the poor of the state. It has enabled the university hospital to expand its 125 beds of 1910 to 550 beds in 1922, without appreciably increasing the financial burden of the medical school and the university.

#### The Student Internship

DR. E. P. LYON, Minneapolis: In the last six months of their senior year, most of our students live at the affiliated hospitals, are part of the resident staffs of these hospitals, help do the work of the hospitals, and are responsible to the superintendents. They are taught by the university instructors who are on the staffs. They come to the medical school campus only twice a week for lectures. All the rest of the time they are at the hospitals. They learn by doing. The work is practical and individual.

When the matter of division of junior and senior classes was under consideration, we discussed the length of time the individual student, as part of his undergraduate course, might spend in residence in a hospital. We agreed that six months or two quarters were as much as could be spared from the eighteen months or six quarters of the clinical course. Moreover, a more frequent change of junior interns would be detrimental to the hospitals.

Half of the students from the close of the sophomore year proceed straight ahead for six quarters without any long vacation. There is a vacation of four weeks in September. The other half takes two vacations of three months each—the regular amount. The first division, therefore, gets six months ahead. Thus the filling of the student internship twice a year is rendered possible. It thus results that (a) about half of our students save six months on the medical course; (b) we graduate classes twice a year, i. e., in December and June, and (c) our hospitals are used for teaching twelve months of the year.

Our preliminary consideration also made plain that the contemplated student internship should be preceded by a clerkship of systematic and supervised character, in which the student should get some experience in the methods of examination, history writing, laboratory tests, etc. We settled on six months for this period.

In the last six months of the senior year the program calls for only six lectures a week, arranged on two afternoons. The rest of the work is elective. The student internship is the elective chosen by most of a class. We therefore speak of this time as the student internship period. Students at the end of the sophomore years may choose Division A or Division B of the junior class, subject only to a rule that students with deficiencies may not register with the advanced division. So far, Division A has averaged about thirty students, and Division B about forty.

A question of primary importance is the supervision of these students acting as interns. From the beginning we have given attention to the matter. One member of our faculty on each hospital staff has been made supervisor of student interns. It is his business to see that they are properly instructed and to examine critically the work to which they are assigned as to its educational value. All of these supervisors are "part-time" men. They are all interested in their work, but cannot give it such close attention as the full-time clinicians assigned to clerkship instruction give to that work.



The residents in the large municipal hospitals exercise direct supervision over student interns in their respective services. This is especially effective at the General Hospital, Minneapolis, where most of the residents are at the same time fellows in our graduate school. They therefore represent both the hospital and the university—an ideal arrangement.

One of the strong features of the plan is the increasing responsibility put upon the student as he progresses. As a beginning junior in dispensary or hospital clinics, he has no responsibility. As a clerk the student has some responsibility. The clerk's record in certain departments becomes the hospital record. As a student intern he has more responsibility; in fact, that indicated by the term junior intern, by which he is known in the municipal hospitals.

Of the 105 students educated under this system who answered my questionnaire, ninety-nine had the student internship, and six took other electives or research in place of it. All of the ninety-nine but three in the light of subsequent experience would again choose the student internship. One thinks he needed more didactic work and group clinics. One would prefer the more scientific atmosphere of a clinic and a well organized lecture course. One says, "A fourth year man needs more supervised work with instruction; gets plenty of practical work later anyway." Of the six who did not have a student internship, two wish they had. The others are well satisfied with the work in these cases, mostly research—which they took as a substitute.

#### Fifth Year Requirement as an Essential for Graduation

DR. L. S. SCHMITT, San Francisco: Since the adoption of the fifth year requirement by the University of Minnesota, which went into effect with the graduating class of 1915, nine existing medical schools have required an additional year, and ten states likewise make this an essential qualification to the practice of medicine. Five medical schools require either a hospital intern year or advanced work in a laboratory connected with the school. One school requires a hospital intern year or a year of laboratory work in connection with a clinical department. Two schools require an intern year in an approved hospital, and one school in a hospital without specifying whether it must be approved or accredited. Six states require the intern year to be taken in an approved or accredited hospital; two in a recognized hospital, and two require the intern year to be taken in an approved hospital with a rotating intern service, the standard being specified. The University of California Medical School adopted the fifth year requirement with the entering class of 1914-1915. It now permits the fifth year requirement to be fulfilled by a year in an approved hospital or laboratory, or by special work in a department of the medical school. The laboratory year may be taken at any time after the first half year, as well as after the completion of the fourth year, provided the student has creditably completed his required work in the subject in which he desires to fulfil his fifth year requirement. He must engage in work of advanced standing. It may be taken in any of the major departments of the medical school, or in the Hooper Foundation for Medical Research. In the latter he may receive a fellowship with the usual compensation.

The method of procedure is as follows: The student must first obtain the consent of the head of the department concerned or of the director of the Hooper Foundation in the latter case, and must be especially qualified to carry on the work he desires to pursue. He then registers in the dean's office as fulfilling the fifth year requirement. Before obtaining credit toward his medical degree for the work which he has accomplished, he must receive a passing grade from the head of the department concerned.

The student may also complete his fifth year requirement by an intern year in an approved hospital. The procedure in this instance is as follows: At the end of the first half of the fourth year, which in the University of California Medical School marks the completion of almost all the required curriculum, the student makes his application for an internship on blank forms prepared for that purpose. This form indicates the available internships, and contains also an agreement to accept the internship assigned to the student

and to remain throughout the period indicated. The assignment of internships is directly under the jurisdiction of the medical board, consisting of the dean of the medical school, the director of the university hospital, the heads of the four major clinical departments, and the head of the department of pathology.

The various hospitals to which interns are assigned, if not directly under the control of the medical school, must agree that each student shall be under the supervision of a member of the staff of the hospital; that the year's work must be under conditions approved by the medical board of the University of California Medical School; that the hospital shall at all times conform to the requirements of the Council on Medical Education and Hospitals of the American Medical Association, and that reports shall be sent to the dean's office quarterly and with each change of service. These reports must be on forms supplied for that purpose, and must indicate the professional service in which the student is engaged, the period for which the report is made, the member of the staff to whom the student intern is responsible, and remarks concerning the nature of his professional service.

Before the fifth year was required, 90 per cent. of the students of the University of California Medical School voluntarily took a hospital year, and those who did not needed it most. Since the fifth year has been required, 47 per cent. of the graduates who fulfilled the requirement by taking a hospital year have continued their connection with a medical school or hospital for a year or more after graduation. The legal difficulty in the way of requiring a hospital year, referred to by Dodson (*THE JOURNAL*, Aug. 16, 1919, p. 469), can easily be overcome with the cooperation of our colleagues on the various state examining boards.

#### Experiences at the University of Minnesota with the Requirement of the Intern Year as a Prerequisite for the Degree of Doctor of Medicine

DR. JENNINGS C. LITZENBERG, Minneapolis: Students felt that if we require them to take the extra year, we should furnish internships. The students had previously always secured their own internships. A committee on interns, called the seventh year committee, which had been appointed by the dean, immediately set about securing as many internships as possible. They succeeded in securing 50 per cent. more places than there were graduates. From that time on we have had no difficulty whatever in securing desirable internships for our graduates.

Each student is required to take his seventh year in a hospital approved by the seventh year committee. The hospital must have more than 100 beds, must have a well conducted clinical laboratory with a trained pathologist, a roentgen-ray department conducted by a trained roentgenologist, and an organized staff of highly trained men. Every intern is required to register as a student in the University of Minnesota for his seventh year, giving the name of the hospital where he is to serve this time. We will not let our students go to any hospital which does not agree to furnish them with high grade clinical instruction.

When we send an intern to a hospital for the first time, we take great pains to explain to the superintendent what are our ideas of a good internship under this plan. We explain that we do not consider the old style internship as meeting our requirements. We not only expect the men to be given every opportunity for clinical experience, but also expect the staff members to go out of their way to give the interns proper clinical teaching.

We have experienced the most whole-hearted cooperation from superintendents and staff members in giving the students the best possible clinical instruction. Not only are the interns invited to attend the scientific meetings of the staff, but individual members put forth greater effort along this line than they have ever done before.

We believe that the scholarship in the medical school itself is improved under this plan, because the students know that they must have a high grade of scholarship to have a chance to secure internships in the better hospitals. Students have told the committee that this has been a great incentive to better medical school work.



## DISCUSSION

DR. JOHN M. DODSON, Chicago: There can be no question as to the value of all medical students taking a year of supervised practice in a hospital before entering on independent practice. Every student should have the internship except those that are planning lives of teaching and investigation, and it is a question whether many of these would not be better off with a year of hospital service. In those states which now require internships, the laws or regulations of the boards should be so modified as to permit the substitution of a year of advanced research work in one of the departments for those students who elect to go into a life of that sort; otherwise we shall cut off seriously the supply of men for teaching the fundamental branches. It is getting almost impossible to secure men who will continue in teaching of anatomy, physiology and the like. The question, therefore, is, How shall this internship year be administered? Shall we leave it as it was in former years to the hospital itself? This would aid a great deal if all hospitals were as well conducted and eager about this matter as are a few of them. One of the principal advantages and purposes of this method is to secure greater uniformity of opportunity for interns to get service in several hospitals. To do this, somebody besides the hospital must supervise this year, and two possibilities are open. Shall it be supervised by the state boards of medical examiners in those states in which the intern year is required for licensure? All are agreed that this is not properly the function of the state board of licensure. They are not medical educators primarily; they are not in touch with the hospitals. If it is to be supervised at all, it must be supervised by the faculties of the schools from which the young men and young women came. And so we decided as long ago as 1905 in Rush Medical College to make the internship year a requirement for graduation. It was first offered as an optional year, with the intention of making it compulsory in the future. The first class to take the fifth year was the class of 1918. The regulations drawn up for the control of the intern under the direction of the hospital and specifying the duties of the faculty as long ago as 1905 have remained substantially unchanged from that time. We have now had experience of four years with the intern year. Our plan of administering it differs materially from that in operation by Minnesota and California. The students of the senior class find their own hospitals, and we believe very strongly that this is a much better plan.

As to the approval of hospitals, we have found the list of the Council on Medical Education and Hospitals of the American Medical Association very helpful, but we are securing in our school a volume of information of a quite different type that can be secured in no other way, and that is, the testimony of the interns themselves. We ask each intern after he has served a year in an institution outside the city to write his impressions of that hospital, not so much about its equipment, its laboratory facilities and all that, but his impressions of the staff. Do they supervise and direct his work carefully? What criticism has he to offer? This letter goes into the files of each hospital in a folder of its own, and future students seeking internships have free access to these files. They can find out just exactly what their predecessors from Rush Medical College found to be true of these hospitals, and with very rare exceptions the testimony of the students received in that way is taken at its face value and as evidence of good faith and good judgment.

DR. ARTHUR DEAN BEVAN, Chicago: I am thoroughly converted to the importance of the intern year requirement, and feel that it is the next step that should be generally adopted by all our better medical schools.

DR. FRANK BILLINGS, Chicago: The proposition that Dr. Lyon presents as having been put into practical operation in the University of Minnesota Medical School has interested me very much, because last summer, as the member of a committee making a survey of conditions there, I had an opportunity to see something of its workings. The students themselves in the General Hospital at Minneapolis

reported that they liked the work; that they had assigned to them certain patients; that they were obliged to work out the examination of a patient physically as well as to do the laboratory work. It is not an innovation; it simply carries over the clerkship of the junior year into the senior year, with a longer residence in the hospital. There is nothing offered in medical education that is better than the clerkship. The difficulty lies in the clerkship during the junior and senior years. The curriculum is so crowded that it gives no opportunity for the clerk to work in wards. He does not have more than one or two hours available any day in the week in which he can go into the wards. We have so crowded our curriculum with lectures and clinics that there is no available time left for the clerk in the wards.

If we give the right kind of education for four years during which the student is taught to use his brains, his hands, and how to handle the instruments necessary in diagnosis and in treatment, then the internship is of the greatest value to him, and it is an essential part of medical education.

DR. GEORGE M. KOBER, Washington, D. C.: From the papers and discussions, I think we may assume the conclusion is inevitable that as long as internships are desirable, they ought to be taken before graduates become doctors of medicine. I am a thorough convert to the belief that it is extremely desirable that no man shall receive the degree of Doctor of Medicine until after the completion of an internship.

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: I take it that no one questions the great advantage of the hospital year to the young medical graduate. There is only one thing that I have been concerned with, and that is the length of time and the age that our young men are being turned out to practice medicine in this country. We must give some thought to the fact that, with our premedical two years, our four years, and then internship, many of our men are from 27 to 29 years of age before they begin the duties and responsibilities of practice. How to shorten the time and get these young men into professional work earlier is an important thing which must be considered by the educators of this country and by the Council on Medical Education and Hospitals.

In regard to undergraduates, during the war we had exactly the state of things Dr. Lyon has described. Necessity forced us to put senior students and even junior students into hospitals. We had no interns. Many times during the epidemic of influenza in Nashville, when we had great government works there, with 60,000 employees, 150 men were dying daily, and we had to send out students as nurses to help these people out. That kind of thing led us into furnishing undergraduates for hospitals which we have had to keep up ever since.

DR. I. D. METZGER, Pittsburgh: I have been interested in getting the reaction of the college men on intern training, and, representing the State Board of Pennsylvania, which has had experience for eight years in intern training as a requirement before the applicant may take the examinations, I wish to relate briefly my experience. As Pennsylvania insists on a man's having had his full medical training before he enters on internship, I cannot therefore look kindly on the plan submitted by the University of Minnesota. Knowing, as we do, the type of intern training and the undergraduate training that is received in the hospitals, we cannot think that that training is equal to the training given by the regular undergraduate work in a college. We think that one year of intensive work under supervision in a hospital is of great benefit to every intern. The state authorities should have control of the hospitals, and the hospitals should be responsible to the state authorities. If the state says an internship shall be required, the state has a right to demand the type of internship given and has a right to supervise the hospitals of the state.

DR. T. J. CROWE, Dallas, Texas: State boards are operating under statutory qualifications. According to the Minnesota plan, if a man is graduated in three years with the degree of M.D., he would not fulfil the statutory requirements of many states that require four full years.



TUESDAY, MARCH 7—MORNING

**Professors and Clinical Professors of Clinical Subjects**

DR. CHARLES P. EMERSON, Indianapolis: My plea today is for a better appreciation of the clinical years of the medical course, and the questions I would ask are: Should these really be clinical years, and, if so, what are the considerations which should direct us in our choice of the heads of our clinical departments?

What are the proper qualifications for a real clinical professor? First, a thorough training in the premedical and preclinical sciences and a proved ability as a laboratory research worker in at least one of these scientific fields. The laboratory is the lever which has pushed medicine forward and which must continue to push it forward. If it were to stop pushing, then medicine would become again empiricism and formalism. Each student should do some research work since each of his future patients will in some degree be a research problem and only the man with the research type of mind will recognize the individual needs of his cases. But are intellectual brilliancy and proved research ability, essential though they are, enough? They may be enough for a professor but not for a clinical professor. The art of medicine also is necessary. This is possessed by some, but not by all, as a natural endowment which can be developed by experience. This it is which the students look for in their clinical professors.

But there is a third quality which the professor may not need, but which is just as necessary to the clinical professor as are the foregoing two and possibly just a little more so. I refer to that sympathy for the sick patient, that love of fellow man which originally prompts him to dedicate all his powers to this profession, whatever the remuneration may be.

Some preclinical teachers would seem to believe that clinical medicine is merely the application at the bedside of the preclinical sciences, and that the student who has mastered these sciences actually has already covered a definite and a considerable portion of the field of medicine. The same teachers, however, demand as preparation for their preclinical courses considerable premedical science, but they certainly refuse to grant that these overlap. On the other hand, I would maintain that while the man well trained in the preclinical sciences can gain for himself a much wider and firmer grasp of clinical medicine, yet there is no real overlapping of these two fields. Others would appear to be even more radical than these and to consider ward work as lower in grade than laboratory work; that it is a distinct step downward. We have even heard them say in effect, "Do your laboratory work well for six years and you can get all the clinical side of medicine worth having in six months."

It has been affirmed by older men in medicine that their young assistants and hospital interns show a definite lack of sympathetic interest in their patients; that they are rather cold blooded propositions in their early practice. Of course, some may protest that "even if this is true the schools are not to blame." But if it is true should we not make carefully planned efforts to counteract it?

Finally, is it not probable that the relatively strong emphasis laid during school days on laboratory tests and research work, and the relatively little emphasis laid on careful ward work explain in part at least the flood of vaccines, serums, nonspecific proteins, internal secretions, vitamins and dried organs with which manufacturing plants have deluged this country? Our indifference to this evil and, much more, the amount of such stuff which our recent graduates certainly prescribe are to my mind sufficient evidence that our medical schools need fewer "professors" and more "clinical professors" who consider the wards as the most sacred ground on which the medical student can tread.

**DISCUSSION**

DR. ALEXANDER PRIMROSE, Toronto: A scheme which we have inaugurated in the University of Toronto, which has been in operation in the Department of Medicine for three years, and more recently instituted in the Department of

Surgery, briefly is this: Looking forward to the training of men for clinical teaching, we put before the junior men general practice or the practice of a specialty, and recognize that their destiny is practice and not teaching, the object being that when a man gets into practice he will be available for a position on the university staff as a clinical teacher. We have men trained who will proceed to a higher degree in medicine. They will be capable of taking examinations for that higher degree three years after graduation. Let us suppose that a man who has the requirements proceeds immediately after graduation in the ordinary routine of hospital service as a junior intern. He rotates between the services. There is nothing peculiar about that particular year. After that year, however, he will be qualified as an ordinary resident. We have examined three men of this type at one time in medicine, gynecology and obstetrics, and surgery. A man not qualified as a senior resident must take one year in a laboratory designated for the purpose and approved by the instructors. It may be pathology, bacteriology or biochemistry. He must have one year of intensive training during which he is doing research work. He is then eligible for a position as senior intern. In addition to his hospital appointment as senior intern, he is a fellow in his department in the university, and receives a salary of a thousand dollars a year. This man is eligible at the end of three years for postgraduate work, to take a higher degree in medicine, such as master in surgery. After that we have not done with such a man. We are still looking forward to the training of men getting into practice, doing clinical work, who are eligible for the university hospital when they are not capable of supporting themselves. We appoint such men and give them \$2,500 a year as full time men in the wards. They are allowed to do a certain amount of private practice. A man in surgery, for instance, can do private practice. In the first year he is trained so that during that time he has facilities in the hospital and laboratories to do research work. The object is to train these men in specialties more particularly. In the meantime, we have provided training for such men in medicine, surgery, gynecology and obstetrics. Our opinion of such a scheme is that it will in the future give us our hospital staffs composed of men who have had the requisite training along the line Dean Emerson has suggested.

**Introduction of Public Health Information Into the Undergraduate Medical Curriculum**

DR. HANS ZINSSER, New York: The protection of the public health is a cooperative task. A fully developed organization for the control of public health requires the collaboration of administrators, statisticians, economists, engineers, lawyers and specialists in the various laboratory sciences and clinical branches of medicine. That there has been an increasing demand for highly trained specialists in public health has already been fully recognized, and the need is being answered by the splendid foundation for schools of public health started in recent years, especially at Johns Hopkins and at Harvard. The movement for the training of such men and women is being fostered by federal and municipal agencies, by lay organizations and by industrial interests. In the education of such specialists it is generally admitted, particularly by such leaders as Whipple, Welch, Edsall and others, that preliminary medical training is necessary for those who wish to submit themselves to the most complete discipline for this profession. However successful in its effect on general public health movements the education of such leaders and specialists may be, the fact still remains that the entire structure of organization for the purposes of preventive measures must remain ineffective unless the practicing medical profession is entirely alert to its cooperative obligations and capable, by training, of meeting them.

It will probably be found necessary for the complete accomplishment of a public health program in the medical curriculum to require attendance at a lecture course of not more than twenty or thirty lectures on public health administrative problems, social service, quarantine and kindred subjects, in which the relationship of the practicing physician to existing public health organizations may be presented.



To fulfil the functions which we have indicated, it is not necessary for the physician to be a trained public health administrator, statistician or epidemiologist. He must understand the purposes and parts of health department organization and know the functions of the ramifications of the various public health agencies so that he may properly comprehend all the possible opportunities for cooperation on the part of the physician, the reasons for their existence, and their legal and sociological aspects. Apart from a relatively small amount of time devoted to these purely public health matters, practically all the rest of his public health education may be dealt with as a part of the courses already prescribed for him as a student of medicine. Indeed, the purposes which we have in mind will be best served by such a treatment of the material, rather than by a separation of aspects of prevention from the etiologic, diagnostic or therapeutic discussions of any branch of medicine. To some extent this implies a reeducation of medical teachers.

There is no course given in a modern medical school in which the facts presented are not in some way important in their bearing on prevention. This is less the case in such subjects as the purely morphologic ones than it is in subjects like physiology, bacteriology and the clinical subjects. In all of them this element exists, and in all of them the preventive side can be so coordinated with other aspects of the problem that it will never again be separated in the student's mind from the problem as a whole. In a reorganization of the medical curriculum, I would earnestly urge that not only the matter of redistributing time and actual material taught be taken into serious consideration, but also in every subject the teaching staff attempt to include preventive considerations as a definite obligation in their teaching. In our own school we have been permitted to coordinate the teaching of immunology with bacteriology, and in a short course of coordinating lectures to point out the bearing of the facts derived from these two disciplines on preventive measures.

In medicine, apart from the obvious discussions of prevention and etiology already included in the instruction of many of the schools, the basic principles of social service and public health nursing can be included in the dispensary work. Isolation, quarantine and much epidemiologic information, as well as the organization of hospitals for infectious diseases can be dealt with in the teaching of these conditions. In this particular case most of our medical schools are considerably short of actual hours spent in the instruction of the diagnosis of infectious diseases; for it is perhaps in the rapid diagnosis and in the first measures of isolation taken by the physician who first sees the patient that we find the most obvious and serious defect of cooperation of the physician with public health organizations.

In the reorganization of the medical curriculum, it is not so much an alteration of the material taught as a modification of the point of view, a fostering of a habit of mind which will induce the teacher, and consequently his pupil, to scrutinize the ultimate cause of the illness, to trace it to the defects of habit, misfortune, crowding, poverty, etc., from which it springs, and contribute his share to its correction, so that others in the particular little group for which he is responsible may not suffer in the same way. Thereby he becomes a public health officer.

If this principle has once been grasped, it will gradually lead to a rewriting of textbooks of the medical sciences. In writing general treatises on bacteriology for medical readers, it has been our own experience that the pressure of logic has forced a gradual inclusion of some clinical and much sanitary information. The same thing should be true of all other branches, except perhaps the purely descriptive books of anatomy and of technic. It is only another phase of the general awakening of a sense of community responsibility which has changed the point of view of other professions which is leading all thinking men and women to look about them for opportunities to increase their powers of helping their fellows.

DR. ALEXANDER C. ABBOTT, Philadelphia: I endorse heartily the argument that Dr. Zinsser has made in favor of the development of a mental attitude. I would not for a moment put anything in the way of advancement of our knowledge about investigation in this field, but I unhesitatingly say that

if the medical profession as represented by the group of men in this hall now, were faithfully to employ in their everyday work the knowledge that we now possess, we should in a short time make surprising advances in public health that are not being made at this moment.

DR. DAVID L. EDSALL, Boston: I would not in any way belittle diagnosis. In the teaching of medicine and the various clinical branches in medicine we have in a sense exalted diagnosis. Diagnosis has a purpose, but we frequently stop, and the whole teaching of medicine stops largely at diagnosis. There is one thing that is far more difficult and far more important than diagnosis, and that is etiology. If you know the etiology of a condition, you know very much more what to do with the case. If the main purpose of medicine is really the alleviation or cure or prevention of disease, there can be no question that in the teaching of medicine there is still maintained almost solely the whole attitude of individual medicine without regard to the community. All intelligent physicians know that is not medicine at the present time. The teaching of medicine has not kept pace with the actual knowledge that medical men have as teachers or otherwise. For a long time I have been impressed with the fact that in the teaching of clinical medicine and clinical branches there are two things which are the end and aim of medicine which are the least attended to. One of them is the actual treatment of disease, for where we have the usual medical curriculum the treatment of disease, as well as the clinical branches, receives far less attention than any other subject, because it gets crowded out, and the other is the prevention of disease.

DR. JOHN A. FERRELL, New York: It remains to be seen whether or not the medical profession is going to retain the leadership that it has exercised heretofore in the field of preventive medicine; it should retain this leadership, but where there is leadership there is responsibility. Our health boards, state municipalities, etc., are largely composed of medical men, and in considering measures with respect to public health and the selection of public health workers who are competent, the physician is entrusted with the responsibility which he should be capable of discharging. Moreover, in the past, the public health work of the country was for the most part carried on by physicians who gave only incidental attention to public health work; and, as the importance of this work gradually grew, they gave up the practice of medicine and became the health officers of today. The measuring rod of progress in the field of public health is the morbidity and mortality statistics. If these are not carefully collected and reported by physicians, we cannot determine from our conclusions whether or not we are making progress that is trustworthy. The physician, then, has a real responsibility in the field of public health if he is to retain that responsibility, and should be prepared to exercise that leadership; and if he is not taught the elementary principles of hygiene and public health in the medical schools, he is not going to be fit for that responsibility.

DR. JOHN M. DODSON, Chicago: In line with what Dr. Emerson has said, we need to emphasize to students constantly what he has stated and select students with character who will realize that the medical profession is a profession of service. If it is not that, it is nothing, and that service means prevention wherein the largest possibilities lie. Without the cooperation of every physician in the community in reporting disease, in assisting in the prevention of disease, the public health officer is practically helpless. I should like to stress also the importance of the physician as a personal hygiene instructor and individual. After all, these are two great divisions of community hygiene, which means those things which the community does for its people, and personal hygiene in which the larger possibilities lie in the direction of teaching the individual how to live and what to eat, correcting his bad habits; and I believe that we shall come to the time when the family physician will be, for the most part, the family health officer, and his main business will be to see that his families are kept well. We are making more progress along that line than we sometimes realize.



DR. GEORGE M. KOBER, Washington, D. C.: Hygiene is not an independent science, but it is the application of bacteriology, epidemiology, physiology, sanitary chemistry, sociology and many other factors. There is unquestionably a distinct gain to be had when professors of bacteriology take up parasitology and emphasize the etiology of diseases as well as their prevention and their cure; thus at an early stage in medical education interest and enthusiasm will be stimulated in preventive medicine.

DR. JOHN G. FITZGERALD, Toronto: We have made a definite provision in the medical curriculum for medical students to get an insight into the work of the health department. After they have received a course of didactic instruction and a certain number of demonstrations, they are divided into groups in our six years' course and assigned to health departments. In that way we feel that they actually get an insight into the work of these departments which they could obtain in no other way.

#### Teaching Facilities: Report of Committee on Equipment

DR. J. T. MCCLINTOCK, Iowa City: From the standpoint of medical education for the undergraduate, the teaching facilities must be of such a character as to make it possible to carry out the established curriculum in the most practical and advantageous manner. The facilities should be such as are helpful in impressing on the mind of the student the things he should know, to provide means for teaching the necessary technic. Yet they should be of such a character as to conserve the student's time so far as possible by relieving him of unnecessary routine and permit of greater attention to the essentials.

The rapid growth of the medical sciences has overwhelmed the teacher with a mass of information which appears to him as necessary for the student to obtain. Yet, it is generally recognized that the aim of proper teaching not only is the impartation of information, but also that it must encourage and develop so far as possible in the student the qualities of originality, initiative and resourcefulness, together with his power of observation and interpretation. What seems to be needed, therefore, is a more careful selection of the facts which are necessary for the student to acquire and the alteration of old and the introduction of new methods which will encourage and develop those qualities which, if gained, will insure the student's independent growth in medical knowledge.

Interwoven with the curriculum as a factor in determining the teaching facilities is the adequacy of the teaching staff. While it stands to reason that a certain amount of knowledge must be acquired by the student, the method of imparting this information in an acquirable form will depend on the ideas, the resourcefulness, and the experience of the instructors in charge. Few methods can be said to be universally successful. The facilities and equipment must vary in detail, and a standard which does not permit of sufficient variation to allow for reasonable changes in teaching methods is detrimental rather than helpful.

Having once determined on what the proper teaching facilities should be, then the liberality of the financial support will largely determine the extent to which the standard set will be reached or excelled.

A more vital problem than mere expense now lies in the complete duplication of fundamental laboratories in the clinical departments. In the laboratory branches lies most of the science of medicine, while in the clinical years is the art of medicine. Most of the advances made in recent progress have been based on and are the results of the investigations carried on in the sciences of medicine. This being the case, it may be quite natural for the clinical departments to desire to have attached, under their direct supervision, complete laboratories. It has been strongly recommended that the laboratory departments teach their subjects from the standpoint of pure science. To such an extent has the introduction of laboratories gone—the working laboratory of the hospital is not here considered—that it is not uncommon to find clinical departments in the same institution each having its own fully equipped chemical, biophysical, bacteriologic and pathologic laboratory, each in charge of

trained laboratory specialists. It only requires a little enlargement and expansion to handle the preclinical course in each one of the several departments.

#### DISCUSSION

DR. HENRY PAGE, Cincinnati: Just as we have found out in medicine that the cause of disease is often, if not usually, the result of human contacts, so we may find in methods of cure of disease in the same human contact the best method of approach to the questions under discussion. The remedy for most of the troubles we have been speaking of today can be approached from the point of view of the late Viscount Bryce, who said that there is no human problem that cannot be solved if we get closer together. In college education, if we carry that principle deeper, we may find the answer to some of the questions we have been trying to solve in this meeting. The loss of contact between physiology, chemistry, anatomy and the clinical subjects can be solved by getting a closer human contact between these departments.

TUESDAY, MARCH 7—AFTERNOON

#### The Cost of Medical Education to the Student

DR. IRVING S. CUTTER, Omaha: Figures are available as to the cost of medical education from the standpoint of the medical school, and constitute a part of the records of the Council on Medical Education of the American Medical Association. A questionnaire was devised which was mailed to all students in each of the four medical years of the Universities of Indiana, Iowa, Maryland, Michigan, Nebraska and Virginia, the Medical College of Virginia and Syracuse University. This questionnaire was printed, a stamped addressed envelop enclosed, and the student urged to supply reliable and accurate data, consulting the source of his funds and checking back through check stubs, etc., in the event that he had kept no accurate account of expenditures. Rosters of the several medical schools covered were obtained through the courtesy of the Council on Medical Education. The schools selected covered a fairly wide range as to type. Of the state universities, Virginia, Iowa and Michigan have located the medical school at the seat of the university and in towns of small size. Syracuse was selected as representative of a middle state institution outside New York City. The Medical College of Virginia, located in Richmond, a city of 171,000, was selected as affording comparison with the University of Virginia, located in Charlottesville. Between 50 and 60 per cent. of the questionnaires were returned. In no case were less than 40 per cent. returned, and this only from one school. The compilation, therefore, is based on more than half the total enrolment for the session of 1920-1921 of the eight schools named. Schools in New York City, Boston, Philadelphia and Chicago were purposely omitted from the list, as it is the intention to group these schools at another date in a separate compilation.

Much care was evidenced throughout on the part of the individual student in completing the questionnaire. In many instances, supplementary remarks were made by parents or guardians, and slight discrepancies in the student's estimate corrected. In some instances the questionnaire was filled out entirely by parents to whom the blank had been forwarded by the student addressed. Approximately one third of those replying requested that they be notified as to the results of the study.

Averages of totals from the several schools show surprising uniformity, although between the highest average—Michigan \$1,027.77—and the lowest average—the University of Indiana at \$787.93—there is considerable "spread." The high annual average of Michigan is due to higher averages for table board, textbooks, instruments and recreation. The low annual average of Indiana is accounted for by a lower outlay in the items of recreation, clothing, lodging, etc., in spite of the fact that table board is higher in Indiana than in three other schools. Wherever totals were found to fall much below the general average for a given school, usually some expense abatement will be noted, such as living with parents or relatives where no charge is made for board or room,



or serving as undergraduate intern, hospital orderly, hospital druggist, etc. In such instances the totals fail to include the items of board and lodging. When the students live at home, the total is more than \$200 lower than the average for the school in question.

One of the most interesting sidelights on the cost of medical education is the comparatively large number of students who are earning nearly one third of their total annual expense. In three schools, Syracuse, Nebraska and Indiana, more than 60 per cent. of the students replying to the questionnaire earn something during each medical year. The general average shows what 45 per cent. of all students replying from all schools are earning. The average earnings a year of all working students is \$268.84, or approximately \$30 for each of the nine months. This \$268 constitutes 30 per cent. of the student's total expense. In other words, a little more than 40 per cent. of all students replying earn nearly one third of the total annual expense. It would seem that the larger cities afford numerous opportunities for student employment, although working students in the University of Maryland average only 25 per cent. Some schools discourage and even forbid outside employment on the part of freshmen medical students.

As a rule, the junior medical year is the most expensive. This is true of Iowa, Maryland, Michigan, Nebraska, Syracuse, and the Medical College of Virginia, while at the University of Virginia the sophomore year, and at the University of Indiana the freshman year show peak costs. One should keep in mind the fact that the estimates are for the year 1920-1921, when costs of table board, lodging and clothing were probably on a higher level than at this date. There has been a general reduction this year in these three items of from 15 to 20 per cent. under the figures of 1920-1921. This general lower level undoubtedly prevails over the country, and questionnaires sent out at this time would show comparative results. The item of medical fees is bound to increase rather than decrease.

On the whole, the study would appear to be worth while from several points of view: The figures returned show every evidence of care on the part of the student as to accuracy. The variation in the group of schools chosen demonstrates that students may spend much less than they usually regard essential. The number of students who are earning at least a part of their yearly expense appears to be larger than one might reasonably expect, and the amounts earned average for all students employed \$30 a month. Students contemplating the study of medicine are offered the experience of approximately a thousand students. The general average obtained represents in all probability the annual expense of a normal college student who gets the most out of college life—professional, cultural and social.

#### Liberalization in Medical Education

DR. A. C. EYLESHYMER, Chicago: The products of medical schools may be considered as belonging to three principal groups: the practitioners, the investigators and the teachers. A survey of the medical profession at large shows that its eminent men usually may be placed in one or the other of these groups; sometimes in two, but rarely in three. The group of practitioners comprises those whose primary interests are in the alleviation and cure of disease. The group of investigators includes those whose deepest interests are in the causation and prevention of disease. The group of teachers contains those whose principal aims are the dissemination of the methods adopted and the results achieved by the practitioners and the investigators. Lister, Pasteur and Osler typify the groups.

A few decades ago, the country demanded and the schools furnished, for the most part, but one type of practitioner, and that type was the all around practitioner. He was obliged to know something of medicine, surgery and obstetrics, together with dentistry and pharmacy. In addition to these, he was expected to show proficiency as a veterinarian. The conditions of today are so different that the all around practitioner of today would have been a specialist fifty years ago.

The ambitious young physician of today who contemplates a career as a specialist dispenses with this hibernating period and seeks, instead, the live atmosphere of the hospital, an assistantship to the master, or a fellowship in some of our great foundations. The rural districts and small towns will be obliged to adopt something of the same methods that they long ago adopted in securing churches, schools and factories; they will be obliged to build and equip hospitals if they hope to obtain modern medical service. With the hospital comes the staff which, in turn, forms the basis of the group clinic. Instead of the general practitioner making a complete diagnosis, there is a group of collaborating clinicians, each of whom is an expert in his particular field. The rapid development of the group clinic is creating a situation which must be recognized by both the profession and the schools.

Each patient presents a problem, the solution of which is more difficult than that in almost any other field of science. While every medical problem must be approached through the avenues of physics, chemistry or biology, the physician is often baffled at the very beginning of his work by the fact that he is unable to determine which will aid him most. Often he finds that no one of these sciences will solve the problem but that all are involved. Physics may explain the mechanism of joints and muscles; it may aid us in the interpretation of the effects of light, heat, electricity, osmosis, pressure, etc., on living tissues; but it does not explain nerve impulse, sensation, memory or thought. Chemistry may teach us the rates of protein, carbohydrate and fat metabolism in health and disease; it may help us to know more of the precious vitamins and hormones, but it does not tell us why one child resembles the father or mother, physically and mentally, while another child does not. Biology may aid us in solving this problem; but she, too, is extremely jealous of her secrets. She readily acknowledges that the process of fertilization is essentially the same throughout the animal kingdom, but she teaches us that the processes of regeneration are entirely different in different forms, and cautions us not to infer that a new leg will grow out from the stump of an amputated one in man, as it does in some of the lower animals. She teaches that the organs of seeing, of hearing, of smelling, of tasting, of feeling, are the organs through which these sensations habitually are received. But she warns us not to infer that the loss of one of these special sense organs means an entire loss of that special sense.

One of the greatest needs in our medical schools of today is the encouragement of students to devote their lives to the study of the causation and prevention of disease. It becomes more and more apparent, as set forth last year by the committee on graduate work, that the medical schools must give opportunity and encouragement for men to develop as research workers. We need no longer argue that reproductive scholarship must be supplemented by productive scholarship. We accept the established fact that the investigative spirit must pervade the atmosphere of the medical school.

How far we can organize research is a question. There is no doubt that to some extent we can create the investigative spirit. At any rate, we can help the young man who evinces this spirit; we can give him time; furnish him with apparatus and books; point the way to fields of investigation; discuss his problems, and help him in his experiments. We cannot dominate him or restrain him. We cannot force him to work independently or in cooperation; this must depend on his bent, his personality, his individuality—genius cannot be organized.

Those of us who come in contact with these men as they enter upon the study of medicine are impressed by their differences in concept, habit and training. He who comes from the land of mighty oceans, forests and mountains thinks in larger terms than he who comes from the truck farm. The boy who is reared in the highly commercialized districts of a great city regards an education in quite a different light from the one who is reared in a college or university town.

The method of the medical school is the curriculum; around it centers, to a large extent, the resources of the school, and through it are expressed the principles and concept of medical education. The fixed curriculum of half



a century ago will not meet the conditions of today, yet, in principle, it has remained unchanged. Our national organizations dealing with medical education have recognized and emphasized the need of a more liberal curriculum, but have not adopted measures that materially assist the medical school in the development of such a curriculum. The fixed curriculum is so deeply rooted, so widely spread and so thoroughly fostered by standardizing bodies and educational institutions that state examining boards are rapidly adopting or creating such curriculums as the basis for medical licensure.

The day is not far distant when the schools must either incorporate in their curriculums the particular requirements of each state board curriculum or find that their graduates are not qualified to practice in these states. To incorporate these requirements means an enormous time expansion, and this is impossible. The one obvious solution is the creation of an elastic curriculum. Beyond the adjustment of the curriculum to meet these perplexities, it must be adjustable to instructional and clinical resources. It must anticipate the ever changing conditions in the growth of medical science, and above all, it must provide for collective teaching, cooperative study and individual study.

The spirit of cooperation between faculty and students in medical training is one of greatest value. To develop this spirit, we should determine as far as possible the special assets of each student at the time he enters the medical school, and ever keep in mind his adaptability for certain kinds of work. Much can be learned through contact afforded by laboratory work and through the seminar. This should be supplemented by a knowledge of his home life, his living conditions, his social habits, etc. Let us give the student opportunity and encouragement to seek truth wherever it can be found. In bringing truths together he not only builds for himself but also increases the common fund of useful knowledge. Beyond and above these and all unknown to him, he helps to build a great fund of knowledge which will illuminate life in the years to come.

#### DISCUSSION

DR. GEORGE M. KOBER, Washington, D. C.: In our earlier studies of the curriculums of different medical schools, we found some of the best schools were particularly strong in the laboratory branches but woefully deficient in the clinical branches. We had every reason to assume that this depended either on the character of the teacher or on the amount of time and emphasis placed on these studies, and we concluded that there was really need to establish certain minimum requirements, so that the average student could devote so many hours to the study of various departments in proportion to their relative importance. Our object is to produce educated general practitioners capable of recognizing disease and well trained in methods to effect a cure.

DR. WILLIAM KEILLER, Galveston, Texas: If you are teaching medicine from the point of view of the anatomist and the pathologist and biochemist, you must say to your students, You have learned anatomy, pathology and biochemistry, and now you must apply this knowledge to the clinical case. What is applied anatomy? There is no anatomy that is not applied anatomy. There is no pathology that is not applied pathology. We are not teaching students to become specialists, for 75 per cent. of the men we are teaching are going to become general practitioners, and they ought to have a general view of the whole subject.

DR. W. F. R. PHILLIPS, Charleston, S. C.: Our curriculum at present comprises approximately 3,600 hours expressed in percentages, and it permits of variation in any of the subjects to suit the individual teacher. Our curriculum today is our measuring rod, and we cannot determine the qualifications of individuals unless we have fixed data to go on.

DR. E. C. L. MILLER, Richmond, Va.: Our medical students come to what they are going to be largely in spite of our training, and it does not make so much difference what they get from us in the way of facts as it is that they get the right spirit. If they get the spirit of being students and carry that spirit when they get into their work, so that they

may study anatomy, physiology, etc., the rest of their lives and not feel they have finished their education after graduation, we will turn out students that will go on indefinitely, and the details we give them in the class room are relatively unimportant.

WEDNESDAY, MARCH 8—MORNING

## MEDICAL EXAMINATIONS AND LICENSURE

### Drifting

DR. DAVID A. STRICKLER, Denver: Following the plan of previous years, we sent a questionnaire to the chief executive officer of every state board of medical licensure in the United States, irrespective of whether or not members of the federation. The purpose at this time was to make a study of conditions of licensure of drugless practitioners of the healing art. The following questions were asked:

1. (a) What are the essential features of licensure in your state? Single, duplicate or multiple boards? (b) What limitation, if any, in what they may do under their license? (c) What success do you have in their prosecution? (d) How rapidly do they increase? (e) Is there any present effort on their part to change the law?

2. What, in a few words, is your suggestion of the best practical means of maintaining a high standard of licensure which may be made applicable to all?

3. What do you suggest as an appropriate subject for discussion at our meeting in Chicago?

I shall not at this time attempt to analyze in detail the answers to these questions, but there are certain facts so generally recognized by all men of experience in administering medical practice acts or in efforts to establish adequate educational standards for licensure that I deem them worthy of serious consideration by this body, and I now present them in the hope that some plans may be evolved to correct a very unfortunate condition.

New York, with a single examining board, requires osteopaths to pass the same examination required of candidates for medical licensure, but they are not permitted to give drugs or perform surgery with instruments. In answer to Question 1 (c) What success do you have in their (the drugless healers') prosecution? Answer: "None at all." (d) How rapidly do they increase? Answer: "As rapidly as English sparrows or rabbits or any other pest." (e) "Yes, the chiropractors are continually demanding a law which will give them a legal status and a board of their own."

Pennsylvania answers these questions:

1. (a) A single board composed of medical men with drugless therapy under supervision. (b) Drugless healers limited—not permitted to do surgery or give drugs. (c) Prosecutions difficult. Jurors hard to manage. Illegal practitioners fear law very slightly. (d) Apparently increasing very rapidly, but few apply for license probably because they cannot qualify under the law.

These two great states, having single boards of licensure with standards quite up to the average, tell the story of nearly all states having single boards. States with multiple boards differ mainly in that, having no jurisdiction over the drugless healer, they have had no experience in his prosecution. States which claim greatest success in prosecution are found to refer to court and not jury decisions. Michigan answers: (c) "When indictment properly drawn and evidence warrants, the judge instructs jury to convict in nine cases out of ten."

This, if generally applicable, might solve many of our difficulties in administration, but I am advised by a Colorado lawyer that such instruction would violate the right of trial by jury guaranteed by both the federal and state constitutions, and would constitute reversible error. The court may instruct an acquittal but can never direct a conviction.

In our attempts before the legislature to have a bill passed which shall require of the applicant, for a license to practice the healing art, an education in the sciences commensurate in a reasonable degree with the responsibility assumed in practice, we again meet with an indifference, if not a definite antipathy which is quite incomprehensible on the basis of



honest intent and fair dealing on the part of the medical profession.

It is not difficult to have a law passed which will require of the medical man adequate educational qualifications, provided the cultist shall be given a board which may license on qualifications he may predetermine. The average legislator seems to view the matter in the light of give and take. He may give the medical profession what it wants, provided the cultist may have what he wants. In other instances, he may know something of the value of a scientific education, and yet have no comprehension of the subject from the standpoint of conservation of human life.

The cause within the medical profession which I look on as having more to do with the distrust of the legislators and the people in general than all others put together is the spirit of antagonism and open hostility shown by members of the medical profession to any therapeutic measures, theory or practice which may be advanced through other than its own approved channels.

To meet this condition, I recommend the creation of a commission of capable scientists who shall be selected with great care as to their fitness for the task assigned, which shall be that of ascertaining the facts relative to clinical results of any method of treatment in selected cases. Advocates of a given method of treatment should be permitted to select the class of cases to be treated. The commission should then make a thorough clinical study of the case including laboratory, roentgen-ray and pathologic findings.

I should like to offer two suggestions which, if followed, I believe would go a great ways toward solving our problems in legislation and administration of medical practice acts: 1. The organization of a strong central body of national scope with a capable executive head, and an active field secretary to collect and disseminate through the public press, and otherwise, all data which may serve to educate the people with relation to scientific research, public health matters and on the efforts of an altruistic medical profession for better conditions of licensure. 2. The creation of a commission of capable scientists to ascertain the facts relative to clinical results of methods of treatment which have gained wide public recognition, so that the truth may be known and utilized in the interest of humanity. Since our effort is to establish educational standards for all who would practice the healing art, and since the motives of the medical profession are so seriously questioned, it seems to me that there are two measures that might be considered and furthered by this body in which our motives cannot be justly assailed.

1. That no educational institution organized for the purpose of granting professional degrees should be permitted to operate in the state without showing adequate funds, facilities and standards to justify such operation as measured by established educational standards and determined by educators.

2. A general law providing that no one who has not had a preliminary education equivalent to two years in a standard college or university may be admitted to an examination for a license to practice the healing art in any of its divisions; such educational qualifications should be determined by men of academic training who shall not be physicians.

#### Reciprocity Problems in the South, with Particular Reference to Special State Licensure Requirements

DR. K. P. B. BONNER, Morehead City, N. C.: Reciprocity was adopted but a short time before it became necessary to surround this privilege with certain restrictions. The unworthy and immoral physician is just as much at liberty to make application for reciprocity as the most eminent specialist; in fact, owing to these faults, he is often compelled to seek a location remote from where he is known. These special requirements are primarily intended to differentiate between the competent and incompetent; the worthy and unworthy; the moral and immoral. With the promulgation of these special licensure requirements, differing in different states, many problems arose. It was not the desire of those in authority to impose upon the reputable practitioner; yet it was imperative to guard strictly the gateway to medical licensure for the good of the public. These problems may be said to arise from two great causes—the method by which the privilege is granted by each individual board, and the personality of the individual applicant. A homely but

expressive manner of terming these two causes might be uses and abuses.

The problems arising as a result of the administration of reciprocity by individual boards may, for convenience, be divided into three classes: (1) the custom of fixed formal reciprocal agreements between boards; (2) provisions to embrace older practitioners of medicine; (3) lack of uniformity in the practical experience required of the applicant. These three causes are responsible for all of the obstacles that confront the reputable prospective applicant for license by reciprocity.

Sixteen out of eighteen Southern states report that they enter into fixed formal reciprocal agreements. Of the remaining two, one places recognition on an individual basis. The other refuses to grant reciprocity to any applicant, and explains this attitude by stating that "reciprocity regulations have not been standardized and, until they are, we will not reciprocate with any state." Two of the sixteen states that make formal agreements express doubt as to the wisdom of such a course, one by saying: "We're inclined to abandon it"; the other notes: "With a wise discretion as to the individual." Five boards state that the conditions of their agreements do not vary, being based solely on examination. The conditions of the remaining eleven contracting boards vary with various boards. In some instances one board will accept applicants from one state on examination only; from another state the basis may be examination and diploma, and still another, diploma. Seven boards confess that no application will be considered unless certified by boards with whom a formal agreement has been made. Thus is seen the wide range of conditions surrounding fixed agreements, and the multiplicity of complications and difficulties that may arise. The simplicity of individual endorsement is the strongest argument for it.

Passing now to a consideration of the means devised to enable the older practitioner of medicine to secure recognition in another state, with one exception, all boards have such provisions to fit the period when the standard of education was not as high as it now is. To become acquainted with the provisions as they operate in each state would bewilder the average intellect. They are complicated in the extreme, and would require a knowledge of the various evolutionary processes of medical laws in these states. These special exemptions are extended only to physicians qualified in other states prior to the rise in the standard in the state giving the recognition.

The lack of uniformity, as between states, in the requirement of practical experience of the applicant is marked. Four states require no experience other than a state license. Ten states require one year of experience; two require two years' experience; but one of these will accept one year of hospital experience as an alternative. One state will accept applicants only after five years' practice, but has an alternative of two years' hospital experience.

It is imperative to determine, by all possible human means, if the man who is being licensed without examination is the individual he claims to be. Unless extreme caution is observed in this matter, it is easy for an impostor to secure a license. Very few states in the South require the applicant to submit a certified antographed photograph. This requirement serves as a means to prevent a great deal of the fraud perpetrated by impostors. Requiring the applicant to appear in person before a stated session of the whole board is another excellent prevention of fraud.

The moral character of the applicant is of prime importance. No immoral man should be permitted to follow the high calling of administering to the physical ailments of his fellow man, notwithstanding the fact that he may hold a license in another state and be ever so competent. The relationship of the physician to the family is too intimate to hazard the deteriorating influence of a man unsound in moral fiber.

The Federation of Medical Boards of the United States should enlarge the scope of its activity in connection with reciprocity, and formulate a standard set of regulations for general adoption. In addition to this, a model reciprocity or endorsement law should be drafted with a view to securing the enactment of it in the general assemblies. The provisions of this model law should be such that the board is



vested with broad discretionary powers to exercise sound judgment in passing upon the fitness of applicants for endorsement without examination. The federation is in a position to effect this reform in reciprocity procedure with a minimum loss of time. It is the common ground on which the various boards meet. It is there that the various differences could be threshed out. Widely divergent views could be reconciled and, finally, a mutually satisfactory understanding and agreement reached.

#### Internship in Relation to Medical Education and Reciprocity

DR. I. D. METZGER, Pittsburgh: The art side of medical education has tended somewhat to deteriorate since sole scholastic training has replaced the erstwhile partial practical training under a preceptor. The clinical years in college are aiming to meet this deficiency, but the student is likely to be so engrossed by the demands of the complex curriculum as to become bewildered, if not floundered, in his conception of actual medical practice. The urgent need of a year of practical experience under competent supervision must be obvious to all discerning physicians. It gives the overfed medical mind an opportunity to digest and assimilate the theoretical ideas ingested during the four years' orgy. It gives him an opportunity to orient himself and to apply deliberately the ideas absorbed under pressure. Erroneous concepts due to imperfect comprehension can be corrected so that the young physician may later face his professional problems with assurance, with confidence, and with consequent zeal and courage.

Licensure into any state through reciprocity, or through interstate endorsement, may be secured only when the applicant meets the requirements of the medical act of that state. These acts are becoming more or less uniform under the standardization of medical schools. The chief disparity now lies in the matter of internship. Ten states now require this extra year as an essential part in the applicant's credentials to practice within their borders. In 1914, Pennsylvania established this training as a prerequisite to admission to the examination. All applicants for admission to the state by reciprocity, if graduated since that time, must meet this requirement. States demanding internship must necessarily evaluate such internship. This means the standardization of hospitals to ascertain with some degree of certainty which hospitals may be acceptable as giving the required teaching. I earnestly hope that in the near future, at this meeting if possible, there shall be established a uniform type of internship which all hospitals may follow that make an effort to qualify.

The intern year should be an integral part of the medical course, secured in the fifth year of the course, comprising an actual systematic apprenticeship which covers all the phases of medicine, and should receive equal credential evaluation with that of any other year of the curriculum. It should be so conducted as to elaborate the knowledge already gained and supplement it with such additional knowledge and experience as may be gained in his practical hospital duties.

The internship should be secured before the young graduate is admitted to the examination for licensure. The examination in turn should take cognizance of the same, and should attempt to elicit the ability of the applicant to apply his knowledge and to determine his mental power, as shown by resourcefulness and judgment, and to ascertain whether or not he is a sane and safe physician to release in the community.

The valuable modern hospital invites the intern to join its ranks of workers as a co-worker. His duty shall be that of aiding the chief in the study of his cases, in recording adequate histories and physical findings, in determining what investigations should be made as well as making them, thus encouraging the intern in every way to bring upon the case at hand all the advance knowledge recently acquired by him. With such an opportunity he will not only be satisfied but will perform with fidelity every request made of him.

The experience of the Pennsylvania bureau has convinced its members that hospital intern training can be of the highest value only when it is systematic, following critically a rotation service covering all the departments of medicine, so that the intern student shall have a supervised practical experience in all phases of medicine.

To exercise the function of reciprocity effectively, a common standard of requirements should obtain in medical education. At present each case must be administered on its own merits in determining whether the qualifications meet the demands of the medical act of the state into which the applicant desires to enter. The intern demands of Pennsylvania must appear to be rather exacting to one desiring to enter from a more lenient state. We are convinced that the cause of medical advancement is best met by securing a thorough grounding in the fundamentals before any specializing is attempted. This rotation of service balances the student mind and makes it more susceptible to the apprehension of essentials in diagnosis. It encourages team-work on the part of the staff members, thus insuring better care of the patient and more discerning medical correlation. Time service as such means time wasted and slovenly habits acquired by the unfortunate intern. His time is too valuable to be wasted, and his responsibilities are too serious to be assumed carelessly or indifferently.

An eager, purposeful spirit of service is a mighty asset in entering this exalted profession.

#### DISCUSSION

DR. N. P. COLWELL, Chicago: It would be a great advance, the Council on Medical Education and Hospitals believes, if the state boards generally will adopt the intern year as an essential for a license to practice, and the time is ripe when that can be done without hardship to the graduates.

DR. H. W. BRIGGS, Wilmington, Del.: It has been decided by our judiciary that under our statute we have no right to enter into any definite reciprocal relations with other states, unless those states have standards equal to or better than our own, with a proper endorsement of the examining board of the state, together with a certificate of moral character from the applicant for licensure. I think we should do away with all definite reciprocal fixed relations.

DR. THEODORE HOUGH, Charlottesville, Va.: There are signs of cooperation between the state boards and medical colleges which are most gratifying. We must maintain a certain amount of elasticity with regard to the curriculum and methods of teaching, because we are dealing with a subject that we want to improve. Every one knows that we can change our requirements in the college association far more easily than the state boards can have things changed when they are crystallized into laws. I believe the time will soon come when all medical schools will require the hospital year before graduation, but we want to work the thing out sanely and thoroughly before we require this standard.

DR. CALVIN L. JOHNSTONBAUGH, Bethlehem, Pa.: Our law has been in operation for eight years. On different occasions I have inquired of the hospital staff chiefs about certain interns they have in the hospital, and their answer invariably has been, "They, like all others, don't know anything." If that is the character of students our colleges are turning out, it is time for them to sit up and take notice, so that the medical boards of examination do not have to round out their products. The Pennsylvania law in regard to interns has been working satisfactorily in the last eight years.

DR. SCUDDER, Cincinnati: Many of the graduates seeking internships do not like to have suggested to them in what hospital they should seek internship, because they want to feel, after being out of college, they have more or less right to make a choice for themselves. One graduate will want to go to a hospital of less than 100 beds because some one has told him he will have more opportunities to do the things he wants to do right away, whatever that may mean; another will select a general hospital of 1,200 beds with a fixed rotating service. I agree with Dr. Metzger that in all hospitals for this purpose the services should distinctly and thoroughly represent medicine, surgery, obstetrics and the laboratory, but I cannot agree with him that there should be any sharp line of demarcation drawn as to how much surgical service the intern shall have, or how much obstetric or laboratory service he shall have. The average intern in going into a general hospital will fight shy of obstetric service or he will soon tire of any fixed amount of laboratory or other service. He is willing to do a little of each but not too much.



DR. T. J. CROWE, Dallas, Texas: The Texas board has put on the intern year to be effective in 1925. All classes in the colleges then will be required to have the intern year after graduation. The question of what shall constitute an internship at the present time is a rather open one and would better be deferred until we get internship throughout the country. Our own attempt to put on the intern year was postponed two years to accommodate osteopaths. We have two osteopaths on our board, and they insisted that we ought to have time to get the hospital facilities to take care of the internships.

DR. FRANK BILLINGS, Chicago: As a part of the educational system, I believe the fifth year should be a required service in public and general hospitals; and many of the sectarian and other hospitals are general. To arrive at a knowledge of the character of a hospital, I believe the Federation of State Boards, the American Medical Association, the Association of American Medical Colleges and other national organizations ought to get together on the rating of hospitals. We have overdone the word standardization, but now we should rate hospitals to know what they are able to do and how well they are able to function.

REV. CHARLES B. MOULINIER, Milwaukee: I do not hesitate to proclaim here that the hospitals in Pennsylvania as a group seem to be further advanced than the hospitals of any other one state in the Union, and I believe that is largely due to the control the state board has had.

DR. PAUL W. GOLDSBURY, Deerfield, Mass.: There seems to be a great development of sentiment along the line of rural needs, and if that is true, there should be an appeal made to the young graduates to go to the rural district hospitals. There is a great future in rural districts for medical practitioners.

DR. NATHANIAL R. PERKINS, Boston: Massachusetts does not require the intern year. We have a Class A school that fights everything of that nature in the legislature. I believe that the state boards should encourage hospital work by giving graduates a percentage for work done in the hospital year.

WEDNESDAY, MARCH 8—AFTERNOON

#### Graduate Work as a Licensure Substitute for Deficiency in Premedical Requirements

DR. THOMAS McDAVITT, St. Paul: The medical schools can cull their students and standardize them absolutely; but the examining boards have to deal with all the schools, some of them rigid and careful, and others often somewhat careless. During this evolution of higher standards in medical education, mention was rarely made of premedical requirements. As the public demand for better equipped medical men became increasingly urgent, the medical departments of many of our large universities began to perceive the necessity for premedical requirements: a high school education first, later one year of college work, then two years. The more advanced universities having set this example, soon medical boards began asking their legislatures for authority to advance their standards, and force the recalcitrant medical schools to accept these requirements or refuse their alumni admission to the state. The Minnesota board made a rule demanding two years of college work, preliminary to the medical course in 1907 to be active in 1912. A number of medical schools at that time had not adopted this requirement. A change in standards always provokes criticism and gives rise to cases of apparent injustice, though the ultimate aim is always to benefit the public. With us an attempt has been made to enforce a rigid application of this rule. It is a question, however, if these requirements may not, at times, prove unfair to certain conscientious and well equipped medical men who were not quite up to the maximum of the premedical requirements.

It was the experience of many boards, at the time they made their rule requiring three years of medical lectures to secure a diploma, that candidates presented themselves several years after their medical alma maters had increased the standard to three years, they themselves having been graduated with two years of lectures, but after the state board law required three years. These schools could never return to their former schedule, and comparatively few candidates could present themselves with insufficient preliminaries.

Today there are eighty or ninety medical schools, most of them affiliated with state universities or colleges of recognized standing, which demand two years of college work as a preparation for admission to their medical departments. But what of the number of graduates who took their medical training in good faith at many of these schools before they saw fit to increase their preliminary requirements? Their number is not small, nor is their ability or training negligible.

No further graduates from these schools can be presented with short or doubtful terms of study. The question before us is just this: In justice to the boards, the schools and the candidates for license, is it possible for us to suggest a substitute for these deficiencies? Must the law remain inviolate, and the candidates be forced to make up their deficiencies? Or may not some form of graduate work be substituted? If so, of what shall it consist? May not some plan of postgraduate work be advised by this organization which, while satisfying the basic requirements of boards and schools, shall be fair to the candidates? Could we properly appreciate the difficulties experienced by many applicants who faithfully fulfilled all the requirements demanded at the time they took their medical courses, I think we would realize the importance of formulating some plan to assist them out of this seeming impasse. Whatever postgraduate work may be allowed as a substitute for deficient preliminaries, it is highly important that it should be standardized.

As all the medical schools already do or soon will demand the two year preliminary, this is a difficulty that will soon right itself. However, the candidates from any medical school unwilling to adopt the two years of college work should by no means be allowed to benefit from this postgraduate substitute. It is to remedy the hiatus which some candidates encounter, as a result of the incomplete conditions which exist while these requirements are being standardized, that we are now suggesting to this organization the possibility of postgraduate work as a substitute for these premedical deficiencies. It is for you to advise what this postgraduate work shall be. It is a matter for the examining board to decide, basing its decision on the character of the candidate's deficiency. What we desire is some concrete suggestion that will meet the needs of such candidates.

#### DISCUSSION

DR. LOUIS B. WILSON, Rochester, Minn.: About two years ago, while chairman of the Graduate Committee of the American Medical Association, I inspected most of the graduate schools in the United States, except those on the Pacific Coast and those in the extreme South. Judging from that experience, I should say that if any consideration is given, and I believe there ought to be, to the question of Dr. McDavitt, the certificate should be most carefully guarded. We have a great many so-called postgraduate schools in the United States, and from the character of the work done in most of them I do not believe that state boards would be warranted in accepting a certificate of the work done therein as the equivalent of deficiencies in the undergraduate work. I believe, however, that this broad line should be drawn: if a certificate was given to a state board in a particular instance concerning a particular individual, it should be accepted, provided it came from a school which has now the full requirements for undergraduate work, that is, the two years, plus four years, and so on, and which will certify on honor that the record of the graduate work done in it is the equivalent of the present requirements.

DR. E. P. LYON, Minneapolis: We have an analogy to this situation in the graduate school of the University of Minnesota. A man who enters the graduate school or is a candidate for fellowship must be a graduate of a Class A medical school, having two years' premedical requirement, and the equivalent of that of the University of Minnesota. From time to time men apply for Mayo fellowships or other fellowships at Minneapolis who have not these standard requirements, men who graduated a few years ago with one year of premedical work, or graduated a few years ago with one year of premedical work, or graduated on a high school basis. Very often the recommendations of these men are of the highest type. What is the graduate school to do? Should it turn down such men, or should we have them go back to



the college of sciences, literature and art, and have them take up the subjects in which they were deficient before they went to the medical college, or shall we have them take work at the present stage of their development which will make them do the best service and be equivalent to the present requirements? And the graduate school has answered the question sensibly, I believe, by the latter alternative.

REV. CHARLES B. MOULINIER, Milwaukee: It seems to me that you are face to face with the solution of a practical difficulty. If the powers of the boards can be so exercised as to prescribe some work, after the medical course is done, by way of exception to the law and to the academic theoretical requirements, which cannot be cited to the boards as a precedent; and if the boards decide on admitting this substitute of postgraduate work on the basis of the candidate's qualifications, I should say that what has been said here can be reasonably applied, namely, that graduate work can be prescribed for such men after you have found out what kind of men they are either by practical examination or by the testimony of their mental worth and the character of their work. You will thus avoid a precedent and not permit unfit men to use that privilege. Furthermore, you would insure the public against the abuse of the power of the boards permitting unfit men to practice on the public. As a practical solution of what has been proposed here, I should say that it seems reasonably and professionally right, although theoretically and academically it is not right.

DR. WALTER L. BIERRING, Des Moines: It is gratifying to know that there is a certain flexibility being manifested in our interpretation of credentials along various lines, and that there is a board like that of Minnesota that has the courage to break away from the beaten path and acknowledge that, at least, logically certain lines of work are equivalent to premedical studies, even though academically they may not be so considered. Unfortunately, state boards are bound by the statutory restrictions which make it difficult for them to head one way or the other. Often they assume these restrictions more than they really exist, and there cannot be any question that the scientific work that is done now in the more advanced branches in medicine would fully satisfy the demands required or those requirements of premedical study. I should rather feel, however, that there should be great care in adopting this provision, that is, one ought to confine it to individual cases at present, and only when it is controlled as it is in Minnesota does it seem justified. Associated, as I have been, with another qualifying board that is trying to elevate standards of qualifications, I am inclined to think that there would be some hesitancy in making any definite changes; but there can be no question that this is a method in the right direction, and it is certainly to be commended, and in individual instances could well be followed by other state boards.

DR. CHARLES A. GROVES, East Orange, N. J.: Unfortunately, in some of the states the legal mind and the medical mind do not travel on the same track. The state of New Jersey in its statutes makes certain definite requirements which make it impossible to favor those whom we should like to favor, and if sometimes the law is lax in its construction, the result has always been the establishment of a precedent, and that precedent makes trouble every time. We refer these cases to the attorney-general of the state, and he gives us definite and accurate information immediately.

DR. JOHN M. DODSON, Chicago: Regarding the length of time between matriculation and graduation, is there any logical reason why a medical school which provides a continuous session should not allow its capable students to complete the course of instruction in four calendar years? I myself can see no reason why they should not do so. It would be a good thing if we could get these young men into practice at an earlier period than at present, and yet because of the restriction laid down twenty years ago, conditions for which no longer exist, medical schools are prevented from doing it. I think that state boards should carefully consider whether they cannot modify their laws and regulations so as to give a little more freedom to the development of pedagogic procedures.

(To be continued)

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Personal.**—Dr. Leon C. Havens, Johns Hopkins School of Public Health, Baltimore, has been appointed director of the Alabama State Laboratory and Pasteur Institute, effective June 1.

**Dr. Cochran Honored.**—A bronze bust of the late Dr. Jerome Cochran, founder of the Medical Association of the State of Alabama and state health officer until his death in 1897, has been placed at the entrance of the health department building, Montgomery.

**Hospital News.**—The Alabama Baptist Hospital, Selma, was formally opened, February 14. Dedicatory services were held at the First Baptist Church, and the building was open for inspection by the public. Dr. Samuel W. Welch, state health officer, delivered an address.

### ARKANSAS

**Personal.**—Dr. Clarence W. Waring, U. S. Public Health Service, has been appointed superintendent of the Hot Springs National Reservation, to succeed Dr. W. P. Parks. —Dr. J. M. McDavid has been appointed health officer of West Helena.

**Home Coming Meeting.**—The Arkansas Medical Society announces that the annual session, which will be held in Little Rock, May 17-19, will be a "home coming meeting." All members of the American Medical Association who at one time lived in Arkansas are urged to attend. These physicians are asked to "stop off" at Little Rock on their way to St. Louis for the annual session of the American Medical Association, which takes place the week following the Arkansas state convention.

### CALIFORNIA

**Donation by Physician.**—Dr. Norman Bridge, formerly of Chicago, has donated \$300,000 to the California Institute of Technology, bringing his donations to that institute to \$550,000. The new gift will be used for extensions to the recently completed Norman Bridge Laboratory and in providing a technical library for the staff of the department of physics.

**Licenses Revoked.**—It is reported that the board of medical examiners recently suspended the license of Dr. Charles E. Brown, Fresno, following conviction of violation of the Harrison Narcotic Law.—The board revoked the license of Dr. Holmes Troutman, Oakland, who is serving a sentence in San Quentin prison.—A newspaper report states that the licenses of Charles E. Marsh, San Diego, and Roy R. Millsap, Los Angeles, naturopaths, were revoked by the board of medical examiners, February 23.

**Hospital News.**—The Standard Oil Company Sanatorium, Colfax, is practically completed. This hospital is one of the units of the Colfax School for Tuberculosis and has accommodations for twenty-five patients.—It is reported that Dr. Charles Weddle has recently sold the Dinuba Sanatorium for \$30,000.—The new infirmary at the Tulare-Kings County joint tuberculosis hospital, Springville, was opened for the reception of patients, March 1.—The Casa del Mar Hospital was opened to the public, March 4. A main building will be added in the near future at a cost of \$100,000 and the hospital will have a capacity of 150 beds.—The new Los Angeles Polyclinic Hospital, Los Angeles, will soon be erected, at a cost of \$3,000,000. Construction of the first unit of 300 beds will be started in the autumn, and the second, or convalescent unit, will be erected in the spring of 1923, when the other units will follow.

### DISTRICT OF COLUMBIA

**New Members of University Faculty.**—Georgetown University School of Medicine, Washington, has announced four additional members of the faculty as follows: Dr. Howard F. Strine, M. C., U. S. Navy, has been appointed associate professor of the principles and practice of surgery; Dr. Francis M. Munson, U. S. Army, retired, lecturer on preven-



tion of diseases; Dr. Henry S. Bernton, lecturer on hygiene, and Dr. James A. Gannon, associate professor of surgery.

**Conference on Public Health and Sanitation.**—A conference of deans of schools of public health and medical schools, presidents of universities with which these schools are connected, a selected number of professors of public health subjects and men actively engaged in public health work, on "The Future of Public Health in the United States and the Education of Sanitarians," will be held in Washington, March 14-15, under the auspices of the U. S. Public Health Service. The conference will consider various newer aspects of public health and their importance in the training of sanitarians; the various kinds of sanitarians which will be needed for the future, and the recruiting and training of more and better sanitarians.

#### FLORIDA

**Polk County Medical Society.**—At the annual meeting of the society, held recently, at Lakeland, under the presidency of Dr. Herman Watson, the following officers were elected: president, Dr. Frank E. Irons, Winter Haven, and secretary, Dr. Herman Watson, Lakeland.

**Florida Public Health Association.**—On the invitation of the County Federation of Women's Clubs and the medical societies, the Public Health Association is holding a series of clinics throughout the state, both for white people and for negroes, under the direction of Dr. L. C. Brewer, director of medical service for the Florida Public Health Association, and in cooperation with the state board of health. No treatment is offered through the clinic, those who show evidence of tuberculosis being referred to their family physicians. The nurses of the association will visit them and assist them in carrying out the instructions of their physicians.

#### GEORGIA

**Personal.**—Dr. John Calvin Weaver, for eleven years physician and surgeon to the federal prison, Atlanta, has resigned to resume private practice.

**Hospital News.**—The new hospital at Sycamore was formally opened in January. Drs. John T. Moore and Warren A. Harrison will have charge of the institution.

#### ILLINOIS

**Medical Attention for Paupers.**—Contracts have been awarded to the following physicians of Piatt County for medical attention to paupers, as follows: Dr. Abe D. Furry, Monticello, and Dr. Vigo T. Turley, Bement.

**Health Promotion Week.**—Health promotion week will be held in May, under the auspices of the state department of public health. A health Sunday will be observed in the churches, and a birth registration campaign and better baby conferences will be held.

**Hospital News.**—Plans have been completed for the New Champaign County Children's Home, Rantoul, and the new building will be erected at a cost of \$37,500.—A new home for orphan children will be erected by the Masons at Rockford.—Ground will soon be broken for the erection of a new hospital at Hillsboro, at a cost of \$250,000.

#### Chicago

**Robert Koch Society.**—At the meeting of the Robert Koch Society, February 28, at the Chicago Tuberculosis Institute, the following officers were elected for the coming year: president, Dr. Everett Morris; secretary, Dr. Guy Edward Beard; trustees, Drs. Gray, Britton, Rice, Wheaton and Biesenthal.

**Quarantine Laws.**—Mrs. Jennie Baramore, proprietor of a rooming house in Chicago, was recently quarantined, when it was found that she harbored typhoid bacilli. She brought habeas corpus proceedings against Dr. John Dill Robertson on the grounds that the authorities had no right to quarantine her, but the supreme court ordered that she be removed to quarantine.

**Intersectional Meeting of Chemists.**—The Chicago section of the American Chemical Society was host to nine neighboring sections at a meeting at Northwestern University, March 11. In the afternoon, Dr. H. E. Howe, newly appointed editor of the *Journal of Industrial and Engineering Chemistry*, delivered the main address; in the evening a report was made of the work done by G. L. Wendt and C. E. Irion on the breaking down of tungsten into the simpler element, helium.

**Poliomyelitis Cases Reported.**—Quite a number of cases of poliomyelitis continue to be reported to the state department

of public health, although this is the off season for that disease. Cases have been recently reported from Logan, Whiteside, Scott, Livingston, Lee, Marion, Coles and Sangamon counties. For the most part, these counties are points of foci where infantile paralysis has been more or less epidemic since 1916, at times reaching alarming proportions. It is felt that these sporadic cases during the winter months should serve to keep physicians on the alert for the disease.

#### INDIANA

**Hospital News.**—Three new buildings will be added to the Marion County Tuberculosis Hospital at a cost of approximately \$182,000.—A hospital for veterans of the World War will be erected. Indiana, Kentucky and Ohio comprised the district.—An isolation hospital will be erected at La Porte in the near future.

#### LOUISIANA

**Hospital News.**—A three story addition will be made to the clinic building of the Charity Hospital, New Orleans, at a cost of \$84,000.—The site has been purchased for the new Baptist Hospital, New Orleans, at a cost of \$2,000,000.—A bill introduced into the House recently rules that only poor and needy persons can apply for treatment at any state charity hospital.

#### MASSACHUSETTS

**Hospital to Close for Lack of Funds.**—Lack of money to meet the expenses of the Infants' Hospital, Boston, will necessitate its closing unless \$25,000 can be raised for the current expenses. This is reported to be the only hospital in New England devoted exclusively to the care of sick babies.

**Boston Association of Cardiac Clinics.**—A meeting of the association was held at the Boston City Hospital, March 16, at which Dr. William Irving Clark, Worcester, spoke on "Heart Disease in Industry" and Dr. Harold H. Brittingham, Boston, read a paper on "Exercise Tests and Vital Capacity."

**New England Pediatric Society.**—The seventy-third meeting of the society was held, March 10, in Boston, and the following papers were read: Dr. Robert L. DeNormandie, "Disorders of the Breast in the Early Days of Lactation"; Dr. James S. Stone, "Unilateral Hypertrophy of the Breast in Childhood," and Dr. Samuel A. Cohen, "Oral Disorders in Pediatrics."

**Massachusetts Association of Assistant Physicians.**—The fifty-third meeting of the Massachusetts Association of Assistant Physicians of the Department of Mental Diseases was held at the Psychopathic Hospital, Boston, March 1. Drs. Harry C. Solomon and L. J. Thompson conducted a clinic, during which intraventricular and cistern punctures were demonstrated and two cases of lethargic encephalitis with parkinsonian syndrome were presented.

**Rural Hospital Service.**—A new organization called the "Committee on Rural Health and Medical Service," consisting of Massachusetts physicians, has inaugurated a plan to provide people throughout the state with medical care and attention similar to that which the hospitals, dispensaries and specialists afford people in the cities. Hospitals will be established, subscribed to and directed by the people, in different communities, and clinics will be conducted by specialists.

**Personal.**—Dr. Simeon Burt Wolbach has been appointed Shattuck professor of pathologic anatomy, to succeed Dr. William T. Councilman, who resigned recently.—Dr. David J. Johnson, Boston, has been appointed institutions commissioner to succeed Major W. Casey.—Dr. Francis Weld Peabody, has been appointed assistant professor of medicine, Medical School of Harvard University, Boston.—Dr. Walter D. Shurtleff, Plymouth, has been appointed member of the board of health.—Dr. John A. Ceconi, Dorchester, has been appointed epidemiologist of the health department.—Dr. Charles E. Abbott, Andover, has been appointed a member of the board of health for a period of three years.

#### MICHIGAN

**Address by Radiophone.**—Dr. Walter H. MacCraken, dean of the Detroit College of Medicine and Surgery, spoke over the Detroit News radiophone, February 8, on "The Problems of the Doctor of Today."

**Newaygo County Medical Society.**—The annual meeting of the society was held in January, under the presidency of



Dr. Price T. Waters, White Cloud. The following officers were elected for the ensuing year: president, Dr. Peter Drummond, Grant, and secretary-treasurer, Dr. William H. Barnum.

**Joint Health Meeting.**—At a joint meeting of a group of health agencies and the Kent County Medical Society, held at Grand Rapids, March 8, under the auspices of the Blodgett Home for Children, the Clinic for Infant Feeding, the Mary Free Bed Guild, the Grand Rapids Anti-Tuberculosis Society, the Butterworth Hospital, the Visiting Nurse Association, the Parent Teachers' Association, the board of education and the city health department, Dr. Haven Emerson, professor of preventive medicine, Columbia University, New York City, delivered a lecture on "Periodic Medical Examination of the Individual and the Part It Plays in Public Health."

**Personal.**—Dr. Mary T. Stevens, Detroit, has resigned as member of the board of commissioners of the House of Correction.—Dr. Burt R. Shurly was elected vice president of the Detroit Tuberculosis Sanatorium at the annual meeting.—Dr. Robert J. Hutchinson has been elected chief of staff of the Butterworth Hospital to succeed Dr. Alden H. Williams.—Dr. Preston M. Hickey, Detroit, has been appointed professor of roentgenology at the University of Michigan, Ann Arbor, to succeed the late Dr. James Van Zwaluwenburg.—Dr. James E. Davis, Detroit, president of the Wayne County Medical Society, has been appointed secretary of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, to succeed the late Dr. E. Gustave Zinke, Cincinnati.

### MINNESOTA

**Hospital News.**—A new fireproof building will be built at the tuberculosis sanatorium, Pine City, with forty-five rooms, consisting of private rooms and small wards, a laboratory, drug room and offices.

**Upper Mississippi Medical Society.**—At the annual meeting of the society held at Brainerd, the following officers were elected for the ensuing year: president, Dr. Charles G. Nordin, Brainerd, and secretary-treasurer, Dr. George I. Badeaux, Brainerd.

**Personal.**—Dr. George W. Phillips, clinical director of the Aberdeen U. S. Public Health Service Hospital No. 65, St. Paul, has been transferred to a similar position in Portland, Ore.—Dr. Hans M. Lichtenstein was recently elected president of the Winona County Medical Society.

**Health Institute.**—The U. S. Public Health Service, in cooperation with the state board of health and the University of Minnesota Medical School, will conduct an extensive health institute in the medical buildings on the university campus, March 20-25, under the direction of Dr. Albert J. Chesley.

**Southern Minnesota Medical Association.**—The midsummer meeting of the association will be held, June 19-20, at Rochester. The program for the forenoons will be clinical in character and the program for the afternoons will be scientific. The banquet will be held, June 19, at the New Kahler Hotel.

### MISSOURI

**Abolition of Health Office.**—It has been decided by the mayor that the position of city health officer of Crisfield is a useless expense to the city. Dr. Clarence E. Collins, who is filling the position, will resign, the resignation to take effect immediately.

**Personal.**—Dr. David H. Dolley, professor of pathology at the University of Missouri, has been appointed director and professor of pathology in the St. Louis University School of Medicine. Dr. Ralph L. Thompson has resigned as director but will continue in the department.

**Tribute for Physician.**—Pursuant to a proclamation by Mayor Reynolds of Breckenridge, the citizens paid homage to "its most beloved and distinguished citizen," Dr. Joseph S. Halstead who attained his one hundred and fourth birthday, March 5. All business was suspended for 104 minutes at noon and every resident bowed in prayer. Dr. Halstead is a graduate of the Medical Department of Transylvania University, Louisville, Ky., 1840. His wife is 93 years of age.

### NEBRASKA

**Personal.**—Dr. Claude W. Mason, medical missionary at Kiu-Lung-Kiang, Yunnan, China, has recently returned to China after a short visit in Omaha.

**Cass County Medical Society.**—At the annual meeting of the society held recently, in Weeping Water, the following officers were elected for the ensuing year: president, Dr. Edward H. Worthman, Louisville, and secretary-treasurer, Dr. Oscar E. Liston, Elmwood.

**Physician Honored.**—A joint meeting of the Omaha-Douglas County Medical Society and the Nebraska and Iowa Pediatric Society was held, February 28, to honor Dr. Harry M. McClanahan, professor of pediatrics, University of Nebraska College of Medicine, Omaha. Dr. Isaac A. Abt, professor of pediatrics, Northwestern University Medical School, Chicago, gave the principal address.

**Hospital News.**—The Overland Cottage Hospital has recently been opened at Scottsbluff.—The General Hospital and the Evans Hospital, Columbus, have recently been merged, and the name changed to Columbus Hospital.—Dr. Chester E. Lewellen, Bayard, has recently leased the Bayard Hospital and equipment and will be in charge of the institution.—"Fairview," the former home of William J. Bryan, Lincoln, will become the new Methodist Hospital.

### NEW HAMPSHIRE

**Hospital Drive.**—A hospital drive is being conducted at Claremont by the Rotary Club, to raise \$60,000 for a new wing for the Claremont General Hospital.

**Personal.**—The governor has appointed Dr. Abram Mitchell, Epping, member of the state board of arbitration and conciliation.—Dr. Charles W. Adams, Franklin, has been appointed to the board of registration in medicine.

### NEW YORK

**Harvey Society Lecture.**—The eighth Harvey Society Lecture will be delivered by Prof. Winthrop J. V. Osterhout, professor of botany, Harvard University, Boston, at the New York Academy of Medicine, March 25, on "The Mechanism of Injury, Recovery, and Death."

**Law Regarding Treatment of Soldiers.**—A bill has been introduced into the legislature to provide medical and surgical treatment for veterans who are not entitled to receive treatment from the federal hospital service. Such relief will be provided at the expense of counties and cities of the state.

**Hospital News.**—A hospital has been erected at Utica by the Masons as a memorial to the more than 16,000 masons from the state of New York who took part in the World War. The hospital was built at a cost of \$1,000,000 and has accommodations for 225 patients. The institution will be formally dedicated, April 22.

**Legislation to Restrict Unprincipled Druggists.**—A measure is before the legislature to end the activities of unprincipled pharmacists and druggists operating without a license. The measure would prevent the owning and operating of a drug store except by licensed druggists. It was recently brought out that nearly 500 drug stores were opened in this state last year by unlicensed proprietors.

**Personal.**—Dr. Frederick C. Devendorf has been appointed passed assistant surgeon, U. S. Public Health Service, with the rank of major.—Dr. Daniel V. O'Leary has been appointed health officer of the sixth district, Albany, to succeed Dr. Edmond J. O'Donnell, who resigned recently.—Dr. Benjamin Schwartz has been appointed visiting physician to the Gouverneur Hospital, New York City.

**Aid for Pharmaceutical Research.**—The American Pharmaceutical Association has available a sum amounting to \$360,000, for the encouragement of research, to be awarded after Oct. 1, 1922. Those desiring financial aid in such work, should communicate before June 1, with Prof. H. B. Arny, chairman, A. Ph. A. Research Committee, 115 West Sixty-Eighth St., New York, giving their past record and outlining the particular line of work for which the grant is desired.

**Oppose Chiropractic Bill.**—A hearing on the Chiropractic bill was held in Albany, March 7, at which Dr. Augustus S. Downing of the state educational department led the opposition. Others who appeared in opposition to the bill were Dr. S. Dana Hubbard, New York City Department of Health; Dr. C. E. Lateman, representing Dr. Hermann M. Biggs, state health commissioner; Dr. James F. Rooney and Dr. James N. VanderVeer, representing the state medical society. The state osteopathic society is opposing the bill.

**Practiced Without a License.**—It is reported that Louis Pulvermacher of Brooklyn was recently convicted of prac-



ticing medicine without a license and was fined \$250. Pulvermacher, who is 70 years of age, stated that he was admitted to the practice of medicine in Germany before coming to this country forty-four years ago, but he admitted that he was not licensed to practice in this country. He claimed that he was a regularly ordained rabbi of the Hebrew church and for that reason had the right to use the title of "doctor."—It is reported that Isaac Fullerton of Columbus Grove, a "healer" accused by the state medical association of practicing medicine without a state certificate, on February 22, was found guilty and fined \$100 and costs.

**Legislature Bureau Recommends Action.**—The legislative bureau of the Medical Society of the State of New York has issued a special bulletin suggesting that all who are interested in medical legislation write and telegraph individual senators, and assemblymen especially, to pass senate bills Int. No. 536 and Int. No. 537, in the Senate, and concurrent assembly bills Int. No. 740 and Int. No. 741, in the assembly, known as the amendments to the public health law in relation to the practice of medicine, and commonly known as the "medical bills"; and also to write and telegraph to hold senate bill, Int. No. 368, "the chiropractic bill," in their committee, and all assembly chiropractic bills, introductory numbers 685, especially Int. No. 1283 (the Everett bill) and Int. No. 1421, in the committee on rules.

#### New York City

**Hospital News.**—Col. Charles E. Forbes, director of the U. S. Veterans' Bureau, has ordered the immediate abandonment of the Fox Hills Hospital on Staten Island. The 850 patients now in the hospital will be transferred to hospitals in and about New York City. The hospital is being abandoned because it has been declared a firetrap, and conditions have been said to be deplorable.—Plans have been filed for an eight and nine story hospital on the property of the Roosevelt Hospital. The cost of the new building is estimated at \$500,000.—The Harlem Eye and Ear Hospital formally opened its new building, March 14.

#### NORTH CAROLINA

**County Medical Meeting.**—At the annual meeting of the Johnston County Medical Society held in January, the following officers were elected for the ensuing year: president, Dr. Carl V. Tyner, Smithfield, and secretary-treasurer, Dr. John H. Fitzgerald, Smithfield.

**Babies' Feeding Station.**—A baby feeding station, where babies will be given expert attention, has been established at Charlotte, under the direction of the Charlotte Cooperative Nursing Association, with the assistance of Drs. Yates Faison, Myers Hunter and John R. Ashe.

**Hospital News.**—The Elizabeth City Hospital has recently changed its name to Pasquotank Municipal Hospital and will be operated as a community hospital. The hospital was formerly under the direction of the U. S. Navy.—Contracts have been let for the erection of three new buildings at the state hospital for the insane, Morganton, consisting of a new dormitory for men, a house for the staff and a large central kitchen. Work will be started at once and the buildings will be ready for occupancy in seven months. The cost will be \$103,000.

#### OHIO

**Personal.**—Dr. E. R. Henning, Bellefontaine, has been elected president of the Association of Big Four Railway Surgeons.—Dr. Louis Schwab, Cincinnati, has been elected president of the Cincinnati Obstetrical Society.

**Cincinnati Public Health Federation.**—At the annual meeting of the federation held recently, Dr. Julian Benjamin was reelected president; Dr. Carey McCord was elected vice president, and Dr. A. C. Bachmeyer, honorary secretary.

**Summer Courses at University.**—Special courses will be instituted at the Miami Medical School, Cincinnati, for teachers who desire to take up special work in classifying and training mentally defective and subnormal children.

**Hospital News.**—Contracts have been awarded for the new receiving hospital addition to the Longview Hospital, Cincinnati, at a cost of \$229,117. It is planned to erect the new building upon land adjoining the General Hospital or near the University of Cincinnati Medical College.

**Health Commissioners Meeting.**—A meeting of the commissioners of the southwestern district was held at Dayton, February 3. Dr. C. A. Neal, health commissioner of Hamilton County, was reelected president of the district organiza-

tion; Dr. H. H. Pansing, Montgomery County health district, was reelected secretary.

**Physician Arrested.**—It is reported that L. C. Wolfe, Sullivan, was arrested January 19, and fined \$25 and costs on two charges of practicing medicine without a license and \$500 for violation of the Harrison Narcotic Law. Four hundred dollars of the latter sum was refunded on condition that he turn over to the state between 400 and 500 bottles of medicine in his possession and that he leave the state of Ohio immediately.

**New Health Commissioners.**—The following physicians have been appointed health commissioners: Dr. John L. Gray, Caldwell, health commissioner of Noble County; Dr. David R. Williams, Girard; Dr. James S. Mariner, East Youngstown; Dr. Oliver U. O'Neill, Ironton, to succeed Dr. Elmer E. Wells; Dr. William K. Ruble, Clinton County and Wilmingtonton; Dr. Thomas T. Church, Salem; Dr. Silas A. McCullough, Columbiana County; Dr. Walter H. Brundage, Delphos; Dr. George E. French, Elyria; Dr. James J. Martin, Crawford County, and Dr. Cyrus W. Chidester, commissioner of Delaware City.

#### OREGON

**Hospital News.**—The Ashland Sanatorium, established in 1915, with Dr. George O. Jarvis as medical director, has been closed and in future all patients will be taken to the Sacred Heart Hospital, Medford.

#### OKLAHOMA

**Hospital Notes.**—A new hospital will be erected for Oklahoma County, at a cost of \$200,000. The site has not yet been selected.

**State Serological Association.**—The Oklahoma Association of Laboratory Workers has changed its name to the State Serological Association, in order that technicians and laboratory workers who are not physicians may be eligible for membership. Mr. L. E. Woods, Enid, was elected president, and Dr. William H. Bailey, Oklahoma City, vice president, for the year 1922.

**Smallpox Epidemic in Prison.**—A prisoner from Kansas City was taken sick in the jail at Poteau and when the case was diagnosed as smallpox many of the other prisoners were vaccinated. All who did not receive inoculation had the disease and nine of these died between January 3 and 13. The prisoners who had been successfully vaccinated within the three preceding years did not contract the disease, although they were in intimate contact with virulent cases. Following this epidemic, nineteen cases were reported outside in Poteau, resulting in twelve deaths, and the town was quarantined.

#### PENNSYLVANIA

**Performed Illegal Operation.**—A report states that Dr. William H. Bricker, Jr., Philadelphia, was found guilty, February 17, of performing an illegal operation and was sentenced to serve from ten to fifteen years in the state prison and to pay a fine of \$5,000.

#### Philadelphia

**Personal.**—Dr. Clarence P. Franklin has received the cross of the Order of the Crown of Italy from the Italian government, in recognition of his services during the late war with the U. S. Army ambulance service in Italy.

**Soft Drinks Must Be Pure.**—Determined to protect the public against nonalcoholic beverages containing injurious ingredients, James Foust, director of the state bureau of foods, has instructed his agents throughout the state to obtain samples of various soft drinks. The need for such an investigation is shown for last year 195 prosecutions were instituted by the bureau for the sale of soft drinks in violation of the law and in 149 cases the beverages contained saccharin; forty-five were misbranded and, in one case, the beverage was unfit for drinking purposes. Fines totaling \$3,185 were collected. The Keystone State Bottlers' Association is supporting the state bureau of foods. This association advocates a jail sentence for each violation of the act.

#### RHODE ISLAND

**Medical Meeting.**—The annual meeting of the Providence Medical Association was held in January under the presidency of Dr. Frank T. Fulton. The following officers were elected for the ensuing year: Dr. Norman Darrell Harvey, president; Dr. Peter Pineo Chase, secretary, and Dr. Charles F. Deacon, treasurer.



## TEXAS

**Texas Public Health Association.**—At the annual meeting of the association, in February, at Austin, the following officers were elected for the ensuing year: president, Dr. Zachary T. Scott, Austin; first vice president, Dr. Elva A. Wright, Houston; second vice president, Dr. Joseph B. McKnight, Sanatorium, and secretary, J. W. Butler, Galveston.

**Hospital News.**—A new three story fireproof hospital will be built at Brownwood, with a capacity of fifty beds, at a cost of approximately \$60,000, to replace the former Physicians and Surgeons' Sanatorium, which was recently completely destroyed by fire.—A new Methodist hospital will be erected shortly at Oak Cliff.—The new Harris Memorial Methodist Hospital will be erected at Fort Worth.

**Dallas County Medical Association.**—At the inaugural meeting of the Dallas Clinic held, February 28, under the auspices of the county medical association the following physicians delivered addresses: Dr. Allan B. Kanavel, professor of surgery, Northwestern University, Chicago, spoke on "Infections of the Hand"; Dr. George W. Crile, professor of surgery, Western Reserve University, Cleveland, read a paper on "Newer Methods of Reducing Mortality in Abdominal and Goiter Surgery"; Dr. Marvin L. Graves, professor of medicine, University of Texas, Galveston, spoke on the subject of "Syringomyelia." Dr. Joseph Rector, president of the State Medical Association of Texas, and Dr. John H. Florence, state health officer, also attended the meeting.

## VERMONT

**Hospital News.**—The Vermont Sanatorium, endowed by Senator Proctor for \$200,000, was presented by the board of trustees to the state of Vermont last year.—The Washington County Hospital, Barre, was opened for the reception of patients, December 1.

**Vermont Tuberculosis Association.**—The state of Vermont makes an annual appropriation of \$50,000 for the care of indigent persons suffering from tuberculosis. The association is a voluntary one, affiliated with the National Tuberculosis Association, and maintains a medical consultant and three field nurses, who cover the entire state once every sixty days. Clinics are held in the larger towns and the consultant answers calls from the rural districts to see individual patients.

## VIRGINIA

**Bill to Provide Scholarship for Medical Students.**—A bill has been introduced into the Virginia legislature establishing twenty scholarships for medical students. Ten of these are proposed for the University of Virginia and ten for the Medical College of Virginia. The bill carries the provision that every student receiving the benefits of a scholarship provided by the act shall, after graduation, practice for a period of not less than five years in a rural section of the congressional district from which he was appointed. The scholarships are to be apportioned, two to each of the ten congressional districts of the state, the beneficiaries to be selected by competitive examinations.

## WEST VIRGINIA

**Hospital News.**—A three-story building has been erected at Martinsburg by Dr. Theodore K. Oates, for the purpose of organizing a group clinic, to be in operation by June 1.—A ward has been furnished at the King's Daughters' Hospital, Martinsburg, by the Rotary Club, for the purpose of doing orthopedic work on children whose parents cannot afford to pay for treatment.—Dr. C. E. White has resigned as superintendent of the Weston State Hospital for the Insane, effective March 1.

## WYOMING

**Northwestern Wyoming Medical Society.**—At the annual meeting of the society, March 2, at Cody, the following officers were elected for the coming year: president, Dr. Evald Olson, Lovell, and secretary-treasurer, Dr. Frances M. Lane, Cody (reelected). Dr. Albert D. Tonkin, Cheyenne, state health officer, was the principal speaker at the meeting.

## CANADA

**Public Health Meetings.**—The annual meeting of the Canadian Public Health Association will be held, June 6-9, in St. John, New Brunswick.—The annual meeting of the Canadian Association for the Prevention of Tuberculosis will be

held in connection with the Canadian Public Health Association.—The Canadian National Council for Combating Venereal Disease will also hold its annual meeting in St. John.

**Hospital News.**—A new building for acute mental cases has just been completed at the Provincial Hospital, Selkirk, with accommodations for sixty-five patients, at a cost of \$750,000. A building for the superintendent and a home for nurses will be added in the near future. Dr. Barnes, formerly of Homewood Sanatorium, Guelph, Ont., has recently been appointed superintendent of the institution.—A training school for the feeble-minded, on the farm colony plan, has been erected at Portage la Prairie at a cost of \$150,000, with accommodations for fifty inmates. As soon as finances permit, fifteen buildings will be added to the unit.—The Psychopathic Hospital has been erected at Winnipeg, at a cost of \$75,000, with accommodation for forty patients.—Dr. Alvin T. Mathers, director of the Psychopathic Hospital, Winnipeg, has been appointed medical director of mental hospitals in Manitoba.—The Provincial Hospital, Brandon, has received \$1,400,000 from the government, \$75,000 to be used for the erection of a fully equipped building for acute cases of mental disease, to be completed in 1923, with laboratories, occupation rooms, library, staff quarters and accommodations for 100 patients. One unit for the accommodation of eighty male patients has been completed at a cost of \$150,000 at the colony for chronic demented, one mile from the main building. Four units will eventually constitute the colony, with accommodations for 250 patients. A nurses' home has been erected at a cost of \$500,000. Dr. Charles A. Baragar has recently been appointed superintendent of the institution.—The government of Manitoba has spent more than \$2,300,000 since 1918 on capital account for the insane and feeble-minded.

## GENERAL

**The Western Electro-Therapeutic Association.**—The fourth annual convention of the association will be held in Kansas City, Mo., April 20-21, under the presidency of Dr. Curran Pope, Louisville, Ky.

**Venereal Disease Statistics.**—It has been reported by the U. S. Public Health Service that during the months of October, November and December, 1921, 80,140 cases of venereal disease were reported to the state boards of health, and 35,681 new cases were admitted to the venereal disease clinics.

**Legislation to Prohibit Transportation of Peyote.**—A bill presented to Congress by Representative Hayden forbids either the transportation in interstate commerce or the importation of any peyote or anhalonium or mariahuana or cannabis indica or any of its derivatives. Offenders are punishable by fine or imprisonment.

**Druggists to Receive Annual Liquor Supply.**—A year's supply of liquor will be available to wholesale druggists under the new regulation just issued by Internal Revenue Commissioner Blair of the Treasury Department. The druggist, under the regulation, may procure an amount of liquor equal to 10 per cent. of the value of his drug business sales during the last year instead of a supply for only a three-month period, as formerly. Additional amounts of liquor to supply increased prescriptions issued by physicians, however, may be obtained during the twelve months with the approval of the commissioner.

**Influenza.**—Telegraphic reports to the U. S. Public Health Service for the week ending March 4, show that there is a slight reduction in the number of cases of influenza reported. Nearly all of the states show an improvement. Twenty-six states report 21,188 cases, as compared with 21,509 the preceding week. At this season of the year, an increase in the number of cases of epidemic cerebrospinal meningitis usually occurs, but the reports show fewer cases than for the preceding week, and also fewer than for the corresponding week of 1921. Diphtheria shows a slight increase in number of cases over the preceding week.

**Postgraduate Course in Spanish and Portuguese.**—The New York Polyclinic Medical School and Hospital, New York City, announces a postgraduate course in Spanish and Portuguese, as well as English, beginning Sept. 18, 1922. Among the professors are Prof. Damaso Rivas of the University of Pennsylvania; Dr. R. Ruiz Arnau, a former president of the Academy of Medicine of Porto Rico; Dr. J. A. Lopez of the University of Syracuse; Dr. F. H. Rivero, a former professor of the Central University of Venezuela; Prof. William Sharpe, New York City; Prof. A. Freire de Carvalho of the



University of Rio de Janeiro, and Dr. E. Hurtado of the University of Bogotá, Colombia.

**Prophylactic Value of Pneumonia Vaccines.**—In a statement issued by the public health committee of the New York Academy of Medicine, March 8, it is announced that the experiments of prophylactic inoculation against pneumonia carried out during the period of the war and subsequently have not thus far yielded sufficiently convincing proof of its efficiency to warrant universal application. The experiments have, however, established that the vaccines have some value against three of the fixed bacteriologic types of lobar pneumonia and the vaccinations do no harm. There have been no fatal results from them but the duration of immunity secured is not very long—probably not more than five or six months.

**Suicides in 1921.**—According to the annual report of the Save-A-Life League, with headquarters in New York, more than 20,000 persons committed suicide in this country last year. According to the report, suicides were 23 per cent. more numerous in 1921 than in 1920. There were 840 suicides in New York City during 1921, an increase of 103 over 1920. Among the 1921 suicides were 10 editors, 10 well known writers, 40 college students, 51 schoolteachers, 21 clergymen, 57 judges and lawyers, 7 mayors, 93 bankers, and 88 presidents of large business concerns. Twelve hundred of these suicides, before killing themselves, murdered 2,000 other people. Loss of employment, commercial failure, and reactions from the war are prominent among the assigned causes of the suicides, but many were attributed to amazingly trivial causes.

### LATIN AMERICA

**French Professor in Paraguay.**—The Paraguayan government has engaged Professor André of Paris to teach in the School of Medicine during a three year period, beginning March, 1922.

**Remodeling of Guatemala Medical School.**—New buildings are planned for the Medical School of Guatemala and for this purpose data have been obtained from several American medical schools.

**Plague Disappears from Rio.**—The *Brazil-Medico* of February 4 states that since the third case of bubonic plague was reported some time before no new cases have been discovered, and no sick or dead rats have been found.

**Tribute to Dr. Niobey.**—When Dr. Domingos Niobey entered the National Psychiatric Hospital at Rio, for his daily rounds, on February 8, it happened to be the fortieth anniversary of his entering on the charge of the institution, and he found the place decorated and a number of friends to welcome him. The *Brazil-Medico* reproduces the address of tribute and gratitude presented to him signed by all the personnel of the hospitals and charities service of the city.

### FOREIGN

**Influenza in Italy.**—It was estimated that approximately 10 per cent. of the population of Trieste were suffering from epidemic influenza from December to January.

**Diploma in Tuberculosis.**—The Welsh National School of Medicine will hereafter grant a diploma in tuberculosis as a natural corollary to the university chair in this subject.

**Medico-Psychological Association of Great Britain and Ireland.**—At a meeting, February 23, in London, under the presidency of Dr. C. Hubert Bond, Dr. T. S. Good read a paper entitled "The Use of Analysis in Diagnosis."

**Women Physicians Barred.**—The London Hospital has issued a decree that women students shall henceforth be excluded. The reason given is that joint instruction on certain subjects cannot be properly conducted with mixed classes.

**Guarantees for Shaving Brushes.**—It has been announced by the Egyptian Department of Health that certificates of disinfection must accompany all consignments of shaving brushes manufactured in the United Kingdom and exported to Egypt.

**Association of Economic Biologists.**—The annual meeting of the association was held, February 24, in London. Dr. John Rennie read a paper on "The Present Position of Bee Disease Research" and gave a demonstration of polyhedral disease in *Tipula*.

**Centennial of Warsaw Medical Society.**—The Warsaw Medical Society was founded at the close of 1820, and it celebrated recently its belated centennial. Sokolowski reviewed the long history of the organization, and Pawinski gave a

historical sketch of the evolution of the conception of the vital force, the *pneuma*, the *spiritus vitale*.

**Personal.**—Sir William Thorburn has been elected president of the St. Andrews Society of Manchester.—Dr. T. W. Mitchell has been elected president of the Society for Psychical Research, London, to succeed Dr. William MacDougall.—Professor H. Claude, physician to the Hôpital Saint Antoine, has been appointed professor of psychiatry of the Faculty of Medicine of Paris.

**Royal Sanitary Institute.**—The annual congress of the Royal Sanitary Institute will be held at Bournemouth, England, July 24-29, under the presidency of Major John Seely. Sectional officers will be as follows: sanitary science: president, Sir Arthur Newsholme; secretary, Dr. Charles Porter; maternity, child welfare, school hygiene, and medicine: president, Dr. George Newman; secretary, Dr. George F. Buchan; social and domestic hygiene: president, Mrs. Lefroy, secretary, Dr. H. J. Cates.

**Federation of Medical Associations and Syndicates.**—At a meeting of the Faculty of Medicine of Paris, held recently, a federation was created, by unanimous vote of the delegates of the various associations and syndicates, entitled "La Fédération corporative des médecins de la région Parisienne," for the purpose of promoting the welfare of the medical profession, which was unprotected owing to lack of cooperation. The federation consists of consulting physicians and surgeons, general practitioners and medical students.

**Leper Colony at Bangkok.**—A modern leper colony is planned for Bangkok, Siam. The ministry of local government and the Siamese Red Cross will cooperate in the work. Submission to treatment will be voluntary at first but a segregation law has been proposed which will be enforced as soon as the plans are sufficiently developed and the staff is organized. Chaulmoogra oil treatment will be used, as Siam has a large number of trees from the seeds of which chaulmoogra oil is derived. The number of well developed cases of leprosy in Bangkok alone is estimated at more than 500.

**Bureau of Information for Foreign Physicians in Paris.**—A letter from the Association for the Development of Medical Relations between France and Allied or Friendly Nations states that that organization has established a bureau of information at the Salle Bécarré, Faculté de médecine de Paris, 12 Rue de l'Ecole de Médecine for the purpose of affording to foreign physicians and students any kind of assistance which their studies while in France may necessitate. The secretary will be glad to furnish information and the association is ready to organize courses of lectures on subjects suggested.

**Protest Against Quack Advertisements in the Netherlands.**—The organized pharmacists of the Netherlands, the Green Cross, and the Netherlands Society for Combating Quackery have recently presented a petition to the minister of labor begging him to use his influence to suppress the publication in the daily and weekly lay papers of the advertisements of charlatans. The petition sets forth in plain language the damage of the public health and pocket from such practices, and it is published in full in the *Pharmaceutisch Weekblad*, which reaches all the pharmacists. The *Nederlandsch Tijdschrift* comments on the remarkable absence of medical men in this movement. Comparatively few are likely to learn anything about it.

**The Strike in the Public Utilities at Berlin.**—Our Berlin exchanges relate that the consequences of the strike at Berlin of the employees of the electricity, gas and water works and transportation were most deplorable for the public health. The organized medical profession issued an appeal and protest saying that the sick in the hospitals had to lie in cold, unlighted rooms, with no provisions for washing or getting food cooked. The *Deutsche medizinische Wochenschrift* states that at the Friedrich Children's Hospital, for example, among the hundreds of children were 160 infants, who had to be kept in unheated rooms, with no chance for heating their milk or washing their diapers. No operations could be attempted on account of the lack of light. The nurses went from bed to bed with a kerosene lamp in their hands. Similar conditions prevailed in all the hospitals. The editor appeals to physicians in general to record the cases they encountered in which special injury resulted from these conditions, saying that material thus compiled is to be presented to the government to render the return of such conditions impossible. The *Klinische Wochenschrift* remarks, "The strike lasted only a few days, but every hour of these days resulted in more injury than could be made up in as many weeks." The reports



from hospitals, from practitioners, dentists and pharmacists show absolutely incredible hardships for the sick. "The experiences each physician has had to go through during the strike are in many instances sensational beyond what the wildest imagination could conceive. Such experiences would convince even the lay public of the direct and indirect injury therefrom." The editorial joins in the appeal to physicians to write out their experiences and let them be known so that such ruthlessness can be averted in future. The direct causal connection between privations and injury to health can be shown up in these experiences for public recognition more clearly than there was ever a chance before, and the direct responsibility involved.

#### Deaths in Other Countries

Dr. E. Jendrassik, professor of internal medicine and neurology at the University of Budapest, author of numerous works on organic heart disease, etc., and of Jendrassik's maneuver, aged 63.—Dr. Hellas, a member of the Mount Everest expedition, noted for his research on physiology at high altitudes and for his knowledge of the Himalayas.—Dr. V. Galippe of Auteuil, France, noted for his researches in toxicology, stomatology and bacteriology, especially his denial that copper sulphate is a violent poison. He was 75 years old, and had recently published a work on "Life and Matter."—The *Nederlandsch Tijdschrift* mentions the death of Dr. J. Petri of the German national public health service, of Petri dish fame.—Dr. O. Busse, professor of pathology at the University of Zurich.—Dr. P. Starke of Leipzig, who had long served as secretary of the Leipzig League.—Dr. J. F. Fischer, the leading roentgenologist and radium worker in Denmark, long a sufferer from his pioneer work in this line which had made a number of operations necessary. He served in the Copenhagen city council for the last nine years and took an active part in promoting medical and hygienic progress in Denmark, aged 54.—Dr. M. Navarro of Rio de Janeiro.—Dr. E. Sargent, health officer of Lancashire, England, for twenty-seven years, died recently, aged 73.—Dr. A. M. Sydney-Turner, Sussex, England, formerly editor of *Guy's Hospital Gazette*, died, February 1, aged 73.

## Government Services

### Contemplated Reorganization in Abeyance

The administration has with reluctance given up hope of bringing about a general reorganization of the government at this time. Walter F. Brown, of Ohio, as the representative of the President on the Joint Committee of the two houses of Congress on reorganization of the administrative branch of the government, has submitted a reorganization plan to the President. This plan has been on the President's desk for several weeks. The administration realizes that it will be impossible to accomplish anything during the present session of Congress. This failure to agree on reorganization is a keen disappointment to the President, who has taken the stand that a new department should be created, to be known as the Department of Public Welfare, in which would be grouped the various bureaus relating to public health, sanitation, child welfare and kindred subjects, which are now distributed through half a dozen of the existing departments.

The fundamental difficulty about accomplishing any reorganization that would be worth while is that the department heads, almost without exception, are opposed to surrendering the authority that they now exercise.

The one question as to whether the War and Navy Departments shall be consolidated has been argued for several months by the cabinet and the leaders in Congress, and apparently a decision is still far away. There is also the question as to whether it would be wise to transfer the forest service from the Agriculture Department to the Department of the Interior. The mere proposal that the forest service be transferred from the Department of Agriculture to the Department of Interior has been the occasion for sharp controversy between Secretary Wallace and Secretary Fall, heads, respectively, of these departments.

Meanwhile the leaders in Congress are waiting for Mr. Brown, as the President's representative, to submit his plan for reorganization. The indications now are that President Harding will not submit Mr. Brown's report to Congress, as the cabinet itself cannot agree on the proposed plans of departmental reorganization, and Congress will probably fail

to pass the necessary legislation. Senators and representatives who have devoted some thought to the subject say it is apparent that any plan for reorganization that may be submitted to the legislative body will provoke much debate. The general feeling among the congressional leaders is that nothing will be done about reorganization at this session.

The situation is giving the administration concern because it was proposed, when the new administration came in, that reorganization should go hand in hand with the introduction of the budget system. The budget system is in operation in a successful way, but the efforts of the President to get reorganization started have been unavailing.

### Increased Appropriation for Children's Bureau

The Senate, by an amendment, has increased the appropriations of the children's bureau of the Department of Commerce for the coming year from \$80,000 to \$120,000, to be used to investigate and report on matters pertaining to the welfare of children and child life, and particularly to investigate questions of infant mortality and its causes. In a second deficiency bill, passed by the House of Representatives, an additional appropriation for the present fiscal year was also made to the children's bureau, to carry out the provisions of the maternity and infancy welfare act. The sum totaled \$370,000.

### Increased Appropriation for Veterans' Bureau

Deficiencies in the funds of the U. S. Veterans' Bureau to the total of almost \$100,000,000 are appropriated by a deficiency bill now before Congress. In this measure, the bureau is given an additional \$73,714,182 to continue its vocational rehabilitation program and \$20,278,930 to provide medical and hospital services to disabled war veterans. The director of the bureau is also authorized to allot parts of the appropriations to the U. S. Public Health Service, and the board of managers of the national home of disabled volunteer soldiers, and to the War and Navy Departments, to be used in the care of ex-service men now under treatment.

### Result of Neuropsychiatric Conference

The report of the conference of the neuropsychiatric consultants for consideration of certain problems, relating to care, treatment, compensation, and vocational training of beneficiaries of the U. S. Veterans' Bureau, suffering neuropsychiatric disorders, held February 10-13, at Washington, D. C., contains the following items with reference to special treatment:

*Treatment of the Psychoneuroses.*—In addition to existing provisions for the care of this special class of cases, treatment should, whenever possible, be preceded by a period of careful hospital observation to determine all the individual features of the case. Then treatment in an outpatient department by medical, social service, and vocational methods should be instituted.

*Treatment of Epilepsy.*—The following recommendations are made for the treatment of epileptics:

The mental and social problems of the epileptic beneficiary of the U. S. Veterans' Bureau render him unsuited for segregation as such, and it is wiser to handle the problem according to the progress of the disease.

Those with psychoses should be treated in hospitals in the district in which they reside.

The mild nonpsychotic epileptic should be given adequately supervised dispensary treatment only.

If possible, it would be highly desirable to establish a small, especially selected group for intensive study of the problem as a whole in or near some center well adapted for this purpose.

*Constitutional Psychopathic States.*—Your committee is convinced that psychiatric experience has shown that the mental abnormalities and social problems of those who are of psychopathic constitution, without complication by psychoneuroses or psychoses, can be adequately treated outside of hospitals.

It is recommended, if a thorough medical and psychiatric examination of the beneficiary of the U. S. Veterans' Bureau shows that the abnormalities of the beneficiary are due to psychopathic constitution, uncomplicated by psychosis, psychoneurosis, or physical abnormality, requiring hospital treatment, that the U. S. Veterans' Bureau arrange for their treatment through community supervision (social service).

*Treatment of the Mentally Deficient.*—Mental deficiency needs chiefly outpatient and follow-up treatment in which field work and group organization in special training centers for the purpose of establishing a proper stable level of adjustment and efficiency are most important.

*Treatment of Alcoholics and Drug Addicts.*—It is recommended that the small number of cases of alcoholism and drug addiction in which service connection exists shall be treated for the acute physical or mental condition in government neuropsychiatric hospitals.



## Foreign Letters

### LONDON

(From Our Regular Correspondent)

Feb. 20, 1922.

#### The Claims of Comparative Pathology

Sir Clifford Albutt, in the *Times*, returns to a theme which he first expounded as long ago as 1888—the claims of comparative pathology. He has urged that pathologists work on fragmentary and often abstract lines, too often out of practical touch with disease. True it is that diseases in man, animal and plant are investigated with no little ardor and success, yet each school of students works in its own province, and pathology is still the last of the sciences in which the fertility of the comparative method is ignored. Success is to be won, not by frontal attacks, but by larger lines of strategy, in methods that create opportunities not only for larger movements but also for those chance occasions which open unexpected ways to the center. No thinking man is wholly ignorant of the benefit of the comparative method in the biologic sciences and far beyond them; in the study of evolution, as also in history, in anthropology, and in religion. What we need is an institute, or more than one, in which—to use the words of the foremost pathologist in the United States in a recent letter to Sir Clifford—"the first thought would be comparison." Yet we have no such machinery, no such team work; we have doctors of man, doctors of various animals, doctors even of plants, but each school revolves in its own orbit without cooperation of thought or demonstration. But much new interest is awakening in stock owners and pathologists; something is being done for interchange of experience and knowledge. The Royal Society of Medicine, in a generous and enlightened spirit, has just now thrown open its doors to the veterinary profession and to the students of the diseases of plants, in which disease can be investigated in its simplest forms. It is not improbable that a section on comparative pathology may be established. The British Medical Association, for its meeting in Glasgow next July, will probably arrange a discussion on the same subject, to which students of the diseases of plants and of animals will be invited, whether members of the association or not.

#### Anthropologic Problems

Sir Arthur Keith has begun a series of lectures, at the Royal Institution, on anthropologic problems of the British Isles, which have the usual fascination of his teaching. The world has been searched, he said, for the tailed and other strange races of humanity reported by ancient travelers and none have been found. But it was found that the 1,000 million which made up the population of the modern world, although they differed in feature, stature and color, and qualities of brain, were the progeny of a single ancestral type. If the search for strange types among living races had ended, that for fossil extinct types had just begun. It was revealing a bygone world, inhabited by types of humanity repulsive to our modern standards of beauty. The deeper we dug, more apelike did these fossil men become. There was only one explanation: Darwin's theory was true, and somehow evolution had shaped all the modern races of mankind out of one of these extinct simian-visaged stocks. In the world of humanity, evolution was working now at a greater rate than ever before. Empire builders were Nature's unconscious evolutionary agents. The art of empire building was not new; for 3,000 years before the birth of Christ, the Egyptians and Assyrians were trying their hands at it. In three centuries, the native population of great continents had been

swept away and replaced by human races of a totally different kind. The colonization of Australia, a continent as large as Europe, illustrated why the modern wheel of evolution moved so quickly. Australia proved to be a raft or ark on which a sample of the primitive ancestry of modern man succeeded in floating down the flood of time to our day. The Australian lived in a manner representing a phase through which the native of Egypt and Mesopotamia passed 10,000 years ago. No wonder he shrank from European civilization, for we asked him to ascend at a single stride a ladder which it had taken us 10,000 years to scramble up. In recent years, discoveries had been made which threw light on the antiquity of the Australian. Four years ago, a fossil human skull found in Queensland was described by Dr. S. A. Smith of Sydney University. There could be no doubt that it was a primitive form of the Australian or Tasmanian type and represented a period corresponding to the ice age of Europe. The Australian aborigine was being traced toward an Asiatic cradle, and the period of his emigration southward was clearly much earlier than had been supposed.

#### Fatal Use of the Sigmoidoscope

An inquest has been held on a man who contracted dysentery while serving at Saloniki during the war and who was admitted to a hospital in Leicester for treatment. The sigmoidoscope was used three times for examining the intestine. On the third occasion, it seemed to pass higher up than on the previous occasions, but nothing further was noticed. Next day acute abdominal symptoms developed and laparotomy was performed. A perforation of the intestine was found and dealt with, but death ensued from peritonitis. The verdict returned by the coroner was death from general peritonitis following perforation of the lower intestine, caused by the use of an instrument by a competent person for the necessary examination for dysentery, and that death was due to misadventure.

#### Public Health and Economy

The last thing in the world which the present government appears to desire is economy. In spite of the crushing burden of the war, it has piled expense upon expense. As the resentment of the country has become louder and louder, the government has tardily and reluctantly attempted retrenchment. A committee of business men has been appointed, with Sir Eric Geddes as chairman, to devise a scheme of economy. The committee's report, which suggests "cuts" amounting to \$375,000,000 in government expenditure, has just been published. The cut in the ministry of health's expenditure amounts to \$12,500,000. The manner in which its expenditure has grown is shown by the following figures for the years 1913-1914 and 1922-1923, respectively: tuberculosis, \$585,000 and \$7,000,000; maternity and child welfare, \$55,000 and \$5,800,000. The state treatment of venereal diseases was instituted in 1917-1918, when the expenditure was \$420,000: it now amounts to \$2,100,000. The total expenditure of the ministry has increased from \$585,000 to \$16,000,000. The committee points out that all these grants are of percentages, and the extremely rapid increase of the expenditure indicates, in its opinion, the dangers of the system. It should be replaced by one of block grants. The cost of health insurance to the government (that is, in addition to the contributions of employers and employees) is now \$52,500,000; but in the next year there will be a diminution of about \$5,000,000, which has been brought about by reduction of the capitation grant of panel physicians, described in previous letters (*THE JOURNAL*, Sept. 26, 1921, p. 1349; Nov. 5, 1921, p. 1507; Nov. 19, 1921, p. 1667). The committee considers that the state's burden should be further reduced. It has recommended, therefore, that the contributions of employers and employed be increased by 1 cent per week. This has been done. The cost



of providing treatment for discharged soldiers under the ministry of pensions is \$3,500,000. The ministry maintains 14,000 beds in its hospitals, but as there are 6,500 unoccupied beds in the naval and military hospitals a large number of the ministry's beds could be dispensed with. The allowances made to patients under treatment cost nearly as much as the treatment. Some of the allowances are on a too generous scale and should be reduced.

## PARIS

(From Our Regular Correspondent)

Feb. 17, 1922.

### Death of Dr. Victor Galippe

Dr. Victor Galippe died recently, aged 75. He was the son of a pharmacist of Grandvilliers, department of the Oise. He was born in this region in 1847 and began here the study of pharmacy. He became, successively, preparator of natural history and head of the laboratory of the Ecole des hautes études. He obtained his diploma as a pharmacist, but later he abandoned pharmacy to devote himself to medicine and to biologic research. He specialized in stomatology and published some interesting researches on the parodontal epithelial débris and on the origin and the physiologic rôle of tumors that are derived therefrom. He combated the ideas generally accepted on the syphilitic nature of certain deformities of the teeth. His studies on the heredity of maxillary and dental anomalies led him to write a book, which attracted considerable attention, on the heredity of certain stigmas of degeneration in royal families. During recent years, he has presented to the Academy of Science various articles on the micro-organisms to be found in paper, amber, etc., which are resistant to the action of time (THE JOURNAL, May 22, 1920, p. 1468).

For a long period, Galippe, together with the late Professor Cornil, directed the affairs of the *Journal des connaissances médicales pratiques*. In 1902 he was elected a *membre libre* of the Academy of Medicine.

### Natural Versus Synthetic Camphor

About two years ago, I mentioned the effort that was being made to manufacture synthetic camphor, by reason of the embargo that the Japanese government had placed on the natural product (THE JOURNAL, Feb. 14, 1920, p. 473). Monsieur André Dubosc has recently outlined in a very instructive way the mad and victorious struggle in which the Japanese trust became engaged with the European manufacturers. Synthetic camphor proved to be of such a quality as to constitute a dangerous competitor of the products of the distilleries of Formosa. Its use in celluloid, especially, gave perfect results. This being the case, the Japanese trust tried at first to enter into negotiations with the manufacturers of the artificial product, offering to buy, at good prices, their total output, which would have been sold under the Japanese mark. These offers were not accepted, our manufacturers hoping to become the masters of the market. The Japanese trust then began to lower its price so as to undersell synthetic camphor. It commenced to bleed white the forests of Formosa, thus doubling and tripling production. At the same time, through purchases made by its agents in Bordeaux, it succeeded in raising the price of turpentine, which is the base for synthetic camphor. The price of turpentine rose more than 100 per cent., which proved ruinous to our manufacturers. By lowering finally the price of 1 kg. (2.2 pounds) of camphor to 3 francs, with no limitations as to quantity, which price included freight charges to all European and American ports, the Japanese trust succeeded in giving the *coup de grâce* (finishing stroke) to the manufacture of synthetic camphor. The factories closed, having gone into

bankruptcy. Their equipment was sold and scattered to the four winds. After allowing sufficient time to elapse; that is, when it appeared that there was no possibility of the manufacturers of synthetic camphor getting on their feet again, the Japanese trust raised its prices to 110 and even 120 francs per kilogram. The present price is around 25 francs.

The world's consumption of camphor, in 1914, was approximately 18 million pounds (8,181,818 kg.), and, since the regeneration of camphor forests is slow, it will be seen that there is still a place for synthetic camphor.

### Death of Paul Mounet

The well known artist of the Comédie-Française, Paul Mounet, who died recently, was an *évadé de la médecine* (deserter from the ranks of medicine). He was a successful student of medicine, and continued his medical studies until he secured his doctorate. But, following the example of his illustrious brother, Mounet-Sully, whose entrance into the field of tragedy was so strikingly brilliant, Paul Mounet conceived a passion for the stage and soon after became affiliated with the stock company of the Odéon. The two brothers were closely associated with the late surgeon Pozzi. At the home of the latter, memorable soirées were held at which the great poet Leconte de Lisle was pleased to hear his poems recited by the Mounet brothers.

### The Rockefeller Foundation in Relation to the Suppression of Tuberculosis in France

Dr. F. Williams, director of the Rockefeller Foundation, delivered an address at the Musée Social on the work accomplished by the foundation in France. In 1916, numerous reports reached the United States to the effect that tuberculosis was increasing in France at a rapid rate—not only in the army but also among the civilian population. In January, 1917, the Rockefeller Foundation sent Dr. Herman Biggs to France to study the situation and to learn whether or not it was possible to undertake a campaign against tuberculosis. As the result of this inquiry, the subcommittee of the Rockefeller Foundation, known as the International Health Board, organized a commission composed of Dr. Livingston Farrand (chairman), Dr. James Alexander Miller, Prof. Selskar M. Gunn, Dr. Charles E. White and Mr. Homer Folks, who arrived in France in July, 1917. Soon after the close of the war, the various members of this commission returned to the United States. The present director, Dr. Williams, took over the supervision of the work in March, 1919.

From the beginning, it seemed evident that a program which would require the construction of hospitals and sanatoriums would not be acceptable, not only by reason of the dearth of man power and building material but also because it was realized, at the end of the war, that a more extensive and a more permanent antituberculosis campaign was needed than such as would be involved in the mere construction of buildings. It was hoped that a nation-wide movement might be launched, so that France, as a whole, might eventually be aroused to take part in the campaign against tuberculosis. Accordingly, measures were taken to awaken public interest in the movement, to influence public opinion and to arouse the popular imagination, so that the authorities might be induced to adopt effective measures. As a focus of demonstration and influence, the foundation established in the department of Eure-et-Loir an antituberculosis organization similar to those that exist in America. A similar demonstration, on a smaller scale, was made in the nineteenth arrondissement of Paris.

A propaganda department was organized under the direction of Professor Gunn. The most essential feature of the organization consisted of so-called *équipes de propagande* (propaganda crews or teams), the outfit of such a team com-



prising an autotruck and a complete motion picture equipment, together with a dynamo-electric machine, so that the apparatus could be used in the small towns and villages where no street current was available. The personnel consisted of an American woman who was the director; two lecturers (usually a man and a woman), a courier and a mechanic. The campaign was always begun in the schools. A talk of from fifteen to twenty minutes was followed by a motion picture exhibition demonstrating certain phases of the antituberculosis campaign. The pictures were specially adapted to children. All towns and villages having a population of more than 3,000 were visited. Leaflets setting forth certain phases of the antituberculosis campaign were also distributed among the children. Lectures for adults were given later. The more comprehensive lectures were given only in the larger towns. The prefect or some other official presided. After the lecture, leaflets were distributed among the audience, and more comprehensive pamphlets were given out to invited guests of note. During 1919 and 1920 and the first half of 1921, four teams were at work in France. More than a thousand towns and villages in fifty-three departments were visited. Approximately a million adults and a million children attended the talks and lectures, and 6,000,000 leaflets and pamphlets were distributed. In addition, a special propaganda was carried on directly by the bureau by sending out tracts and brochures, 6,000,000 pieces of printed matter having been distributed in this manner to all the departments of France. A central record office was organized in each department, with which are combined antituberculosis dispensaries. The record office (1) keeps for general inspection a list of all the charitable organizations in the department, from which various forms of aid may be secured; (2) keeps on file the record cards of all the patients watched over by the dispensary, and in case any patient moves to another department or changes his residence within the department, the central record office informs other dispensaries of the fact, so that such individuals may not be deprived of the advantages of the dispensary. Furthermore, the central record office receives the admission and discharge reports of the hospitals and the sanatoriums, so that when a patient leaves a sanatorium in one department to return to his home in another department, a visiting nurse, skilled in hygiene, may visit him on his return. Central record offices are functioning now in seven departments, and nine more are about to be established.

The Rockefeller Foundation has also organized many graduate courses in tuberculosis. These courses, the first of which was given in October, 1919, are now conducted four times a year under the supervision of Professors Léon Bernard, Bezançon and Sergent and of Dr. Rist. The Rockefeller Commission offers to physicians who have been selected to occupy a post in a dispensary (or who are fitting themselves for such an appointment) a scholarship, which defrays, in part, the expenses of their sojourn in Paris, and includes also their traveling expenses to and from Paris and the payment of the laboratory fees exacted by the *Faculté de médecine*. The Rockefeller Commission has granted such scholarships to 264 French and to seventeen Belgian physicians. Italian, Spanish, Roumanian, Czechoslovak, South American, Canadian and English physicians have likewise attended these graduate courses.

To judge of the results secured: In 1917, there were only ten antituberculosis dispensaries, none of which employed visiting nurses. Today there are 350 dispensaries, 250 of which have at least one visiting nurse. About half of the dispensaries are in charge of physicians who have recently taken a graduate course in tuberculosis. There are now eight schools for the training of visiting nurses in the hygienics of tuberculosis; in 1917 there was only one.

## PEKING, CHINA

(From Our Regular Correspondent)

Jan. 1, 1922.

### Dissection and Postmortem Examinations in China

Not long ago, one of the famous scholars of China said that the fundamental reason why the science of medicine in China had not kept pace with that of the West was that in China they had stopped dissection of the human body. In a land steeped in a superstition in which the spirits of the departed play a very active part, and where ancestor worship is still a dominating force, it is not surprising that dissection of the human body has been both difficult and unpopular. And yet China is becoming enlightened. A short time after the founding of the republic, a necropsy was performed at the hospital in Soochow. It was considered a great event. Prominent officials were present and a photograph was taken, which was later inscribed, "The first dissection of the human body in China in 4,000 years." Since that time, opinion has been rapidly changing among the more intelligent classes, and among the less intelligent as well, where there is contact with the West. In Peking, the high officials profess great interest in the matter when they are approached and asked for help. "Certainly," they say, "medical schools must have bodies for dissection, and hospitals must make postmortem examinations for the advancement of science. We will see what can be done about it." Unfortunately, authority lies not with these high officials but with the police. There is great power in the hands of the lower officials, who are close to the people, both in the country and in the cities. The higher officials may suggest, but they do not command. Similarly, the high officials in Peking cannot, or perhaps will not, command the police to cooperate with the medical schools in the matter of obtaining necropsies or dissecting material.

It was with considerable difficulty that the following concessions were obtained from the district police in May, 1921:

1. When a patient dies in the hospital, his relatives, if he has any, may give consent to a necropsy. When the consent is obtained, the police must be notified and the relatives must sign the consent slip in the presence of the police officer.
2. Sick paupers in the working squads of the sanitary department may be sent to the hospital for free treatment. If they are seriously ill and die, and the body is not claimed by a relative, the police must be notified by letter. An officer must come to inspect the body. It must then be embalmed and kept for two months. If no relative claims the body during that time, it may then be used for dissection.
3. A similar procedure must be carried out with all of those who die in the hospital whose bodies are not claimed by relatives.

In the practical working out of this system, it is found that even after relatives have consented to a postmortem examination, great inconvenience is caused by the delay in the response to summons of the police.

### The Departure of Dr. Francis Peabody of Boston

Dr. Francis W. Peabody, professor of medicine at Harvard, who has been acting in an advisory capacity and holding clinics for the department of medicine of the Peking Union Medical College during the first trimester, has left for home. On his way back, he will visit the medical schools of the Shantung Christian University at Tsi-nen-fu and of the Yale-in-China mission at Changsha.

### The Coming of Dr. Brackett of Boston

Dr. E. G. Brackett, editor in chief of the *Journal of Orthopedic Surgery*, formerly colonel, M. C., U. S. Army, and chief of the orthopedic service of the Massachusetts General Hospital, will come to Peking in May and give lectures and hold clinics in orthopedic surgery, under the auspices of the department of surgery of the Peking Union Medical College.

### A Convalescent Hospital

The demand for a place where convalescent patients can complete their treatment outside of the hospital has resulted in the canvass of the staff of the Peking Union Medical Col-



lege and in the collection of a fund sufficient to establish a convalescent hospital not far from the college. It has a capacity of twenty-five beds and will receive patients directly from the wards of the hospital or patients coming from distant places who have to wait for a hospital bed. If there is room, friends of such patients may also be accommodated, for short periods. The estimated budget for this much needed service is slightly less than \$4,000 (Mexican) a year.

#### Chinese Paleontology

The Geological Survey of China has undertaken the preparation and publication of a series of monographs on the remains of the animals and plants which existed in China from the remotest past of its geological history, to the period which preceded the one in which we live today. This is one of the most important and far-reaching scientific undertakings ever contemplated by any eastern nation. The work will be issued under the general title of "Palaeontologia Sinica." For its preparation, the services of trained specialists have been secured, which will insure scientific accuracy and value. The work is divided into four series. Series A will cover the fossil plants which abound in so many coal formations. Series B will contain the descriptions and illustrations of the extinct invertebrate animals which are so numerous in most of the rocks of China. Series C will be devoted to the extinct vertebrates. Series D will describe ancient man in China. Dr. Davidson Black, professor of anatomy at the Peking Union Medical College, will contribute articles in the last series. Several large deposits of ancient human bones recently found have been sent to Peking for examination.

The first volumes of the "Palaeontologia Sinica" are now in press.

#### A New Hospital in Shanghai

A new departure in the practice of medicine in China has been made by a group of foreign trained Chinese physicians and surgeons in Shanghai, who have grouped themselves in order to practice medicine along the lines of group practice in America. They are taking over the Chinese Red Cross hospital, and after complete renovations, will open it for service in general medicine, general surgery, obstetrics and gynecology, orthopedics, and eye, ear, nose and throat diseases, with equipment for laboratory and roentgen-ray examinations. The hospital will have a capacity of sixty beds, half of which will be for ward cases and half for private cases. There will be the freest consultation on cases, and the charges for service will be made by the hospital and not by the individual physician or surgeon.

### Marriages

GIOACHINO PAUL GIAMBABRO, Brooklyn, to Miss Adeline Gloria Sinkiewicz of St. Nicholas, Pa., February 6.

WILLIAM H. BARR, Fountain Springs, Pa., to Miss Marian Meredith of Philadelphia, March 2.

WALTER DICK, Brookville, Pa., to Miss Mary Katherine Geist at Brookville, December 31.

EDWARD D. KING, Covington, Ky., to Miss Genevieve Stuart Race of Cincinnati, February 22.

CHARLES HOLLISTER JUDD to Mrs. Emma McLaughlin, both of Detroit, January 26.

MAXEY GREGG HOFFMAN, Bunker Hill, W. Va., to Miss Ruth Knott, recently.

JOSIAH F. REED to Miss Anna Duncan Wills, both of Harrisburg, Pa., March 15.

JULIUS J. VALENTINE to Mrs. Zola S. Kerns, both of New York City, March 2.

LEON J. GRANT to Mrs. Jessie Morris, both of Brooklyn, February 22.

WILLARD D. MAYER to Miss Adele Siegel, both of Detroit, February 8.

### Deaths

**Albert LeRoy Shelton**, Batang, Tibet, China; Kentucky University Medical Department, Louisville, 1903; was killed by Chinese bandits, February 17. Dr. Shelton was born in Indianapolis, June 9, 1875; during the Spanish-American War enlisted with the 22nd Kansas Regiment; formerly resided in Anthony, Kansas. He was appointed medical missionary of the Disciples of Christ (Christian) Church and was stationed at Batang. In 1920 he was captured by Chinese robbers and held for \$50,000 ransom, but on his release continued his work, and received a permit in 1921 from the Dalai Lama of Tibet to establish a hospital at Lhasa and train medical workers, in recognition of his work among Tibetan soldiers. It was while on this mission that he was murdered.

**Harris Graham**, Beirut, Syria; University of Michigan, Ann Arbor, 1885; professor of pathology and practice of medicine in the School of Medicine of the American University of Beirut since 1889; formerly served on the Board of Missions to Central Turkey as a medical missionary; conversed freely in Arabic, Turkish, French, German, Italian, modern Greek and Armenian; member of the executive committee of the Lebanon Hospital for the Insane, Beirut; died, February 27, aged 60.

**Joseph Lane Hancock**, Chicago; Chicago Medical College, 1888; member of the Illinois State Medical Society and the Chicago Academy of Medicine; fellow of the Entomological Society of London, England; member of the American Association for the Advancement of Science; also an artist and naturalist; author of *Tettigidae of North America*, *Tettigidae of Ceylon* and other works; died, March 12, at the Michael Reese Hospital, aged 57, from heart disease.

**Lewis Holland Munn** ☉ Topeka, Kansas; State University of Iowa College of Medicine, Iowa City, 1880; Bellevue Hospital Medical College, New York City, 1882; treasurer and formerly president of the Kansas Medical Society; specialized in surgery; chief surgeon of Stormont Hospital; member of the Western Surgical and Gynecological Society; and the Western Medical Association; died, February 24, aged 64, from cerebral hemorrhage.

**Sylvester Utter**, Paterson, N. J.; Medical Department of the University of the City of New York, 1885; member of the Medical Society of New Jersey; former mayor of Hawthorne, N. J.; served as a member of the state legislature; for eleven years was director of revenue and finance of Hawthorne County; formerly consulting physician to St. Joseph's Hospital and the Demilt Dispensary, New York City; died, March 1, aged 61.

**Benjamin F. Calhoun**, Beaumont, Texas; Texas Medical College and Hospital, Galveston, 1875; member of the State Medical Association of Texas; formerly president of the state board of health; formerly mayor of Beaumont and president of the Southern Texas Medical Association; at one time member of the school board and city physician; Confederate veteran; died, recently, aged 73.

**Alexander W. Fairbank** ☉ Chazy, N. Y.; Albany Medical College, Albany, N. Y., 1874; consulting physician to the St. Lawrence State Hospital, Ogdensburg, for twenty-one years; member of the board of education; twice served as member of the state legislature; member of the medical board of the Champlain Valley Hospital, Plattsburg, N. Y., where he died, February 18, aged 69, from pneumonia.

**Stanislaus Brzozowski**, Chicago; Louisville Medical College, 1876; formerly health officer of Madison County, La., and received a gold medal from the Louisianians for his services during the yellow fever epidemic there; at one time superintendent of the Marine Hospital, Vicksburg, Miss.; died, February 23, aged 78, at the home of his son, Louisville, Ky., from heart disease.

**Charles C. Givens**, Lewis, Ind.; Louisville Medical College, Louisville, Ky., 1882; member of the Indiana State Medical Association; veteran of the Civil War; died, February 24, aged 72, from pneumonia which developed from concussion of the brain suffered six weeks previously when the automobile in which he was driving was struck by a train.

**Charles Waugh Karsner**, Philadelphia; Jefferson Medical College, Philadelphia, 1878; Hahnemann Medical College and

☉ Indicates "Fellow" of the American Medical Association.



Hospital, Philadelphia, 1875; served in the U. S. Navy, during the Civil War; former assistant medical inspector of Philadelphia; formerly member of the city council; died March 1, aged 71, following an operation.

**William Sterling Maxwell**, Chicago; Medical Department of the University of Wooster, Cleveland, 1891; on the medical board of the Order of the Sons of St. George; served during the late war as medical examiner for the British Army; on the staff of the Lakeside Hospital, where he died, March 9, aged 57, from lobar pneumonia.

**Allen MacKenzie Baines**, Toronto, Ontario, Canada; University of Toronto Faculty of Medicine, Toronto, 1878; Trinity Medical College, Toronto, 1878; L.R.C.P. London, and L.R.C.S. England; associate professor of clinical medicine and pediatrics, University of Toronto; died, January 12, aged 68.

**Martin M. Kittell** ☉ Jamaica, N. Y.; Medical Department of the City of New York, 1891; member of the state legislature 1900; visiting physician to the Mary Immaculate Hospital, the Jamaica Hospital and the Queensboro Hospital for Contagious Diseases; died, March 1, aged 56, from pneumonia.

**Herbert Barker Mason** ☉ Calais, Me.; Boston University School of Medicine, Boston, 1877; formerly president of the Maine Medical Association, and secretary of the Washington County Medical Society; member of the American Association of Anesthetists; died, March 2, aged 66.

**Jesse Smith DeMuth** ☉ Pittsburgh; Bellevue Hospital Medical College, New York City, 1897; veteran of the Spanish-American War; major M. C., U. S. Army, during the World War; died, February 21, at the Presbyterian Hospital, aged 49, from pneumonia.

**George Evans Calhoun** ☉ Uhrichsville, Ohio; Kentucky School of Medicine, Louisville, 1894; served during the World War as lieutenant M. C., U. S. Army; died, February 23, aged 52, at the home of his brother, Canton, Ohio, from a complication of diseases.

**John Clinton Shuman**, Akron, Ohio; College of Physicians and Surgeons, Keokuk, Iowa, 1887; Jefferson Medical College, Philadelphia, 1890; member of the Summit County Medical Society; died, March 24, aged 69, from cerebral hemorrhage.

**Silas W. Hunter**, Wiseburg, Md.; College of Physicians and Surgeons, Baltimore, 1874; former resident physician at Bayview Asylum, Baltimore; died, January 19, aged 72, at the Mercy Hospital, Baltimore, from carcinoma of the stomach.

**Joseph Paul Corgan**, Capac, Mich.; Georgetown University School of Medicine, Washington, D. C., 1915; served in the Philippine Islands during the late war with the rank of lieutenant M. C., U. S. Navy; died, February 23, aged 32.

**Jacob Jones Wilson** ☉ Cumberland, Md.; College of Physicians and Surgeons, Baltimore, 1871; formerly served on the city council; president of the staff of the Western Maryland Hospital, Cumberland; died, February 24, aged 73.

**Charles C. Wallace**, Black Lick, Pa.; Jefferson Medical College, Philadelphia, 1910; served during the World War, M. C., U. S. Army, with the rank of lieutenant; died, February 22, aged 41, at Josephine, from pneumonia.

**George Giles Gobar**, Muscoda, Wis.; Rush Medical College, Chicago, 1891; member of the State Medical Society of Wisconsin; died, March 1, aged 53, from perforated duodenal ulcer with peritonitis and internal hemorrhage.

**Walter Vose Gulick** ☉ Seattle, Wash.; Rush Medical College, Chicago, 1901; formerly member of the staff of the Mayo Clinic, Rochester, Minn.; specialized as a neurologist; died recently, aged 51, from aortic stenosis.

**William Henry Ford**, Herrin, Ill.; St. Louis College of Physicians and Surgeons, 1898; served during the World War as captain, M. C., U. S. Army; died, February 14, aged 44, at Hollywood, Calif., from pneumonia.

**Franklin H. Erb**, Baltimore; Southern Homeopathic Medical College, Baltimore, 1902; member of the Volunteers of America Hospital; died, February 28, aged 60, from septicemia and acute articular rheumatism.

**Elannus R. Birch**, Denison, Texas; Miami Medical College, Cincinnati, 1879; member of the Ohio State Medical Association; member of the school board; surgeon for the Katy Railroad; died, February 27, aged 71.

**John H. Wallace**, Detroit; Western University Faculty of Medicine, London, Ontario, 1921; formerly of Auckland, New

Zealand; died recently, aged 32, at the Detroit Receiving Hospital, from military tuberculosis.

**Charles Earle Locke**, Denver; Bellevue Hospital Medical College, New York City, 1908; veteran of the Civil War and of the Spanish-American War; served two terms in the state senate; died, February 18, aged 76.

**Santos Defendini Rodriguez**, Adjuntas, Porto Rico; Bennett Medical College, Chicago, 1914; member of the Medical Association of Porto Rico; died recently in France from pulmonary tuberculosis, aged 31.

**Harry Stephen Stone**, Franklin, Pa.; Sioux City College of Medicine, Iowa, 1898; member of the Medical Society of the State of Pennsylvania; served during the World War; died, February 16, aged 46.

**James Lucilius Neel**, Bowling Green, Ky.; University of Nashville, 1873; member of the Kentucky State Medical Association; died suddenly, February 28, from cerebral hemorrhage, aged 72.

**George Alexander Oviatt**, South Sudbury, Mass.; Medical Department of Columbia College, New York City, 1875; member of the Massachusetts Medical Society; died, February 26, aged 72.

**Alexander Bryson Osborne**, Hamilton, Ontario, Canada; McGill University Faculty of Medicine, Montreal, 1886; lieutenant colonel, C. A. M. C.; died January 28, aged 59, in London, England.

**Wilbur E. Winsett** ☉ Sioux Falls, S. D.; Chicago Homeopathic Medical College, Chicago, 1895; physician to the state penitentiary, Sioux Falls; died, January 15, from heart disease, aged 53.

**James J. Sinclair**, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1883; College of Physicians and Surgeons, Chicago, 1888; died, March 12, aged 66, from heart disease.

**William P. Kochenour**, Rego, Ind.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1884; died, February 21, aged 73, from pneumonia.

**John B. Nesbitt**, Sycamore, Ill.; Northwestern University Medical School, Chicago, 1897; member of the Illinois State Medical Society; died, February 28, aged 48, from pneumonia.

**Francis George Staples** ☉ Brooklyn; Long Island Hospital College, Brooklyn, 1917; member of the Medical Society of New Jersey; died, February 8, aged 41, in Jersey City, N. J.

**Anna M. McAllister** ☉ Philadelphia; Woman's Medical College of Pennsylvania, Philadelphia, 1873; specialized in otology, laryngology and rhinology; died, recently, aged 72.

**John Alexander Tyler** ☉ Crescent City, Calif.; Vanderbilt University Medical Department, Memphis, Tenn., 1882; died suddenly, February 22, aged 66, from angina pectoris.

**H. F. White**, Mount Vernon, Ill.; St. Louis Medical College, St. Louis, 1859; died, January 2, aged 87, at Mountain Park, Okla., from heart disease.

**Jason Willard Jackman**, Bad Axe, Mich.; Detroit Medical College, 1879; member of the Michigan State Medical Society; died, February 13, aged 73.

**Edward Watkins Christopher**, Blackey, Ky.; University of Louisville Medical Department, Louisville, 1921; died recently from pneumonia, aged 26.

**Nathaniel Howard Boone**, Chandlerville, Ill.; University of Nashville Medical Department, Nashville, Tenn., 1860; died, February 16, aged 85.

**James Monroe Carswell** ☉ Jacksonville, Fla. (licensed by the Florida State Board of Medical Examiners); died, January 30, aged 51.

**J. E. Vann**, Trinity, Texas; Louisville Medical College, Louisville, Ky., 1882; died, January 15, aged 66, from cerebral hemorrhage.

**William Towle Souther**, Worcester, Mass.; Medical School of Harvard University, Boston, 1878; died recently, aged 71.

**Henry W. Jones**, Spiceland, Ind.; Cincinnati College of Medicine and Surgery, 1875; died, February 25, aged 77.

**John Tenbrook Newton**, St. Bernice, Ind.; Rush Medical College, Chicago, 1879; died, January 15, aged 73.

**James Lyman Congdon**, Riverside, Ill.; Rush Medical College, Chicago, 1865; died, March 3, aged 80.

**William H. Sigler**, St. Paul (license, Minnesota, years of practice); died, February 18, aged 80.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

### WARN'S EPILEPSY TREATMENT

In this department of THE JOURNAL for Sept. 24, 1921, there appeared an article on "Maghee's Epilepsy Treatment" a mail-order affair operated by Thomas G. Maghee, M.D., Lander, Wyoming. The Warn's Remedy Company of Los Angeles, Calif., is in the same business as Maghee and there is a striking resemblance both in the products of the two concerns and their advertising methods.

It appears that Warn's Remedy Company is a trade name adopted by Katherine Warn and her son Stanley J. Warn. A comparison of the claims made, respectively, by the Warn Remedy Company and Thomas G. Maghee, indicates a more cautious attitude on the part of the Los Angeles concern. The italics are ours:

#### WARN'S CLAIMS

"In a day or two after commencing the one dose a day, the drowsiness *should* wear off . . ."

"Seizures *should* cease to occur at once."

"Nervousness *should* decrease."

"Complexion *should* clear up, and the mind *should* improve rapidly."

#### MAGHEE'S CLAIMS

"The drowsiness *will* wear off in a day or two after commencing one dose a day . . ."

"Seizures *will* cease to occur at once."

"Nervousness *will* decrease."

"Complexion *will* clear up, and the mind *will* improve rapidly."

Like the Maghee nostrum the "treatment" sells for \$5. An order was sent for one "treatment" and the material turned over to the A. M. A. Laboratory. A summary of the laboratory report follows:

"One original box of 'Warn's Epilepsy Treatment' was submitted to the Chemical Laboratory for examination. The circular accompanying the box bore the statement: 'A treatment containing no bromides, opiates or other narcotics or any habit forming drugs.' In the box were 50 small sized capsules, containing a powdered mixture of black color; the average content of each capsule was 0.093 gm. (1.4 grains). Qualitative tests indicated the presence of wood charcoal, phenobarbital (luminal) traces of iron, magnesium, calcium, potassium and sodium (these traces probably being derived from the charcoal). The amount of ash derived from the preparation was 3.5 per cent.; most of the ash consisted of silicon dioxid (sand). Quantitative determinations indicated the following:

Charcoal .....	28 per cent.
Phenobarbital (luminal) .....	72 per cent.

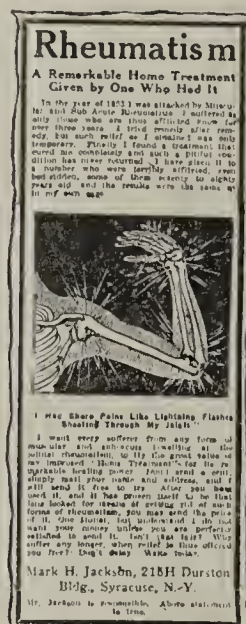
"Each capsule of 'Warn's Epilepsy Treatment' contains, essentially, 0.066 gm. (1 grain) of phenobarbital, to which has been added some charcoal. 'Warn's Epilepsy Treatment' differs but slightly (by absence of bismuth subnitrate) from Maghee's Epilepsy Treatment, analyzed a few months ago."

### MORE MISBRANDED NOSTRUMS

Abstracts of Recent Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

**Devonia Mineral Water.**—In May, 1919, the Devonian Mineral Springs Company, Lorain, Ohio, consigned a quantity of "Devonia Mineral Water" to Kentucky. The water was declared misbranded because it was falsely and fraudulently represented as a natural tonic and reconstructor, a combination of healing properties, that it assisted nature to adjust itself, that it was indicated in chronic indigestion, constipation, rheumatism, neuralgia, nervous debility, high blood pressure, hardening of the arteries and anemia, that it was effective in skin and blood and scalp affections, etc. It was

declared further misbranded because the label was false and misleading with respect to the alleged formula and, furthermore, because the label was not plainly and conspicuously marked to show the true quantity of the contents of the bottle. In January, 1921, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[Notice of Judgment No. 9560; issued Dec. 10, 1921.]



**Jackson's Home Rheumatism Remedy.**—In January and May, 1919, Mark H. Jackson, Syracuse, N. Y., shipped to Massachusetts a quantity of the Home Rheumatism Remedy. This nostrum, when analyzed by the federal chemists, was found to be composed of aloes, licorice, cornstarch and Blaud's mass, each tablet containing  $\frac{1}{2}$  grain of ferrous (iron) carbonate. The product was falsely and fraudulently represented to be effective as a treatment, preventive, remedy and cure for rheumatism, gout, lumbago, sciatica and scrofula "when in truth and in fact it was not." In October, 1920, Jackson pleaded guilty and was fined \$100.—[Notice of Judgment No. 9580; issued Dec. 10, 1921.]

## Correspondence

### "IS THE CONTROL OF DIPHTHERIA LEADING TO ERADICATION?"

**To the Editor:**—In THE JOURNAL, March 4, p. 630, Dr. Cumming draws a conclusion which we believe needs modification. In considering present procedures for the control of diphtheria he does not question the value of the Schick test and of toxin-antitoxin. The immunity, however, produced by toxin-antitoxin is of active and not passive type. The duration of this immunity (seven years in persons observed for that length of time) makes its use of economic value, and at least carries the child through the age period of greatest danger. Obviously, the greater number immunized, the greater will be the reduction in the incidence as well as the mortality of this disease. Cumming's argument that immunization must be carried out with each successive generation is sound, but shall smallpox vaccination be abolished because it must be given to each generation? Any competent physician can administer toxin-antitoxin without a previous Schick test. Therefore a well organized health department is not essential.

There has been no evidence that immunity itself is a stimulus to the carrier condition; it is known, however, that to be a carrier a person must be immune, virulent diphtheria bacilli must have entered in or have reached the outside of his body, and these organisms must have found a suitable field for development. It must be kept in mind that an immune person may become a carrier while a nonimmune may become a carrier only after he has had the disease and recovered from it. Emphasis must be placed on the fact that the carrier condition depends on harboring virulent diphtheria organisms and not organisms having diphtheria morphology.

From the work of Weaver, who isolated virulent organisms from nine carriers, all of whom showed a pathologic condition of the throat or nose or both; of Neuman, who found no diphtheria organisms in 111 normal throats but found them in seven or eight of ninety-five persons with nasal trouble; of Guthrie, who found a pathologic condition of the throat at certain times in all six of the carriers he studied; and from the observations of others, including Reeder, Kretsch-



mer, Lewis, Albert and Moss, it is probable that a pathologic condition of the throat or nose produces a more suitable field for the persistence of these organisms than does the normal throat or nose. If this is true, then the number of carriers will be reduced in proportion to the correction of these defects without reference to immunity.

Carriers in the future will be discovered as in the present by (1) routine examinations in schools, hospitals, institutions, etc.; (2) release cultures, and (3) epidemiologic investigations with laboratory findings. I cannot agree with the statement put forth that "wholesale immunization would give a false sense of security and obscure the necessity of searching for carriers." Would not the mere reduction in incidence stimulate more interest in the residual cases?

To eradicate a disease of the respiratory type by means of sanitary measures directed at its means of transfer is a very difficult problem in comparison with eradication of one transferred by an intermediate host (as in yellow fever); and, while the time may come in the future when the "populace" will be so well educated that the transfer of the respiratory type of disease will be a rarity, in the meantime I fully believe that the use of all biologic measures possible to reduce morbidity and mortality in diphtheria as well as other diseases is to be encouraged.

EMERSON MEGRAIL, M.D., Cleveland.

*To the Editor:*—In THE JOURNAL, March 4, p. 630, Dr. James Gordon Cumming does some very agile figuring to prove that the use of antitoxin has failed to reduce the morbidity in diphtheria since 1890. It seems to me that he has failed to take into consideration the fact that a larger proportion of cases are now diagnosed than at that time—that in 1890 many cases were diagnosed tonsillitis and croup which today, with the more general resort to the laboratory, would be recognized as diphtheria. As most of these patients recovered, the mortality rates given for 1890 were excessive, and, accepting his figures otherwise as correct, while the reduction in mortality would not be so great as he states, there would be an actual reduction in morbidity. Of course, that has no effect on the actual number of lives saved by antitoxin, which is not questioned.

The hypothesis that an extensive application of the Schick test, with active immunization of susceptibles, and the consequent production of a larger number of persons immune to diphtheria, would result in a larger number of carriers, and defeat the end in view, appears to me rather "far fetched," and hardly sufficient to justify any restriction of the use of that test, which Dr. Cumming acknowledges to be "invaluable." Conceding the general accuracy of his contention as to the small effect of antitoxin on morbidity, I believe he is unduly pessimistic.

CHARLES W. ALLEN, M.D., Tarentum, Pa.

#### "A MODIFICATION OF THE FLAGG ANESTHESIA APPARATUS"

*To the Editor:*—The modification of the Flagg anesthesia apparatus submitted by Dr. Richmond Douglass (THE JOURNAL, March 4, p. 648) seems to demand some comment. About seven years ago, I submitted a sketch showing this air vent to my manufacturer, along with a number of other suggestions for the improvement of the inhaler. I failed to press these changes as a routine improvement for several reasons: 1. The use of an air valve, while certainly easier of manipulation and requiring less attention from the anesthetist, has a tendency to change the method from a closed method to a semiopen or approximately open method. 2. A constantly

acting air valve reduces the normally large tidal volume, thereby impeding ether vaporization and affecting the control. 3. It is impossible to judge the quality of the respirations when an air valve is constantly employed. 4. I have invariably returned to my closed method after having resorted to an improvised air valve, such as may be readily made by stripping back the neck of the bag a little distance from its normal position. 5. In an experience of about 10,000 anesthetics personally administered and some 15,000 administered by interns under my instruction, the control and progress of the anesthesia has been satisfactory. 6. There is less waste of ether and less saturation of anesthetist and surgeon when a strictly closed method is employed, this being of some considerable consequence to the active anesthetist.

It is granted that an air valve is helpful to the beginner in the use of closed methods.

PALUEL J. FLAGG, M.D., New York.

#### "A PLETHORA OF PHYSICIANS"

*To the Editor:*—Referring to the statement of a Texas physician relative to the fact that there is a surplus of physicians in rural Texas, I am sure that the same condition holds true in rural eastern Nebraska. Emphatically, there is no shortage. Most of the towns contain two and three times more physicians than are necessary.

PAUL R. HOWARD, M.D., Norfolk, Neb.

### Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

#### VERATRUM VIRIDE IN THE TREATMENT OF PNEUMONIA

*To the Editor:*—Please outline the present authoritative medical opinion in regard to the therapeutic use of veratrum viride, especially in pneumonia. Have any recent pharmacologic studies been made of the drug? Recently I came in contact with a physician of good repute who claims to have used this drug in the treatment of both lobar pneumonia and bronchopneumonia, with good results, in a general practice for about forty years. He advises the use of the drug as early as the diagnosis is made, but has had success when it was started late in the disease. He gives 6 minims (0.37 c.c.) of the tincture by mouth every hour, until the pulse rate is between 75 and 85. The pulse is watched carefully during this period. The frequency of dosage is then decreased in order to keep the pulse rate between the foregoing limits until the disease has progressed, so far as the acute pneumonic symptoms are concerned, to a favorable condition. He asserts that he has had great success with this drug, and that in treating hundreds of pneumonia patients over this long period, he has not had a death in an uncomplicated case. He also claims that several good physicians have adopted the use of this drug after being impressed with its success. This sounded so convincing that I am writing for an opinion.

L. H. JOHNSON, M.D., Washington, D. C.  
Lieutenant, M. C., U. S. Navy.

ANSWER.—Authoritative medical opinion is distinctly adverse to the routine use of veratrum viride in the treatment of uncomplicated pneumonia. Claims like those made in favor of veratrum viride are advanced for quite a number of other drugs, none of which have borne critical investigation. The fundamental error, on the part of those who make these claims, lies in inadequate control observations.

It is not sufficiently appreciated that the natural tendency of the pneumonia patient is to get well, and that it is usually complications that are responsible for a fatal issue. The dictum of Dujardin-Beaumetz that "there is no treatment of pneumonia, there is only a treatment of the pneumonic" has become more and more firmly established with every step in advance in our knowledge of pneumonia.

Pneumonia is not an entity from the etiologic standpoint, as quite a number of different types of bacteria may be responsible for the disease; hence we cannot hope for a routine and uniform etiotropic therapy in this disease.



The pathology of lobar pneumonia and bronchopneumonia is so different that it is *a priori* improbable for any one agent to have a favorable effect on the pathology of these two conditions. Advocates of veratrum viride, aconite and venesection believe that, by the depression of the circulation produced by the treatment, they might lessen the extravasation of blood into the air vesicles and to this degree the involvement of the lungs. The lack of demonstrable success of venesection has led to the discarding of this once almost universally employed mode of treatment of pneumonia. Is it possible for any one to conceive that this would have happened, if the patients that were not bled fared one bit worse than those who were? Veratrum and aconite have been advocated as means of "bleeding and yet saving the blood." It is unreasonable to expect any more, if as much from these agents as from venesection. If there is a shadow of theoretical justification for the use of circulatory depressants in the early stages of lobar pneumonia, by what stretch of imagination can we believe any benefit to come from depressing the circulation in bronchopneumonia?

From the symptomatic standpoint, any treatment is self-condemned that depresses the circulation as a routine in those with low blood pressure and with high blood pressure. While possibly in the latter class of cases depression of the circulation might relieve certain distresses due to the high blood pressure in the pneumonic, just as in the nonpneumonic, depressing the circulation in a patient who is already enfeebled, as might readily occur when the veratrum is started late in the disease, seems little less than criminal.

Regarding the pharmacodynamics of veratrum viride, Horatio C. Wood, Jr., reported in 1906 that the smallest effective dose of veratrum viride produced in dogs and rabbits a slowing of the pulse and a fall of blood pressure which was rather persistent, and that the slowing is due mainly to stimulation of the vagus center. That the fall in blood pressure is not due to direct action on the vasomotor center was shown in 1915 by Pilcher and Sollmann. Toxic doses produced at first an exaggeration of the vagus stimulation as a marked slowing, irregularity, and final arrest with corresponding fall in blood pressure. This is followed by sudden extreme acceleration and rise of blood pressure (partly asphyxial and partly spasmodic). This rise may last for several minutes, and is succeeded by a rapid, progressive fall and death. Other signs of toxicity are profuse sweating, and nausea, followed quickly by vomiting, diarrhea, dysphagia, collapse, paralysis and light convulsions. Collins and Collins and Hanzlik have shown that veratrum album produced marked slowing, together with fall of both systolic and diastolic blood pressure in man. Similar effects have been observed by Hewlett from veratrum viride. Large doses sometimes produced unpleasant gastric and intestinal symptoms, chiefly nausea and vomiting. The effective doses (tincture or fluidextract) are slightly larger for veratrum viride than for veratrum album. This has also been found true for animals.

#### SAFE INVESTMENTS

To the Editor:—I should like to know whether THE JOURNAL has an advisory investment department. Physicians, as a rule, are poor investors because they do not know whom to go to for advice. I have a \$1,000 bond of the New York Central Railroad Company that pays me 7 per cent. Holders of these bonds are taxed in Virginia, both by the commonwealth and by the municipality, in addition to the income (federal) tax. It is my desire to invest this money in some good corporation that would pay at least 7 per cent., naturally with all taxes paid; but I should want the principal safely invested. I have been thinking of buying Crucible Steel, either common at 50 or preferred at 80, which would net me a good interest on my money. I can get 105½ for the bonds. Would you recommend this change as safe, or could you suggest a better investment? One man, a friend, advised me to put it in the Northern Power Company of Minneapolis, which pays 7 per cent. Do you know anything about the company, the management, etc.

M.D., Alexandria, Va.

ANSWER.—It would not be consistent with sound investment to exchange the New York Central Railroad 7 per cent. bond for either the preferred or common stock of the Crucible Steel Company of America—or, for that matter, to exchange it for any stocks. At the present writing Crucible Steel common stock, selling around 57 and paying a dividend at the rate of \$4 a year, and the preferred stock, selling around 83 and paying at the rate of \$7 a year, might appear attractive; but, as is the case with most stocks, there is no certainty that present dividends will be consistently maintained. Earnings may fluctuate as much in the future as they have in the

past, and dividends which may reasonably be expected from such earnings are subject to the same fluctuations. Dividends on these particular stocks have been as follows in recent calendar years:

	Preferred Per Cent.	Common Per Cent.
1907.....	5½	..
1908.....	..	..
1909.....	3¾	..
1910.....	8¾	..
1911-1913.....	7	..
1914.....	3½	..
1915.....	1¾	..
1916.....	13	..
1917.....	25¾	..
1918.....	7	..
1919.....	7	4½
1920.....	7	10

It will be noted that unpaid dividends on the preferred stock were made up in 1916 and 1917, but this was made possible because of enormous war earnings, which are now a thing of the past. The record of this company is similar to that of most other enterprises, even of the most substantial character, and instead of becoming a partner through the purchase of stock it would probably prove far more satisfactory to become a secured creditor of some strong company through the purchase of good bonds.

The New York Central Railroad Company 7 per cent. bond—at this time selling at 106—is a good bond, and possesses a ready market which may recommend it. On the other hand, it is no better than a great many other 7 per cent. bonds which are selling at lower prices because they do not possess quite so good a market. A list of such bonds can be obtained from any first-class bond house or from your banker. Your safest program to follow is to invest only in bonds which the most reliable houses in the business originate and recommend.

In regard to state taxes, you would be in exactly the same position with any other corporation bond as you are with the New York Central bond. Some companies agree to pay the normal federal tax on the income from their bonds up to 2 per cent. (the maximum amount which the government will collect from the source). No part of this tax is paid for you on this bond by the New York Central Railroad, and therefore you can figure that it is costing you \$1.40 a year (2 per cent. on \$70 coupons) to hold this bond instead of a 7 per cent. bond where such tax is paid. It is, of course, possible for you to exchange this bond for a good 7 per cent. bond on which the tax is paid.

You mention the Northern Power Company of Minneapolis, but we believe you must have in mind the Northern States Power Company. The only 7 per cent. bonds which this company has outstanding mature next year, and therefore an exchange to one of these would not seem especially attractive. It would probably be more desirable at this time to obtain bonds which pay a good income for a long period of time.

You say it is your desire to invest in some good corporation that will pay at least 7 per cent. and, naturally, all taxes paid, but that you would want the principal safely invested. We fear that you will be disappointed in this, since only national, state, county and municipal bonds are tax exempt, and none of these will pay over 5 per cent.; in fact, few can be had at a price that will net even this much. A few months ago it would have been possible to carry out your desire.

Unless one's income tax amounts to a very considerable part of the total income, it would be more profitable to own corporation bonds which are not tax exempt rather than to purchase municipal bonds, the best of which now yield only around 4.5 per cent. There are many very desirable bonds which can be purchased at lower prices than 106 when 2 per cent. of the normal tax is paid.

New Organism of Botulinus Group.—The United States Public Health Service has called attention to a report of Dr. I. A. Bengtson that she has demonstrated an anaerobic organism producing a soluble toxin similar to that produced by the bacillus botulinus but which fails to be neutralized by polyvalent botulinus antitoxin. The organism appears to resemble more closely the European type described by von Ermengem in 1912 than the type usually isolated in the United States. The suggestion has been made that this organism causes limber neck in chickens but proof is not yet available.



Medical Education, Registration and  
Hospital Service

COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.

ARKANSAS: Little Rock, May 2-3. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville.

ARKANSAS: Little Rock, May 9. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.

COLORADO: Denver, April 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.

HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.

IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.

ILLINOIS: Chicago, March 27-29. Director, Mr. W. H. H. Miller, Springfield.

IOWA: Des Moines, March 21-23. Sec., Dr. Rodney P. Fagen, Capitol Bldg., Des Moines.

MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.

MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.

NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.

NEVADA: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.

OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, April 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.

RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.

UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

Texas Reciprocity Report

Dr. T. J. Crowe, secretary, Texas State Board of Medical Examiners, reports that 116 candidates, including 26 osteopaths, received physicians' and surgeons' licenses by reciprocity during 1921. One candidate was licensed by endorsement of credentials, and one candidate was licensed on government credentials. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Birmingham Medical College.....	(1915)		Alabama
University of Alabama.....	(1897), (1910)		Alabama
University of Arkansas.....	(1913)		Kansas
College of Medical Evangelists.....	(1917)		California
Denver and Gross College of Medicine.....	(1907)		Colorado
University of Colorado.....	(1920)		Colorado
Howard University .....	(1920)		New Jersey
Atlanta School of Medicine.....	(1908)		Georgia
Chicago College of Medicine and Surgery.....	(1908)		Iowa
Chicago Homeopathic Medical College.....	(1894)		Wisconsin
Illinois Medical College.....	(1907)		Louisiana
Loyola University .....	(1917)		Illinois
Northwestern University.....	(1904), (1920, 2)		Illinois
Rush Medical College.....	(1890)		Ohio
Indiana Medical College.....	(1906)		Oklahoma
Indiana University .....	(1920)		Indiana
Medical College of Indiana.....	(1902)		Indiana
Drake University .....	(1908)		Iowa
University of Kansas School of Medicine.....	(1915)		Kansas
Hospital College of Medicine, Louisville.....	(1903)		Kentucky
Kentucky School of Medicine.....	(1893)		Oklahoma
University of Louisville Medical Department.....	(1891)		Tennessee
(1896) Missouri, (1907) Mississippi, (1911) Kentucky, (1912) Louisiana, (1916), (1917) Kentucky			
Tulane University....(1911), (1914), (1916), (1917), (1920, 4) Louisiana, (1921) Alabama, Louisiana			
Johns Hopkins University.....(1913) Maryland, (1917) (1919), (1920) Maryland			Missouri
Harvard University .....	(1918)		Minnesota
Detroit College of Medicine and Surgery.....	(1915)		Michigan
Barnes Medical College.....(1898), (1904)			Missouri
(1907) Illinois, Kansas, North Dakota			
College of Phys. and Surgeons, Kansas City, Mo....(1875)			Missouri
Eclectic Medical University, Kansas City, Mo....(1914)			Arkansas
Kansas City College of Medicine and Surgery.....(1920)			Arkansas
Kansas City Medical College.....(1891)			Oklahoma
National University of Arts and Sciences.....(1918)			Missouri
St. Louis University School of Medicine.....(1906)			Missouri
(1915) Illinois, (1916) California			
University Medical College of Kansas City.....(1904)			Missouri
Oklahoma, (1905) Kansas, (1911) Missouri			
Washington University.....(1902) Illinois, (1910) Kansas, Missouri			
Lincoln Medical College.....(1910)			Nebraska
University of Nebraska.....(1905)			Nebraska
Long Island College Hospital.....(1895)			New York
(1905) California, (1914) New York			
Medical College of Ohio.....(1897)			Ohio
Jefferson Medical College.....(1911)			Penna.
(1916) Mississippi, (1920) North Carolina			
University of Pennsylvania.....(1919)			Tennessee

Chattanooga Medical College.....	(1900)	Alabama
College of Physicians and Surgeons, Memphis.....	(1911)	Tennessee
Lincoln Memorial University.....	(1916)	Tennessee
Meharry Medical College.....	(1920)	Tennessee
University of Nashville.....	(1911)	Mississippi
University of Tennessee.....	(1908)	Tennessee
Vanderbilt University.....	(1901)	Alabama, (1912) Kentucky
(1913), (1916), (1920), (1921) Tennessee		
School of Medicine of Nuevo Leon.....	(1891)*	Arizona
Osteopaths.....	Arkansas (1), Maryland (1), Michigan (1), Minnesota (1), Missouri (21), Oklahoma (1)	

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
George Washington University.....	(1910)		U. S. Army
University of Texas.....	(1916)		N. B. M. Ex.
* Graduation not verified.			

Washington January Examination

Mr. William Melville, secretary, Washington Department of Licenses, reports the written examination held at Spokane, Jan. 4-6, 1921. The examination covered 13 subjects and included 130 questions. An average of 75 per cent. was required to pass. Of the 7 candidates examined, 4 passed and 3 failed. Fifty-six candidates were licensed by reciprocity. One candidate was licensed by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Number Licensed
Johns Hopkins University.....	(1919)		1
Dartmouth Medical School.....	(1903)		1
Medical College of the State of South Carolina.....	(1919)		1
University of Manitoba.....	(1915)		1
FAILED			
College of Physicians and Surgeons.....	(1892)		1
Hahnemann Medical College and Hospital of Chicago..	(1903)		1
Loyola University .....	(1918)		1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Leland Stanford University.....	(1916)		California
University of California.....	(1907)		California
American Medical Missionary College.....	(1906)		Illinois
Bennett College of Eclectic Medicine and Surgery....	(1897)		N. Dakota
Chicago College of Medicine and Surgery..(1910, 2), (1915)			Illinois
College of Physicians and Surgeons, Chicago.....	(1904)		Illinois
(1905), (1906) Montana			
Hahnemann Medical College and Hospital of Chicago .....	(1894), (1895) Montana, (1906)		Illinois
Loyola University .....	(1917)		Illinois
Northwestern Univ..(1907), (1910), (1915), (1918), (1920)			Illinois
Rush Medical College.....(1897) Minnesota, (1900)			Montana
(1912) Nebraska, (1913), (1916) Montana, (1915), (1918), (1920) Illinois			
University of Illinois.....	(1913) Wisconsin, (1918)		Illinois
Sioux City College of Medicine.....	(1905)		Iowa
State University of Iowa College of Medicine.....	(1918)		Iowa
State University of Iowa College of Homeo Med....	(1913)		Iowa
Kansas Medical College, Topeka.....	(1909)		Montana
Hospital College of Medicine, Louisville.....	(1906)		Oklahoma
Baltimore Medical College.....	(1899)		Penna.
University of Maryland.....	(1902)		Minnesota
Harvard University .....	(1905)		Minnesota
Detroit College of Medicine and Surgery.....	(1904)		Montana
(1911), (1914) Michigan			
University of Michigan Medical School.....	(1904)		Montana
University of Minnesota Medical School.....	(1899)		Montana
Central Medical College of St. Joseph.....	(1898)		Wisconsin
Kansas City Medical College.....	(1902)		Oklahoma
St. Louis University School of Medicine.....	(1903)		Illinois
(1908) Montana			
University Medical College of Kansas City.....	(1905)		Kansas
(1910) Montana			
Washington University .....	(1911)		Wyoming
Dartmouth Medical School.....	(1911)		Montana
Albany Medical College.....	(1906)		Montana
Medico-Chirurgical College of Philadelphia.....	(1898)		Idaho
Vanderbilt University .....	(1905)		Tennessee
Queens University .....	(1914)		Iowa
Western University .....	(1906)		Nebraska
University of Munich.....	(1912)		Wyoming

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Northwestern University .....	(1918)		N. B. M. Ex.

Connecticut November Examination

Dr. E. C. M. Hall, secretary, Homeopathic Medical Examining Board, reports that one candidate was examined and passed and one candidate was licensed by reciprocity at the meeting held at New Haven, Nov. 8, 1921. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Hahnemann Medical Coll. and Hosp. of Philadelphia...	(1921)		87
LICENSED BY RECIPROCITY			
College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Southwest School of Medicine and Hospital.....	(1915)		Missouri



## Book Notices

**INDUSTRIAL FATIGUE AND EFFICIENCY.** By H. M. Vernon, M.A., M.D., Investigator for the Industrial Fatigue Research Board. Cloth. Price, \$5. Pp. 264. New York: E. P. Dutton & Co., 1921.

This is a practical consideration of industrial problems, the information presented relating only to workshop practice and having no basis in laboratory studies. Fatigue has been measured directly in the shop. Curves are presented of the hourly and daily output, the output in relation to weekly hours of work, the output in relation to various industries, and the advantages of six hour days and multiple shifts, of work spells and rest periods. Other chapters deal with lost time and its causation, sickness, industrial accidents and factory conditions. The final chapter is devoted to practical conclusions as to how such studies are to be conducted and as to the way in which principles of industrial efficiency may best be formulated.

**BOWEL DISEASES IN THE TROPICS: CHOLERA, DYSENTERIES, LIVER ABSCESS AND SPRUE.** By Sir Leonard Rogers, C.I.E., M.D., F.R.C.P., Extra Physician for Clinical Research and Lecturer in Tropical Medicine, London School of Tropical Medicine. Cloth. Price, \$9. Pp. 475, with 8 illustrations. New York: Oxford University Press, 1921.

The chapters on cholera occupy the first 200 pages, those on the dysenteries and liver abscess the following 260, and the chapter on hill diarrhea and sprue the remaining pages. In reality, two earlier books by the same author on cholera and the dysenteries have been combined, after extensive rewriting and revising, into one modern, thorough and comprehensive work. The extensive history of the epidemics of cholera should prove of special interest to epidemiologists, while the parts dealing with the clinical course, diagnosis and treatment of the most important bowel infections of the tropics cannot but prove of great value to all physicians who are at all concerned in these diseases.

**LA TUBERCULOSE PULMONAIRE.** Études de Phthisiologie Clinique et Sociale. Par Léon Bernard, Professeur à la Faculté de Médecine de Paris. Paper. Price, 10 francs, net. Pp. 258. Paris: Masson et Cie, 1921.

This is a collection of studies on various phases of pulmonary tuberculosis, such as infection and immunity; chronic forms; elements of prognosis; bronchitis and emphysema in the tuberculous; tracheobronchial adenopathy; artificial pneumothorax; specific medication; social prophylaxis, and compulsory notification. The work takes up subjects usually slurred over by the stereotyped textbook. The author frequently states that the severity of tuberculous infection is in proportion to the size of the dose of bacilli. In this connection, he treats of the tuberculosis of infancy and of later childhood. He holds the opinion that those children who survive the early attacks of tuberculosis will succumb in later life only if subjected to reinfection. He notes that, at necropsy, small children who have died of massive tuberculous infection present extensive gland lesions, while adults present few such glandular changes, but much tissue destruction. He also points out that this extensive lung destruction is not found in the child. Further, he insists, with justice, it would seem, that such calcified lymphatic glands as are found in the adult at necropsy could never have been such large cheesy masses as are found in children after death. He thinks, therefore, that such persons as come to necropsy in adult age have had but small doses of bacilli in infancy, and they have succumbed to repeated massive infection shortly before their adult breakdown; in support of the preceding, Bernard refers to experiments on guinea-pigs. He would abolish the idea of stages or degrees of tuberculosis of the lung, chiefly because of the inability of clinicians to agree as to what constitutes "stages." It is of more importance, he thinks, to determine whether the lesion is active or inactive—truly, a sensible idea. The adoption of such a scheme would throw Turban's and other classifications into the discard. This plan would seem to be of far more use to the general practitioner than the present scheme of mapping out the area involved, particularly as Bernard wisely points out that one cannot determine the severity of the disease from

the extent of the lesion. Interesting chapters are those on caseous pneumonia, emphysema and the elements of prognosis. Too much space is spent on the cutaneous reaction and on specific medication, although, as regards the latter, the author succeeds in relegating the flood of tuberculins to the limbo of inefficacy. Bernard has had no unpleasant experiences with artificial pneumothorax, and voices no warning as to untoward happenings, which might lead one to question the breadth of his experience. He attributes the improvement following lung collapse to the immobilization of the lung, rather than to the inhibition of the lymphatic flow. More than seventy-five pages are devoted to dispensary establishment and management, sanatoriums and hospitals, to a recital of public prophylactic measures, and to an appeal to the medical public to support compulsory notification. We gather, when we read that the chief campaign against tuberculosis began as a war measure to succor returned tuberculous soldiers, that the fight against tuberculosis is not very far along in France. One cannot read Bernard without acknowledging his soundness as a clinician and as a student of the public health, and yet one has the feeling of narrowness. One might imagine, when one notes the paucity of reference to work and authors other than French, that France had been cut off from the rest of the world. This is a fault common with European writers, for which allowance must be made.

**DOMICILIARY TREATMENT OF TUBERCULOSIS.** By F. Rufenacht Walters, M.D., B.S., M.R.C.P., Joint Tuberculosis Officer for Surrey. Cloth. Price, \$4. Pp. 290. New York: William Wood & Co., 1921.

Dr. Walters' handbook for practitioners is based on his experience as a tuberculosis officer and as the attending physician in a sanatorium. It follows the general plan of most handbooks in its discussion of rest, ventilation, open air, and the prevention of infection. Dr. Walters is apparently a therapeutic optimist. He continues to believe in the valuable effects of tuberculin, and in a large majority of drug preparations and serums, both of known and unknown composition, which have been used from time to time in the treatment of this disease. These beliefs have long since passed from the best American views as to what is proper in the therapy of tuberculosis.

**HOW TO LIVE.** Rules for Healthful Living Based on Modern Science. By Irving Fisher, Professor of Political Economy, Yale University, and Eugene Lyman Fisk, M.D., Medical Director of the Life Extension Institute, Inc. Authorized by and Prepared in Collaboration with the Hygiene Reference Board of the Life Extension Institute, Inc. Fifteenth edition. Cloth. Price, \$1.50. Pp. 461, with illustrations. New York: Funk & Wagnalls Company, 1921.

The fourteenth edition of this book was published in 1918. The fifteenth edition, which was first published in 1919, is now passing through the fifth printing. It is devoted to the teaching of individual hygiene under the general headings of air, food, poisons, activity and hygiene, with supplemental notes on such matters as posture, alcohol, tobacco and eugenics. It is a safe and sane presentation of the subject.

**THE PREVENTION OF MALARIA IN THE FEDERATED MALAY STATES.** A Record of Twenty Years' Progress. By Malcolm Watson, M.D., C.M., D.P.H., Chief Medical Officer, Estate Hospital's Association, Klang, F. M. S. With contributions by P. S. Hunter, M.A., M.B., D.P.H., Deputy Health Officer, Singapore, and A. R. Wellington, M.R.C.S., L.R.C.P., D.P.H., Senior Health Officer, Federated Malay States. Preface by Sir Ronald Ross, K.C.B., K.C.M.G., F.R.C.S., Second edition. Cloth. Price, \$12 net. Pp. 381, with 115 illustrations. New York: E. P. Dutton & Company, 1921.

This is a valuable description of antimalarial measures by drainage and otherwise which will be of special interest to others engaged in practical campaigns against malaria.

**THE ALLEN (STARVATION) TREATMENT OF DIABETES WITH A SERIES OF GRADUATED DIETS.** By Lewis Webb Hill, M.D., Junior Assistant Visiting Physician, Children's Hospital, Boston, and Rena S. Eckman. With an Introduction by Richard C. Cabot, M.D. Fourth edition. Cloth. Price, \$1.75. Pp. 140. Boston: W. M. Leonard, 1921.

This booklet makes available to patients the necessary facts regarding diet in the treatment of diabetes. It includes a graduated series of forty-eight dietary tables providing from 47 to 2,062 calories. In addition, there are thirty pages of recipes and ten pages devoted to food values and diabetic foods.



## Medicolegal

### Patient's Ignorance No Excuse for Refusal to Follow Advice or Obtain Roentgenogram

(*Carey v. Mercer (Mass.)*, 132 N. E. R. 353)

The Supreme Judicial Court of Massachusetts, in sustaining exceptions to a judgment recovered by the plaintiff, says that the plaintiff's evidence tended to show that the defendant physician was negligent in failing to have a roentgenogram taken of the plaintiff's leg, which would have disclosed a fracture at the knee joint. On the other hand, there was evidence that the defendant advised the plaintiff to have the roentgenogram taken, but that the plaintiff declined because of the expense involved. Furthermore, the defendant requested a ruling that, if the jury found that the roentgenogram was required to determine whether any bone of the plaintiff's leg was broken and that he had been so informed by the defendant and declined to have a roentgenogram taken, then the defendant was not responsible for not discovering the broken bone. That instruction should have been given.

The jury were instructed to the following effect:

"When a manual examination or an ordinary examination is made by a physician called to a case in which a suspicion of fracture may be present, it may be possible to determine the fracture without it; and if the examination discloses no fracture but there are symptoms present which to the ordinary and average physician would, in your opinion, require the further verification by a roentgen-ray machine, and the physician fails to have a roentgenogram taken or at least to urge it on his patient, he would be negligent. Now you observe perhaps in that last statement a qualification. Ordinarily those of us who become ill or injured are quite willing to place ourselves entirely at the disposition of the physician we call and follow his advice carefully. Others possibly at times decline the physician's advice. It is no part the duty of a physician who has advised what, in his opinion, and what would, in your opinion, according to the standard of ordinary skill in the community, be necessary for the proper treatment of the case, to insist on it against objection on the part of the patient; but you would have to find that the patient fully understood and was informed of the reasonableness of the requirement and refused to follow the physician's advice, with a full knowledge of the consequences he was bringing on himself, in order to justify the failure of a physician to take a roentgenogram, or to treat the patient in any other manner, solely because the patient refused to submit to the treatment or to follow the physician's advice."

There was error in that part of the instruction, "You would have to find that the patient fully understood and was informed of the reasonableness of the requirement, and refused to follow the physician's advice, with a full knowledge of the consequences he was bringing on himself." That was not a correct statement of the law. If the roentgenogram was not taken because of the plaintiff's refusal, the defendant could not be charged with negligence in that respect. He was responsible to the plaintiff for failure to use the care and skill of an ordinary practitioner in the community where he practiced his profession. If a roentgenogram was essential in order to discover the fracture, and the physician, in the exercise of that degree of care required of him, advised that it be taken and the patient refused that advice, the physician could not be charged with negligence. The plaintiff could not hold the defendant responsible for the consequences of his own want of care, nor attribute to him damages resulting from his own neglect; and he could not complain if injury resulted from his refusal to follow the advice of the attending physician. A patient, when he places himself in the care of a physician, cannot decline to follow his advice nor adopt his suggestions because the patient does not possess full knowledge of the dangers involved in his own neglect, or in his failure to do what the physician recommends. The patient cannot charge the physician with negligence if the patient himself refuses to carry out the directions because ignorant of the consequences which might result

from such failure. The patient may fail to understand fully the necessity of doing what the physician recommends, but he cannot attribute to the physician the damages which resulted from his own failure to have something done, when this was caused by his own conduct, even if he was ignorant of the consequences which would result from his refusal. If the rule were as quoted, it would place an unreasonable burden on the physician.

### "Naproathy" Described and Practice of It Held to Be Illegal

(*Carpenter v. State (Neb.)*, 184 N. W. R. 941)

The Supreme Court of Nebraska, in affirming a judgment of conviction of defendant Carpenter of the illegal practice of medicine for a stated fee, holds that the statute of that state regulating the practice of medicine is not void as discriminatory because it fails to provide that persons desiring to practice "naproathy" may treat diseases without examination. The court says that the defendant was allowed to testify that naproathy is a drugless method of treatment of diseases or disorders of the human body discovered or founded about fifteen years ago, and that he did not treat cases of obstetrics or of broken bones. He thus stated the theory of treatment:

We believe that the innate property of ligamentous tissue to shrink up from injury results very frequently in damage to the nerves which go through the spinal column to the different parts of the body, and thus the impairment to nerves due to this contracting property of the ligamentous tissue results in shutting off the nerves in there, or possibly irritation of the nerves, so that the organs or parts thus supplied do not act in a normally functioning way.

The defendant further testified that he treated the ligaments by using manual force on the bones to which the ligaments were attached, using the prominences of the bones as a lever to stretch the shrunken ligaments, which are for the most part attached to the vertebrae. Another witness, when asked to state the difference between chiropractic and osteopathy, on the one hand, and naproathy, on the other, testified:

As far as I can see, they are opposite in this regard: The chiropractor works on the basis of bones out of place, works on the basis of putting them back in place, makes up his treatment as he goes along; in other words, without chart or bookkeeping. The naproath says we should do all work with a chart, work on the basis it's a ligatight, not bone out of place; a ligatight is a shrunken ligament, and on the basis we should stretch those shrunken ligaments. Without any accusations against the chiropractor, the chiropractor is the same as the osteopath, as far as I can see in theory and action.

There was no error in a refusal to instruct the jury to the effect that the law permits any person to treat diseases or physical ailments of others through the administration of household remedies, and that by such administration is meant the use of any agency, "such as massage or the exercise of the muscles or nerves by external physical manipulation, when such use of either or any of such agencies is frequently applied by members of a family or household in which one may be suffering some physical or mental ailment, or by neighbors, or by any other person called in for advice for such ailments." Use in Bohemia or in the families of immigrants from Europe of rubbing or manipulation of the spine would not establish that the practice of naproathy as described is an "ordinary household remedy" in this country.

There are but few relations in life in which there is a greater feeling of dependence, trust and confidence than in the relation between a patient and his physician. The very use of the title "Doctor" to the average mind implies peculiar skill and knowledge, and invites faith and confidence, and it is entirely proper to protect the public from ignorant or incompetent men or women professing to be competent physicians. Such laws, no doubt, in some cases prevent a man of greater ability, or better education, than some of those having the legal qualifications, from practicing, and seem unjust in isolated cases; but it is impossible to legislate to meet every individual case, and some latitude must be allowed in order to attain the necessary and proper object to be attained—the protection of the public from quacks. The legislature cannot be expected to anticipate the founding of new systems of thought or methods of healing, and neither can the state board of health be required to anticipate every new idea in the drugless treatment of diseases. Unless so provided by



the legislature, it is not incumbent on the state board of health to furnish means for examining the qualifications of all persons desiring to treat patients by drugless or other methods of healing for fee or reward, and to fail to do so is not a denial of any constitutional right.

### Sunstroke a Bodily Injury Through Accidental Means

(*Richards v. Standard Acc. Inc. Co. (Utah)*, 200 Pac. R. 1017)

The Supreme Court of Utah affirms a judgment for \$15,000 in favor of the beneficiary of an accident insurance policy in a case in which the insured died as the result of a sunstroke on the desert in Arizona. The insurance was against "loss resulting from bodily injuries effected . . . through accidental means." Physicians who testified for the defendant declared sunstroke to be a disease, and some of them said that all medical authorities pronounce it a disease, usually called "thermic fever," a synonym for sunstroke. Furthermore, the court says that the medical books describe sunstroke as a disease and every standard encyclopedia does the same. Besides, a formidable array of authorities hold sunstroke to be a disease and therefore not embraced within the words "bodily injury." Nevertheless, it is not deniable that when considered in its popular sense sunstroke is a bodily injury and an accident. So, applying the rule that the parties to a contract of insurance are conclusively presumed to have intended the term as it is ordinarily understood by the average man, it is clearly manifest that sunstroke was covered by the words "bodily injuries through accidental means."

### Damages for Malpractice—Cross-Examining of Experts

(*Bonderson v. Hovde et al. (Minn.)*, 184 N. W. R. 853)

The Supreme Court of Minnesota, in affirming an order denying the defendants a new trial after the plaintiff had received a verdict for \$5,000 damages for alleged malpractice in the treatment of his daughter, 14 years of age, says that the girl sustained a fracture of the left arm near the wrist. She was taken to the defendants, who reduced the fracture and put the arm in splints. She went to them for treatment from time to time during a period of about three weeks. Then it developed that there were sores under the bandages and that a septic condition had set in. There was dead tissue and part of the bone was dead. Thereupon, she received treatment from other physicians and surgeons. As a result of the diseased condition that developed, the hand and a part of the arm became deformed and there was a permanent loss of much of the use of them. This action was brought to recover damages on the theory of malpractice. The evidence was in conflict. The plaintiff contended that the bandages placed on the arm were wrapped too tightly, that the girl complained of this from time to time, and that the defendants told her it was all right. There was expert medical testimony to the effect that the tight wrapping of the bandages was a cause of the diseased condition of the arm. The court regards the evidence as sufficient to sustain the jury's finding that the patient suffered injury through negligent treatment on the part of the defendants, although there were some inconsistencies in the testimony of the witnesses for the plaintiff and the evidence was far from conclusive.

The defendants contended that the damages awarded were excessive, and in this connection argued that there was no proof that the loss of the portion of bone was due to the tight bandages. But the court need not stop to consider whether or not the evidence contained sufficient proof on this point, for, aside from the loss of the bone, the condition of the arm was such that, if liability existed at all, a verdict for \$5,000 was not excessive.

The plaintiff called medical experts to give opinion evidence as to the cause of the diseased condition of the arm, based on assumption of facts as shown by the testimony on behalf of the plaintiff. On cross-examination, the defendant's counsel sought to elicit an opinion from these witnesses based on an assumption of facts as claimed by the defendants. The facts assumed were not then in evidence. The trial court rejected this testimony. This was assigned as error. The supreme court thinks there was no reversible error. The

supreme court fully agrees with counsel for the defendant that wide latitude should be allowed on cross-examination of medical experts, and says it is altogether probable that if the court had permitted the cross-examination there would have been no reversible error. Counsel may even be permitted on cross-examination, for the purpose of testing the skill and accuracy of the expert witnesses, to ask hypothetical questions pertinent to the inquiry, assuming facts having no foundation in the evidence. But the range of such cross-examination must rest largely in the discretion of the trial court, and the supreme court thinks there was no abuse of discretion in this case.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
- American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
- American Congress on Internal Med., Rochester and Minneapolis, April 3-8. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.
- American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis 104 S. Michigan Ave., Chicago, Secretary.
- American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
- American Laryng., Rhinol. and Otolological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
- American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
- American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
- American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
- American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
- American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia, Secretary.
- American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
- Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
- Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
- Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
- Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
- Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dyc, Clarksdale, Secretary.
- Missouri State Medical Association, Excelsior Springs, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
- Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
- New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
- North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
- Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
- South Carolina Medical Association, Roek Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
- Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.
- Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### American Journal of Obstetrics and Gynecology, St. Louis

February, 1922, 3, No. 2

- \*Use of Radium in Cancer of Female Generative Organs. H. Bailey and E. Quimby, New York.—p. 117.
- \*Action of Commoner Ecboles in First Stage of Labor. M. P. Rucker, Richmond, Va.—p. 134.
- Ten Years of Painless Childbirth. G. C. Mosher, Kansas City, Mo.—p. 142.
- \*Analysis of Potter Version. E. Speidel, Louisville.—p. 150.
- Treatment of Eclampsia; Then and Now. J. F. Moran, Washington, D. C.—p. 155.
- \*Origin of Bleeding in Ectopic Pregnancy. J. O. Polak and T. S. Welton, Brooklyn, N. Y.—p. 164.
- \*Pituitary Extract at Beginning of Third Stage of Labor. Its Use in 100 Cases. G. L. Brodhead and E. G. Langrock, New York.—p. 170.
- \*Three Cases of Rare Ovarian Anomaly. J. C. Janney, Boston.—p. 173.

**Radium in Cancer of Female Generative Organs.**—Bailey and Quimby are enthusiasts over their results from the use of radium in the treatment of cancer of the female generative organs, which they assert cannot be duplicated without the use of massive doses of radium or without thoroughly radiating the parametrium.

**Action of Ecboles in First Stage of Labor.**—Rucker's observations would seem to show that hyoscin has a moderate, but rather constant, ecboles action in the first stage of labor. The action of quinin is more variable; sometimes it markedly strengthens the normal rhythmic contractions and sometimes it shows no action whatever. The possibility of an inert preparation of ergotol and the fluid extract of ergot is a real one. In the three cases in which a pituitary extract was used, even in minute doses, there was a continued contraction of the uterus that varied from none to thirty-five minutes in duration. Rucker suggests that this is probably the explanation of the many disasters that have followed its use.

**Potter Version.**—Speidel has found the Potter version of special service in cases with apparently normal diameters but a lack of progress in labor in spite of good pains. In such instances there is generally found premature ossification and, in consequence, nonmolding of the fetal head or an over-developed fetal head.

**Origin of Bleeding in Ectopic Pregnancy.**—Studies made by Polak and Welton have shown that a decidual reaction may be found at several points in the tube in ectopic points often far remote from the seat of implantation. Coincident with the separation or death of the ovum by hemorrhage into the decidua, there is bleeding from the uterus and also bleeding from the several points of decidual reaction in the tube. Tubal peristalsis and the vis a tergo of the clot in the tube, expels blood from the abdominal ostium into the peritoneum, which gravitates into the culdesac. The same factors contribute a portion of the blood, making up the bloody discharge from the uterus, which signifies the separation or death of the embryo.

**Pituitary Extract at Beginning of Third Stage of Labor.**—It is stated that the only drawback to the method used by Brodhead and Langrock is the possible existence of irregular or hour-glass contraction of the uterus; however, this complication occurs independently of the use of pituitary extract and further investigation will be necessary to show whether this complication is directly attributable to the method or not.

**Ovarian Anomaly: Uterine Tissue in Ovary.**—The three cases reported by Janney showed the occurrence of uterine tissue in the ovary. They occurred in a total of 4,853 pathologic specimens examined. They were all discovered incidentally, the operations having been performed for other conditions which had not directed attention primarily to the ovaries.

#### American Journal of Ophthalmology, Chicago

February, 1922, 5, No. 2

- Method of Preventing Loss of Vitreous. F. Frisch, Atlantic City, N. J.—p. 81.
- Professor Barraquer of Barcelona and His Method of Phakoeresis. J. O. McReynolds, Dallas, Texas.—p. 83.
- Vacuum Extraction of Cataracts. C. E. McDannald, New York.—p. 90.
- Vacuum Method of Intracapsular Cataract Extraction. A. S. Green and L. D. Green, San Francisco.—p. 92.
- Results of Cataract Operations Performed by Colonel Henry Smith at Wills Hospital, Philadelphia. W. Zentmayer, Philadelphia.—p. 97.
- Snowball Vitreous Opacities: Additional Cases. T. B. Holloway, Philadelphia.—p. 100.
- Visual Pathway and Paranasal Sinuses. J. P. Schaeffer, Philadelphia.—p. 105.
- Hypercholesterinemia and Albuminuric Retinitis. P. Gaudissart, Brussels, Belgium.—p. 118.
- Variolous Inflammation of Cornea. G. H. Burnham, Toronto, Can.—p. 123.
- Symmetric Cystic Enlargement of Lacrimal Glands Due to Syphilis. H. W. Cowper, Buffalo, N. Y.—p. 125.
- Physiologic Hyaloid Artery Remnants. R. Von Der Heydt, Chicago.—p. 125.
- Determining Muscle Power. O. Wipper, Chicago.—p. 127.
- Subjective Ocular Experiences. E. J. Brown, Minneapolis.—p. 128.

#### American Journal of Syphilis, St. Louis

January, 1922, 6, No. 1

- \*Influence on Toxicity and Trypanocidal Activity of Shaking Acid and Alkalized Solutions of Arsphenamin and Solutions of Neo-arsphenamin in Air. J. F. Schamberg, J. A. Kolmer and G. W. Raiziss, Philadelphia.—p. 1.
- Practical Observations on Syphilis. H. H. Hazen, Washington, D. C.—p. 16.
- \*Enlargement of Lower Lip from Syphilis. D. W. Montgomery and G. D. Culver, San Francisco.—p. 55.
- Roentgenology of Syphilis of Bone. E. H. Skinner, Kansas City, Mo.—p. 58.
- Standardization of Wassermann Reaction. XXIII. Methods for Conducting Quantitative Complement Fixation Tests and of Reading Scales for Recording Reactions. J. A. Kolmer, Philadelphia.—p. 64.
- Id. XXV. Superior Antigen and Complement Fixation Tests in Syphilis (Cholesterolized and Lecithinized Alcoholic Extract of Heart Muscle). J. A. Kolmer, Philadelphia.—p. 74.
- Id. XXX. New Complement Fixation Test for Syphilis Based on Results of Studies in Standardization of Technic. J. A. Kolmer, Philadelphia.—p. 82.
- Silver Arsphenamin, Qualitative and Quantitative Studies. C. N. Myers, New York City.—p. 111.
- Syphilitic Generalized Alopecia; Report of Case. U. G. Arnett, Point Pleasant, W. Va.—p. 131.

**Effect of Shaking on Arsphenamin.**—Although the toxicity of alkalized and acid solutions of arsphenamin and neo-arsphenamin is increased by shaking, Schamberg et al. assert that there is no increase in trypanocidal effect.

**Syphilitic Infiltration of Lip.**—Besides the typical syphilitic papule or small or large gumma, Montgomery and Culver state, there occasionally arises, in certain regions, a diffuse syphilitic infiltration. The lower lip is especially subject to this and the deformity produced is so striking as to constitute a valuable diagnostic feature. These perivascular infiltrations are very resistant to treatment.

#### American Journal of Tropical Medicine, Baltimore

January, 1922, 2, No. 1

- Public Health Problems of Southern Countries. N. T. McLean, U. S. Navy.—p. 25.
- Review of Reorganization of Sanitary and Public Health Work in Dominican Republic Under United States Military Government of Santo Domingo. R. Hayden, U. S. Navy.—p. 41.
- \*Medical Department in Virgin Islands. O. J. Mink, U. S. Navy.—p. 59.
- American Journal of Tropical Medicine. H. J. Nichols, U. S. Army.—p. 63.
- Section of Tropical Medicine, Army Medical Museum, Washington, D. C. G. R. Callender, U. S. Army.—p. 67.
- \*Treatment of Trichomonas Intestinalis Infections. M. D. Levy, Galveston, Texas.—p. 71.
- Incidence of a Leptospira in Kidneys and of Parasites in Intestines of One Hundred Wild Rats Examined in England. A. C. Stevenson.—p. 77.

**Health Activities in Virgin Islands.**—Mink states that the medical administration of the Virgin Islands since the change of sovereignty has achieved many important results, among which the most important are: (1) marked reduction of infant and general mortality rate; (2) general administration of typhoid prophylaxis and the disappearance of typhoid as a mortality and morbidity factor; (3) the disappearance of pellagra; (4) improvement in general sanitation, especially



in connection with night soil collection and mosquitoes; (5) preservation of accurate mortality, morbidity and birth statistics; (6) relief of the deformities resulting from filariasis, and (7) improvement of conditions in the production and distribution of food products.

**Treatment of *Trichomonas Intestinalis* Infections.**—Levy outlines a plan of treatment of these infections which it is believed counteracts the hypochlorhydria and the acholic condition of the intestinal contents by producing in the intestine an excessive concentration of bile, a medium which is inimical to the growth and reproduction of *Trichomonas*. The usual preliminary saline purge and liquid diet having been given, calomel, one-tenth grain, is ordered every twenty minutes until ten doses have been taken, this to be repeated daily for four days each week for four weeks. Dried ox gall, from 5 to 25 grains, in capsules, is given three times daily after meals in addition to dilute hydrochloric acid, from 20 to 40 minims. The hydrochloric acid and ox gall are given daily during the entire month. If an examination of the stool following a saline purge at the end of this time shows trichomonads present, the treatment is repeated. It is the practice to repeat the treatment at least once. This treatment is not proposed as being the treatment par excellence; however, of the patients treated, three have remained free of flagellates for four months, a length of time sufficient to justify the conclusion that these patients were cured as a result of the measures employed.

### American Review of Tuberculosis, Baltimore

February, 1922, 5, No. 12

Thomas Willis and His De Phthisi Pulmonari. W. S. Miller, Madison, Wis.—p. 934.

Brehmer and Dettweiler Method of Treatment of Pulmonary Tuberculosis. H. M. Kinghorn, Saranac Lake, N. Y.—p. 950.

\*Terminal or Cachectic Edema in the Course of Pulmonary Tuberculosis. W. S. Duboff and C. Markel, Edgewater, Colo.

Diagnosis of Pulmonary Tuberculosis. D. A. Stewart, Ninette, Manitoba.—p. 981.

\*Prevention of Tuberculosis Based on Relation of Childhood Infection to Tuberculosis in Adult Life. A. K. Krause, Baltimore.—p. 994.

**Terminal Edema in Pulmonary Tuberculosis.**—Duboff and Markel assert that about 10 per cent. of deaths from tuberculosis in their institution have been associated with a terminal edema. In addition, they have studied six cases still in the institution, but which, for prognostic reasons, may be considered as terminal edemas, thus bringing the total of cases to twenty-five. Of the total number, four may be classed as cardiacs and nine as nephritics, while the remaining twelve belong distinctly to the agonal group. The cardiac group is a small group in which the edema may simulate the rapid anasarca of acute nephritis, or appear slowly with an accumulation in the ankles gradually extending up the body. The nephritic group occurs most commonly in chronic fibroid cases of long standing with apparently latent pulmonary lesions. The characteristic renal change is focal sclerosis. The gradual failure of the kidney to eliminate is the probable explanation of an edema simulating the cardiac type. The agonal group of edemas is probably caused by predissolution metabolic changes in the tissues themselves, resulting in the conversion of hydrophobic into hydrophilic colloids. The kidneys show secondary changes in function.

**Prevention of Tuberculosis.**—Krause speaks of children who have minor eye infections usually phlyctenular conjunctivitis. Sometimes they antedate the appearance of tuberculous lymphadenitis or pulmonary disease, while at other times they occur during the course of these; but in many cases may exist alone, and this experience leads him more and more to believe that an underlying tuberculosis is the etiologic factor, an opinion which is gaining wider currency. Such patients should be treated for their tuberculosis and not merely locally for their eyes. Taken in time and put under a modified tuberculosis regimen, they respond well and escape frequently the clinical evidence of more advanced infection. These cases are frequent among children, and their recognition and handling as cases of tuberculosis constitute prophylactic work of the first order. There are, besides, other children who may exhibit their infection, for a time at least, only by skin eruptions. Those who are taken in hand and

treated for tuberculosis, and not allowed to go their way after the application of ointments and powders will in many cases fall out of the ranks of future consumptives.

### Annals of Otolaryngology and Rhinology, St. Louis

December, 1921, 30, No. 4

Neuralgias of Trigeminal Tract and Facial Neuralgias of Other Origin. Impressions Derived from a Survey of 555 Cases. C. H. Frazier, Philadelphia.—p. 855.

Laryngeal Tuberculosis from Point of View of Pulmonary Specialist. C. L. Minor, Asheville, N. C.—p. 870.

Climate in Treatment of Laryngeal Tuberculosis. C. E. Edson, Denver.—p. 888.

Treatment of Tuberculous Laryngitis by Suspension Laryngoscopy. L. W. Dean, Iowa City, Ia.—p. 898.

General Measures in Treatment of Laryngeal Tuberculosis. L. Brown, Saranac Lake, N. Y.—p. 904.

Surgical Treatment of Laryngeal Tuberculosis. R. Levy, Denver.—p. 912.

Case of Intranasal Ethmoid Exenteration Accompanied by Uncontrollable Hemorrhage; Death. D. Roy, Atlanta, Ga.—p. 922.

Radium in Treatment of Carcinoma of Larynx; Review of Literature. F. O. Lewis, New York.—p. 932.

Analysis of Over Five Hundred Cases of Progressive Deafness. H. Hays, New York.—p. 943.

Surgery of Sphenoid Sinus. B. N. Colver, Battle Creek, Mich.—p. 955.

Postoperative Treatment of Brain Abscess. S. M. Smith, Philadelphia.—p. 970.

Monocular Retrobulbar Optic Neuritis Caused by Purulent Maxillary Sinusitis. J. W. Jervy, Greenville, S. C.—p. 976.

Must It Always Be Tonsillectomy? H. L. Swain, New Haven, Conn.—p. 979.

Perception Deafness. F. P. Emerson, Boston.—p. 994.

Prognosis of Tuberculous Laryngitis. J. B. Gregg, Sioux Falls, S. D.—p. 1007.

Nausea as Nasal Reflex. G. Sluder, St. Louis.—p. 1051.

Case of Nodular Headache of Nasal (Sphenopalatine-Meckel's) Ganglionic Origin. G. Sluder, St. Louis.—p. 1053.

Result of Use of Heat Hyperemia in Esophageal Stricture. L. W. Dean, Iowa City, Ia.—p. 1055.

Double Mastoiditis; Perisinus Abscess; Prolonged Postoperative Temperature; Unusual Blood Count; Recovery Without Further Operation. J. L. Maybaum, New York.—p. 1057.

Cavernous Sinus Thrombosis of Otitic Origin. J. L. Maybaum, New York.—p. 1061.

### Boston Medical and Surgical Journal

Feb. 23, 1922, 186, No. 8

\*Typhus Fever at Boston City Hospital. G. C. Shattuck, Boston.—p. 235.

\*Surgical Management of Toxic Goiters. J. de J. Pemberton, Rochester, Minn.—p. 244.

**Typhus at Boston City Hospital.**—Examination of the records of the Boston City Hospital for the past ten years, showed that during that period of time four cases have been diagnosed as typhus fever. In five cases diagnosed otherwise a diagnosis of typhus would probably have been justified. The signs were highly suggestive of typhus. Numerous cases, probably not typhus, had eruptions suggestive of typhus. It seems probable that a few cases of typhus fever escaped detection. The records indicate that the possibility of typhus was not considered in these cases. Shattuck asserts that the diagnosis of typhus is easy in typical cases, but it is important to realize that typhus may simulate a number of other common diseases, and that they in their turn may produce eruptions very suggestive of, or even similar to that of typhus. The diagnosis of typhus in children is more difficult, as a rule, than in adults, because typhus in children generally runs a very mild course. The diagnosis of typhus in atypical cases may be difficult or impossible by the use of known clinical methods, even when supplemented by the ordinary diagnostic procedures of the laboratory. Two of the newer methods of diagnosis are especially valuable. These are: (a) the proteus reaction of Wilson, Weil and Felix, and (b) microscopic examination of bits of skin excised during life.

**Surgical Treatment of Toxic Goiter.**—From July 1, 1920, to July 1, 1921, 1,954 patients with goiter were operated on in the Mayo Clinic. One hundred and one had ligations only. Eighteen hundred and fifty-three patients had partial thyroidectomies, in 465 of whom the thyroidectomy was preceded by one or more ligations. Thirty-five patients died, a mortality of 1.78 per cent. Eight of the 996 patients with simple goiter, unassociated with hyperthyroidism, died, and



mortality of 0.8 per cent. Four of the 281 patients with hyperfunctioning adenomatous goiter died, a mortality of 1.4 per cent. Twenty-three of 677 patients with exophthalmic goiter, on whom 1,224 operations were performed (ligations and thyroidectomies), died, a mortality of 1.87 per cent., by operations, and 3.39 per cent. by patients. Fourteen of the patients (2.39 per cent.) were of the 585 who had a thyroidectomy, and nine (1.4 per cent.) were of the 639 who had ligations. Five (22 per cent.) of the patients who died had recurrent goiter; they represent 8.9 per cent. of the fifty-six patients in whom the disease recurred. The deaths were due to three main causes: (1) accidental causes, three patients; (2) intense hyperthyroidism, seven patients; and (3) moderate hyperthyroidism, plus pulmonary complications due to the patient's lowered resistance incident to the long continued progress of the disease or to some intercurrent cause, such as hemorrhage or infection, twelve patients. In one patient the operation failed to check the progress of the disease. Pemberton asserts that the deaths due to severe hyperthyroidism are preventable to a large extent; either an error is made in selecting the patient for operation or in selecting the operation for the patient. If patients who are recognized as poor surgical risks are accepted for operation, a higher mortality rate must be looked on as unavoidable.

### Canadian Medical Association Journal, Montreal

February, 1922, 12, No. 2

- Outlook in Surgery. G. E. Armstrong.—p. 65.  
Intracranial Diagnosis. A. H. Gordon.—p. 68.  
Financial Considerations of Average Doctor. A. T. Lytle, Buffalo.—p. 75.  
Late Results of Surgical Treatment of Constricting Bands of Large Intestine-Terminal Ileum. W. A. Bigelow, Brandon, Man.—p. 83.  
Lessons Learned from Study of Gallbladder. F. N. G. Starr.—p. 85.  
Operative Treatment of Vesicovaginal Fistula. A. C. Hendrick, Toronto.—p. 88.  
Circumscribed Syphilitic Ulcer of Stomach: Report of Case. G. B. Eusterman, Rochester, Minn.—p. 91.  
Vaginosesical and Uterovesical Fistula: Operative Treatment. D. W. MacKenzie, Montreal.—p. 95.  
Pregnancy and Tuberculosis. D. A. Stewart, Manitoba.—p. 103.  
Arteriosclerosis and Angina Pectoris with Temporary Muscular Paralysis. D. G. Campbell.—p. 107.  
Raynaud's Disease of Four Years' Duration; Acute Fatal Termination with Signs of Involvement of Arteries of Central Nervous System. K. E. Hollis, West Toronto.—p. 108.  
Case of Acute Obstruction Due to Cystic Dilatation of Appendix: Hydrops of Appendix. E. J. Ferg and W. A. Chestnut, Moosomin, Sask.—p. 108.  
Quinidin Treatment of Auricular Fibrillation. C. F. Moffatt, Montreal.—p. 110.

### Georgia Medical Association Journal, Atlanta

February, 1922, 11, No. 2

- Carbon Monoxid Poisoning. L. C. Allen, Hoschton.—p. 43.  
Common Errors Regarding Skin Diseases. M. B. Hutchins, Atlanta.—p. 46.  
Treatment of Epilepsy. L. M. Gaines, Atlanta.—p. 49.  
Segmental Diagnosis of Spinal Cord Lesions. D. B. Hawkins, Atlanta.—p. 54.  
Infection of Maxillary Antrum. G. D. Ayer, Atlanta.—p. 56.  
Importance of Proper Interpretation of Primary Sore. S. J. Sinkoe, Atlanta.—p. 59.  
Local Anesthesia. W. M. Folks, Waycross.—p. 64.  
Regional Anesthesia in Poor Surgical Risks. W. A. Selman, Atlanta.—p. 66.  
\*Case of Asthma Caused by Sensitiveness to Dog Hair. H. M. Davison, Atlanta.—p. 68.

**Asthma Due to Sensitiveness to Dog's Hair.**—Davison cites the case of a man, aged 41, who had had asthma for twenty-two years. For several years attacks occurred in the spring and fall only and lasted from seven to fourteen days. These attacks gradually increased in severity and frequency till wheezing was present practically the entire year and the acute attacks occurred during all seasons. Cutaneous tests were made with protein extracts from all the different foods the patient ate throughout the entire year and all were negative. The extract from dog hair gave a strongly positive reaction. Further questioning of the patient brought out the fact that the attacks of asthma occurring in the spring and fall had usually been after hunting trips and that his dog now slept on the steps of his sleeping porch just by the patient's bed. The dog was sent away and attacks ceased at once. To give this diagnosis a rational test, a lapse of two

weeks was allowed. At the end of two weeks, a neighbor's dog was borrowed and the patient played with it for five minutes. Fifteen minutes later a severe attack of asthma began.

### Journal of Biological Chemistry, Baltimore

February, 1922, 50, No. 2

- Determination of Sodium in Serum Without Use of Platinum Dishes. S. J. Wilson, Baltimore.—p. 301.  
Metabolism of Sulphur. IV. Oxidation of Cystin in Animal Organism. H. B. Lewis and L. E. Root, Urbana, Ill.—p. 303.  
Vitamin Content of Micro-Organisms in Relation to Composition of Culture Medium. C. Eijkman, C. J. C. van Hoogenhuyze and T. J. G. Derks, Utrecht, Holland.—p. 311.  
Effect Produced on Composition of Milk by Administration of Certain Inorganic and Organic Substances. W. Denis, New Orleans; W. R. Sisson and M. Aldrich, Boston.—p. 315.  
Thermostable Active Agent of Pig's Pancreas. W. Jones, Baltimore.—p. 323.  
Rapid Colorimetric Method for Quantitative Determination of Inorganic Phosphorus in Small Amounts of Serum. F. F. Tisdall, Toronto.—p. 329.  
Vitamin Studies. IX. Influence of Diet of Cow on Quantity of Vitamins A and B in Milk. C. Kennedy and R. A. Dutcher, St. Paul.—p. 339.  
Acetonuria Produced by Diets Containing Large Amounts of Fat. R. S. Hubbard and F. R. Wright, Clifton Springs, New York.—p. 361.  
Resolution of Hydroxyaspartic Acids into Optically Active Forms. H. D. Dakin, New York.—p. 403.  
\*Hydrogen Ion Concentration and Bicarbonate Level of Blood in Pneumonia. A. L. Barach, J. H. Means and M. N. Woodwell, Boston.—p. 413.  
Analysis and Composition of Corn Pollen. R. J. Anderson and W. L. Kulp, Geneva, N. Y.—p. 433.  
Rôle of Cephalin in Blood Coagulation. A. Gratia and P. A. Levene, New York.—p. 455.  
Heat of Reaction of Oxygen with Hemoglobin. E. F. Adolph and L. J. Henderson, Cambridge, Mass.—p. 463.  
Physiology of Phenols. 1. Quantitative Method for Determination of Phenols in Blood. K. F. Pelkan, San Francisco.—p. 491.  
Id. II. Absorption, Conjugation and Excretion. K. F. Pelkan and G. H. Whipple, San Francisco.—p. 499.  
Studies of Liver Function. III. Phenol Conjugation as Influenced by Liver Injury and Insufficiency. K. F. Pelkan and G. H. Whipple, San Francisco.—p. 513.  
Effect of Hydrogen Ion Concentration on Determination of Calcium. A. T. Shohl, Baltimore.—p. 527.  
\*Rapid and Accurate Method for Determining Calcium in Urine. A. T. Shohl and F. G. Pedley, Baltimore.—p. 537.

**Bicarbonate Level of Blood in Pneumonia.**—Carbon dioxide diagrams of the blood of ten new cases of pneumonia are presented by Barach, Means and Woodwell. In three cases observations were secured before and after the crisis, in one case before and after oxygen therapy, and in two cases before and after the administration of sodium bicarbonate. The alkali of the blood in pneumonia as shown by the level of the carbon dioxide dissociation curve was found to be sometimes within normal limits, sometimes below normal limits. It is suggested that in pneumonia patients showing acidosis either in the sense of a low level of available blood alkali or of decrease in  $p_{\text{H}}$  or combination of the two, the administration of sodium bicarbonate may be helpful by diminishing the work of the respiratory bellows. By such a procedure a  $p_{\text{H}}$  less alkaline than normal may be brought to normal with no increase in ventilation because of a raising in the level of the dissociation curve. Or, in a case with low curve but normal  $p_{\text{H}}$  to start with, the raising of the curve may diminish the amount of ventilation necessary. The use of sodium bicarbonate should be carefully controlled, however, to avoid the production of alkalosis, and when anoxemia is present it should be combined with oxygen therapy.

**Rapid Determination of Calcium in Urine.**—Shohl and Pedley assert that calcium in the urine can be determined accurately if the urine is oxidized with ammonium persulphate. The calcium is precipitated as the oxalate at  $p_{\text{H}}$  4.8 to 5.2, and titrated with five hundredth normal potassium permanganate. The method requires less than one quarter the time necessary for gravimetric determinations.

### Journal of Urology, Baltimore

February, 1922, 7, No. 2

- Survey of Treatment of Acute Gonorrhea in Male. A. R. Fraser, Cape Town, S. Africa.—p. 87.  
\*Gonococcal Infections of Kidney: Report of Case with Traumatic Rupture. R. R. Simmons, Des Moines, Ia.—p. 113.  
Chronic Infections of Male Urethra and Its Adnexa. H. E. Paul, Toronto, Can.—p. 125.



- Operative Treatment and Pathology of Acute Epididymitis. J. H. Cunningham and W. H. Cook.—p. 139.
- Suction Drainage: Presentation of Apparatus. M. F. Campbell, New York.—p. 153.
- Acknowledgment of Priority for Treatment of Impacted Calculi in Lower End of Ureter Released by Fulguration. H. H. Young, Baltimore.—p. 161.

**Gonococcal Infection of Kidney with Rupture.**—The case reported by Simmons is unique in combining the infrequent condition of kidney fracture with that very rare condition of pure gonococcal kidney infection. The case is further of interest from a standpoint of diagnosis. The man entered the hospital complaining of violent pain in the abdomen, chiefly in the right side. He had had gonorrhea four months previously. The day prior to admission to hospital he was struck in the abdomen with a large lump of coal. He fell down and at once felt a severe pain in the upper right quadrant of the abdomen. This pain moderated after a "few minutes" and the patient continued to work. The pain started again and soon became so severe he was forced to stop work and go to bed. There was nausea but no vomiting. An exploratory laparotomy was done. The omentum and peritoneum in the upper right quadrant were congested. A tumor mass was felt in the region of the right kidney. On stripping away kidney fat a fracture in the markedly thinned kidney parenchyma could readily be palpated through the unbroken capsule. The capsule was opened and about 8 ounces of a thin blood stained, purulent fluid expressed. A portion of this fluid was obtained for laboratory examination. From direct smears without sedimentation, large numbers of intracellular and extracellular gram-negative, biscuit-shaped diplococci were demonstrated. A pure culture of the gonococcus was obtained on 1 per cent. glucose-acetic fluid agar.

### Medical Record, New York

Feb. 18, 1922, 101, No. 7

- Sleep (Normal and Abnormal) and Mechanism of Sleep. J. V. Haberman, New York.—p. 265.
- Actinomycosis: Report of Case. E. A. Vander Veer and A. M. Dickinson, Albany.—p. 273.
- Complications and Sequels of Influenzal Pneumonia. O. S. Wightman, New York.—p. 274.
- Cancer Death Rate in New York City During 1921. L. D. Bulkley, New York.—p. 276.
- Case of Septicopyemia and Recovery. G. W. Stone, New York.—p. 277.
- Exophthalmic Goiter and Digitalis. I. Bram, Philadelphia.—p. 279.
- Moonshine Whiskey Psychosis. B. Lenchen, Dunning, Ill.—p. 280.
- Prenatal in Infancy and Childhood. J. H. Marcus, Atlantic City, N. J.—p. 282.

Feb. 25, 1922, 101, No. 8

- \*Transient Hemiplegia. W. G. Thompson, New York.—p. 311.
- Treatment of Gonococcal Infection in Female. V. C. Pedersen, New York.—p. 314.
- Antiseptics in Treatment of Infected Wounds. R. J. Behan, Pittsburgh.—p. 319.
- What Schools May Accomplish in Social Adaptations. L. P. Clark, New York.—p. 323.
- Indications and Contraindications for Tonsillectomy. S. Cohen, Philadelphia.—p. 325.
- \*Pericarditic Pseudopneumonia in Children. M. S. Lewis, New York.—p. 327.
- Resolution in Pulmonary Tuberculosis. O. Paget, Perth, West Australia.—p. 329.

**Transient Hemiplegia.**—Thompson suggests that these cases may be caused by arteriospasm of the cerebral vessels, causing temporary localized cerebral block, or pressure from a localized cerebral edema of toxic origin which, being capable of more prompt reabsorption than a blood clot, restitution of normal function quickly ensues. It is also conceivable that certain brains, more readily than others, from some minute anatomic difference, develop prompt compensation, so that when particular fibers or cells are put out of commission, either through sudden interruption of the circulation which supplies them or through localized pressure, others soon take over their temporary function for them.

**Pericarditic Pseudopneumonia in Children.**—Attention is directed by Lewis to the fact that associated with pericarditis with effusion there are found definite abnormal physical signs indicating some sort of a pathologic condition at the left scapular angle. The signs of apparent consolidation at the left scapular angle are, in all probability, due to the compression of the pulmonary tissue either by the heart or by the

pericardium, or by both. The frequency of these signs and their location at the left scapular angle indicates that there is some casual relationship to the acute pericarditis, such as (1) a distended pericardial sac presses on the lung producing a mechanical atelectasis; (2) an inflammatory process extends from the pericardium to the pleura or lung causing changes that are responsible for the pulmonary signs; (3) pressure is exerted on the lung by a dilated heart or a pleural effusion. These pulmonary signs seem to have little influence on the course of the disease, as the signs at the left scapular angle disappear with the improvement of the pericarditis.

### Mental Hygiene, Albany, N. Y.

January, 1922, 6, No. 1

- Some Problems of Disabled Ex-Service Men Three Years After Armistice. T. W. Salmon.—p. 1.
- Status of "Clinical" Psychology. F. L. Wells, Boston.—p. 11.
- Care of Neuropsychiatric Disabilities Among Ex-Service Men. D. A. Thom and H. D. Singer.—p. 23.
- Influence of Affecting Disturbances on Responses to Stanford-Binet Test. S. P. Jewett and P. Blanchard, New York.—p. 39.
- State Care, Training and Education of Mental Defectives. P. Bailey.—p. 57.
- Laziness in School Children. I. S. Wilc, New York.—p. 68.
- Crossbreeding of Ideas as Factor in Invention. T. H. Haines.—p. 83.
- Personal Psychiatric History. L. Kline.—p. 93.
- Case Correspondence: Method of Psychiatric Social Work. E. C. Hayes.—p. 125.

### New Orleans Medical and Surgical Journal

February, 1922, 74, No. 8

- Blood Transfusion in Obstetrics. E. L. King, New Orleans.—p. 549.
- \*Case of Raynaud's Disease. R. S. Crichtlow.—p. 556.
- Removal of Foreign Bodies from Eye. H. D. Burns, New Orleans.—p. 559.
- Treatment of Empyema. F. W. Parham, New Orleans.—p. 571.
- How Apothecary Compares with Other Agents Used in Spinal Analgesia, with Special Reference to a Near Accident in Case of Prostatectomy. P. J. Gelpi, New Orleans.—p. 586.

**Case of Raynaud's Disease.**—Crichtlow reports a case in which he noted "attacks of cold, dead, bloodlessness in the fingers or toes as a result of exposure to cold or to emotional excitement (local syncope). In the more advanced cases there are capillary congestion and mottled and livid swelling (local asphyxia). Later, still in more advanced cases, thrombosis and resulting gangrene which is usually symmetrical," as originally described by Raynaud.

### Philippine Journal of Science, Manila

October, 1921, 19, No. 4

- Kao Pan Seedless Siamese Pummelo and Its Culture. O. A. Reinking and G. W. Groff.—p. 389.
- Philippine Tenebrionidae, II. H. Gebien, Hamburg, Germany.—p. 439.
- Philippine Nemestrinid (Diptera). C. S. Banks.—p. 517.

### Porto Rico Medical Association Bulletin, San Juan

Dec. 31, 1921, 15, No. 134

- \*Dietetic Deficiencies Predisposing to Sprue, Pellagra and Beriberi in Porto Rico. Bailey K. Ashford.—p. 249.
- MacDonagh Reaction in Diagnosis of Syphilis. L. Yordán Pasarell.—p. 259.
- \*Pyrexias in Porto Rico. A. Torregrosa.—p. 263. Cont'd.
- Modern Dietetics Applied to Porto Rico. R. del Valle Sárraga.—p. 289.
- Vitamins. A. Marxuach.—p. 303.

**Dietetic Deficiencies Predisposing to Disease.**—Ashford asserts that dietetic deficiencies may predispose to sprue, pellagra and beriberi, but that this is not the causal factor. "The Mount Olympus of medicine is a democracy of gods. The goddess of dietetic deficiencies has to take account of the god of infections, and both are subordinate to the Jupiter of clinical research." In Porto Rico there is no pellagra or sprue notwithstanding the scanty diet, but he has encountered about 100 cases of beriberi, although this is very rare. It occurred only in the troops, and in them only among those who refused the meat and vegetables in the abundant army ration.

**Common Pyrexias of Porto Rico.**—In this long instalment of his important monograph Torregrosa reviews the clinical pictures presented by a combination of malaria and helminthiasis, malaria plus Malta fever, or associated with an eruptive disease. He discusses further the points which differentiate influenza from malaria, and the combination of



influenza with pulmonary tuberculosis. He cites freely from his own extensive experience. The previous instalments have been summarized as they appeared.

### South Carolina Medical Association Journal, Greenville

February, 1922, 18, No. 2

Cases Met in Eye, Ear, Nose and Throat Practice. P. V. Mikell, Columbia.—p. 6.

Vesical Diverticula: Report of Case. W. E. Barron, Columbia.—p. 9.

Medicine Third of Century Ago. R. B. Furman, Sumter.—p. 9.

\*Syphilis of Uterus. J. C. Sosnowski, Charleston.—p. 12.

Pennington Operation for Hemorrhoids. C. J. Lemmon, Sumter.—p. 13.

**Syphilis of Uterus.**—Sosnowski discusses the symptoms and pathology of this condition as he found them in eighty-seven cases. The syphilitic affections of the uterus are, first, the initial sore seen, not rarely, on the cervix; second, the uterine discharge—leukorrhea and metrorrhagia—seen during the eruptive stage of the disease; third, the engorged or wet uterus seen in the early part of the later phases of the disease; fourth, the contracted or dry uterus seen in the later stages, and fifth, the peri-uterine adhesions seen in some cases toward the end of the wet hyperplastic stage.

### • FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Medical Journal, London

Feb. 11, 1922, 1, No. 3189

Choroid Plexus and Psammomas. J. Bland-Sutton.—p. 213.

\*Treatment of Gastric Ulcer. W. H. White.—p. 214.

Gastric Syphilis. D. J. Galloway.—p. 217.

Some Principles of After-Treatment in Acute Abdominal Disease. H. W. L. Molesworth.—p. 218.

\*Case of Primary Carcinoma of Lung. G. S. Haynes and J. F. Gaskell.—p. 222.

Blindness as Immediate Sequel of Influenza: Recovery. S. E. Denyer.—p. 223.

Amebic Liver Abscess. L. Rogers.—p. 224.

\*Diagnosis of Incipient Acute Appendicitis. R. M. Rowe.—p. 226.

Early Syphilis of Prostate. J. E. R. McDonagh.—p. 226.

Influenza (?) Accompanied by Convulsion. J. N. Beadles.—p. 226.

Mallet Finger. W. J. Foster.—p. 226.

**Treatment of Gastric Ulcer.**—Unless it perforates, White says the acute ulcer requires only medical treatment. Perforation requires instant surgery. Ulcers should not be operated on when bleeding. The medical treatment for bleeding from a gastric ulcer of any sort is absolute rest in bed in a quiet room without visitors and enough morphin to keep the sufferer gently under its influence. If the symptoms show the bleeding has been excessive, 2 grains calcium chlorid dissolved in water should be injected intramuscularly night and morning. No food or drink should be given by the mouth or otherwise for twenty-four hours. At the end of this time, dextrose in solution in tap water, 525 grains to the pint, may be given by the rectum, half a pint two or three times a day. In two or three days at the latest some milk in hourly or half-hourly feeds should be given by the mouth, and, as rapidly as possible, the patient should be got on a diet suitable for ulcer of the stomach. White says that very many patients have been lost from too prolonged rectal feeding and consequent starvation. Transfusion may be of great help, but, in the nature of things, it is unfortunately often impossible to carry it out at short notice. Drugs given by the mouth are of very little value in arresting gastric bleeding.

**Primary Carcinoma of Lung.**—The chief points of interest in the case cited by Haynes and Gaskell were the age of the patient, 27 years; the duration of symptoms, five months; the similarity to tuberculosis of the lungs; the temporary improvement under open air treatment, due to the elimination of secondary infection; the total absence of pain; the involvement of one lung only, and, finally, the rapid enlargement of the mediastinal and cervical glands. The right lung was extensively involved while the left lung was unaffected, but yet the left cervical glands were considerably more affected than the right, the path of spread being probably along the course of the thoracic duct.

**Diagnostic Sign of Acute Appendicitis.**—The sign which Rowe believes to be unequivocal is observed only in the earliest stage: the patient complains of abdominal pain, particularly referred to the epigastrium; he looks ill and is generally vomiting; the decubitus is dorsal. Examination of the abdomen reveals in the upper left epigastric region skin hyperesthesia and intense tenderness, with tonicity of the left half of the uppermost segment of the left rectus abdominis muscle. On the contrary, there is no tenderness nor muscle rigidity over the right iliac fossa. Three or four hours later, there is a commencement of slight pain, tenderness and rigidity in the region usually described, if one elects to wait so long. On opening the abdomen one finds a process of great omentum approaching, applied to, or actually wrapped around, an acutely inflamed appendix, according to the time which has elapsed since the appearance of the epigastric distress. On account of this phenomenon Rowe speaks of the epigastric syndrome as the "collision mat" sign—a naval analogy, the omentum being applied to the threatened perforation much as a collision mat is placed over a leak in a warship's hull. Whether or not this sign occurs in every case of acute appendicitis Rowe cannot say, but he is convinced that it does become manifest in every case calling for early operation.

Feb. 18, 1922, 1, No. 3190

\*Obscure Intestinal Colic. H. T. Gray.—p. 253.

\*Three Cases Illustrating Value of Pyelography. C. Morson and H. P. W. White.—p. 257.

\*Bone Clip for Operative Treatment of Fractures. J. E. Adams.—p. 258.

Relation of Curvature of Vessels and of Hollow Viscera to Their Internal Pressure. C. Walker.—p. 260.

Focal Infection in Relation to Etiology of Skin Diseases. H. L. Roberts.—p. 262.

\*Bile Salt as a Vehicle for Pediculicide. B. A. Peters.—p. 264.

Amebic Liver Abscess. L. Rogers.—p. 264.

**Obscure Intestinal Colic.**—For many years Gray has maintained that true visceral pain and discomfort arise from, and are primarily referred to, the mesentery, and that from this source it may or may not also be referred to the associated somatic nerves. In this paper he discusses the mesenteric stimulation initiated by the peristaltic wave, which constitutes intestinal colic. He emphasizes the frequency with which recurrent abdominal pain disappears without laparotomy on the removal of a remote source of infection—that is, teeth, tonsils and adenoids, etc.—such treatment removing the origin of recurrent inert areas. Obscure intestinal colic may arise from temporary causes and be of no real significance; its treatment may be medical, or it may constitute a grave warning of an impending surgical crisis. A full, understanding of its significance depends on an appreciation of the fact that the bowel itself is insensitive; that the colicky pain arises from, and is referred to, the mesentery; and that the mechanism of colic consists in the natural attempt of the bowel to drive onward a diseased or inert area, thereby inducing an abnormal tension on the associated mesentery.

**Value of Pyelography in Hydronephrosis.**—Three cases of hydronephrosis are reported by Morson and White in each of which the diagnosis remained doubtful until the patient had been submitted to pyelography.

**Bone Clip for Fractures.**—These clips and their use were first described by Adams four years ago. He reviews end results which demonstrated the fact that these clips do not interfere with the growth of the bone.

**Sodium Taurocholate as Vehicle for Pediculicide.**—As bile salts are stated to assist the passage of emulsions of fats through the mucous membranes by their property of reducing surface tension, it occurred to Peters they might have the same effect in assisting oily emulsions to penetrate the shell of the louse's egg. Experiments were made with various strengths of sodium taurocholate in watery solution with eucalyptus and sassafras oils. The best compound was found to be: sodium taurocholate, 10 gm., oil of eucalyptus, 50 c.c., and water, 1,000 c.c. A higher concentration of bile salt rendered the hair very sticky, while a lower concentration did not form so good an emulsion. More than 5 per cent. eucalyptus rapidly separated out. Most lice, if immersed in the liquid, cease movements in a few seconds. In no case did any of those tested recover when dried on blotting paper.



and incubated. Larger insects, such as wasps, house-flies, and fleas, when dropped in the emulsion became wetted all over immediately, and died in less than a minute. The emulsion has been tried on more than 500 patients on whose heads living lice were seen. It is well rubbed into the head until all the hair is wetted. The head is then wrapped in a bathing cap or towel and the application left on all night. The head is washed with soap and water next morning, and a fine toothed comb used daily for a fortnight. In 23 per cent. of the cases no lice were found after one application. In the remainder a few recently hatched very small forms were discovered. A second application on this reappearance sterilized 63 per cent., while 14 per cent. required a third application.

### Journal of Pathology and Bacteriology, London

January, 1922, 25, No. 1

- \*B. Welchii Hemotoxin and Its Neutralization with Antitoxin. H. Henry.—p. 1.
- Action of Dilute Acids on Bacterial Growth in Optimum Hydrogen-ion Concentration. I. W. Hall and A. D. Fraser.—p. 19.
- Fatty Changes in Liver, Heart and Kidney. C. G. Imrie.—p. 26.
- Tuberculosis-Like Disease in a Salt Water Fish (Halibut) Associated with Presence of Acid Fast Tubercle-like Bacillus. P. L. Sutherland.—p. 31.
- Wassermann Reaction with Unheated Human Serum. C. H. Browning, E. M. Dunlop and E. L. Kenaway.—p. 36.
- \*Malignant Sacrococcygeal Chordoma. M. J. Stewart.—p. 41.
- Classification of Some Lactose Fermenting Organisms Isolated from Cheeses, Waters and Milk. T. Redman.—p. 63.
- Heterophile Antigen and Antibody. T. Taniguchi.—p. 77.
- \*Blood Platelet Antiserum: Its Specificity and Role in Experimental Production of Purpura. S. P. Bedson.—p. 94.
- \*Cultivation of Gonococcus. C. E. Jenkins.—p. 105.

**Hemolyzing Substance in B. Welchii Toxin.**—Henry's report details with an in vitro investigation of the hemolyzing substance present in *B. welchii* toxin, the method employed being a modification of that originally devised by Madsen for the study of tetanolyisin. Complete neutralization experiments confined within the limits of the observations recorded show that the neutralization of this hemotoxin follows the law of multiple proportions. The results of fractional saturation experiments, when represented graphically, give curves which are not unlike those obtained by Madsen for tetanolyisin.

**Malignant Sacrococcygeal Chordoma.**—Stewart records a case of malignant chordoma (chordocarcinoma) of the sacrococcygeal region and reviews the literature on the subject. The present case is said to be the twenty-sixth chordoma of clinical interest on record, and the ninth example of a sacrococcygeal tumor of this kind. A man, aged 65, had a slowly growing solid tumor over the coccyx, which in eight years had attained the size of an orange. It was excised and histologic examination showed it to be a typical malignant chordoma (chordocarcinoma). After five years a disseminated mass made its appearance in the left buttock, and about three years later a nodule appeared over the right scapula. These masses also grew slowly, but while the latter tumor remained discrete and well encapsulated, the former ultimately caused great destruction of the femur and iliac blade. The patient died eleven years after the excision of the primary growth, and no evidence of general dissemination was found postmortem.

**Blood Platelet Antiserum.**—Bedson states that of various antisera prepared by immunization with blood elements (cellular and otherwise), antiplatelet serum alone produces purpura. This purpura is the result of the action of platelet antibody and takes place independently of any hemagglutination. An extensive, though temporary, reduction in the number of platelets in the circulating blood of the rabbit does not give rise to purpura. Experimental evidence is brought forward to show that the two main factors concerned in the production of the hemorrhages are (a) toxic action on the endothelium of the vessels, and (b) removal of the platelets from the circulation. The serologic specificity of antileukocyte serum, as far as blood cells are concerned, is paralleled by its specificity when tested in vivo.

**Medium for Cultivation of Gonococcus.**—Plasma medium is used by Jenkins for the cultivation of the gonococcus. It

is prepared as follows: Nutrient agar of reaction plus 6 (Eyre) and solidity 4. To the medium 1 per cent. plasma made with powdered sodium citrate is added, then the mixture is poured into tubes or plates and tested for sterility by incubation. The agar should be at a temperature of 55 C. when the plasma is added. The incubator temperature should be 35 or 36 C. A dish of water should be kept alongside the cultures in the incubator. The medium so prepared is used by Jenkins at the rate of nearly 100 tubes a week, and has never failed to fulfil all requirements.

### Lancet, London

Feb. 11, 1922, 1, No. 5137

- \*Some Aspects of Bronchial Asthma. A. Latham.—p. 261.
- Hypnosis and Suggestion. W. Brown.—p. 263.
- Treatment of Gastric Ulcer. B. Moynihan and A. J. Walton.—p. 267.
- \*Case of Complete Heart Block, with Postmortem Examination. H. Waldo and C. E. K. Herapath.—p. 271.
- \*Nomogram As Means of Calculating Surface Area of Living Human Body. W. M. Feldman and A. J. V. Umanski.—p. 273.
- \*Precipitation Test for Syphilis. C. Y. Wang.—p. 274.
- \*Case of Perforated Gastric Ulcer with Unusual Symptoms and Sequels. E. G. D. Milsom and E. C. Norbury.—p. 276.

**Instability of Body Chemistry Cause of Bronchial Asthma.**—Instability of the body chemistry is discussed by Latham in its possible relationship to asthma as an etiologic factor. This instability only becomes evident under a certain set of circumstances. In other words, something has to happen to make the individual sensitive to a particular substance or substances.

**Complete Heart Block.**—Waldo and Herapath cite the case of a man, aged 62, always of temperate habits, who contracted a primary sore thirty years ago. For ten years he took mercury either by the mouth or by inunction, but had never had intravenous or muscular injections of any kind. Seven years ago he developed a gumma on the back of his wrist, which recurred within six months. He had several attacks resembling petit mal, the first two without and later ones with loss of consciousness; he passed urine involuntarily, though he never bit his tongue. He complained of some shortness of breath, especially when ascending stairs, but had no cardiac pain of any kind. There was a well marked systolic murmur all over the front of the chest with increased cardiac dulness and a rather feeble impulse displaced downward and outward; the pulse was 44, regular and not of the Corrigan type. The systolic blood pressure in August, 1918, was 110 mm. Hg. In February, 1920, the diagnosis was made of heart block with destruction, probably complete, of the auriculoventricular bundle. The heart was very large, all chambers being markedly dilated and both ventricles very much hypertrophied. The auriculoventricular rings were wide, and the heart increased in length from base to apex. The muscle was fatty and friable. There was atheroma of the ascending portion of the aorta. The coronary arteries were somewhat occluded and much thickened wherever cut across. The right surface of the auricular septum was hard and glistened as though it were more fibrous than usual. A microscopic study was made of various parts of the heart wall.

**Nomogram for Calculating Surface Area of Body.**—The nomographic method is used extensively by engineers. The characteristic feature of a "nomogram," or alinement chart, is that three lines are graduated with scales representing three different variables, so that any straight line cutting these three scales will intersect them at three points in such a way that the graduations read off at these points will satisfy a given relationship between the three variables. The use of this method in calculating human body surface area is described in detail by Feldman and Umanski.

**Precipitation Test for Syphilis.**—Wang uses an antigen which is an alcoholic extract of the human heart. The serum to be tested is inactivated for from ten to fifteen minutes at 55 C.; 10 drops of saline are added and then the antigen in the manner described. A positive serum is signified by a distinct precipitation.

**Perforated Gastric Ulcer with Postoperative Sequels.**—In this case Milsom and Norbury invaginated the ulcer by a row of Lembert's sutures reinforced by an omental graft



and the abdominal wall was closed. Five days later the patient manifested symptoms indicative of either pyloric obstruction, the result of invagination; or acute atonic dilatation of the stomach. The unusual feature of this case were: (1) gradual onset of acute symptoms due apparently to a minute leak from the stomach; (2) severe attacks of pain, apparently of sympathetic origin, referred to the penis, with inability to pass water, and accompanied by opisthotonos; (3) marked postoperative acute dilatation of the stomach, with persistent vomiting, which was instantly relieved by gastric lavage; (4) occasional attacks of cardiospasm.

### Bulletin de l'Académie de Médecine, Paris

Jan. 3, 1922, 87, No. 1

\*Histology of Tuberculous Enteritis. E. Lenoble.—p. 18.

\*Traumatic Tachycardia or Bradycardia. G. Ferry.—p. 20.

Aqueous Extract of Tubercle Bacilli. F. Berlioz.—p. 23.

Jan. 10, 1922, 87, No. 2

Biologic Reactions of Tissue Extracts. Fenton B. Turck (New York) and H. Hartmann.—p. 31.

Modification in Respiration After Walking. C. Achard et al.—p. 42.

Case of Exocardia. V. Torkomian (Constantinople).—p. 48.

**Development of Tuberculous Enteritis.**—Lenoble describes the three phases: first a phase of diapedesis for the bacilli, and embolism, through an endarteritis. Then comes the phase of invasion of the follicles, and finally the invasion of the mesenteric glands. From these the bacilli pass to the liver. The ulceration may be due to massive elimination of the tubercle bacilli and their products, or it may be due to secondary bacilli, or to both these factors. Direct infection of the intestinal wall does not occur unless the mucosa is damaged or diseased from other cause. The stomach mucosa is practically always intact in this respect, although its mucosa is no more resistant than the bowel mucosa.

**Bradycardia and Tachycardia from Emotional Stress.**—Ferry recalls Laubry's report of a case of permanent bradycardia developing after contusion of the chest over the heart. He compares with this the cases of two aviators, one of whom after some parachute jumps developed paroxysmal tachycardia when going up in the airplane, or at the mere memory of the parachute experiences. The heart beat dropped to 40 in the other aviator after a very high flight, without oxygen, after a period of overexertion and autointoxication. The emotional strain superposed on a physical trauma thus may upset the nervous balance and entail tachycardia or bradycardia according to whether the system was in good condition or not beforehand.

### Bulletin Médical, Paris

Feb. 11, 1922, 36, No. 7

\*Otitis in Young Infants. D. Denéchau and R. Amsler.—p. 111.

\*Obesity with Atypical Distribution of Fat. F. Heckel.—p. 113.

Recent Literature on Therapeutics. G. Lyon.—p. 117.

**Otitis in Young Infants.**—Denéchau and Amsler do not join either side in the debates on the extreme prevalence of otitis in very young infants, but they state that in their own service, last summer, 12 of the 45 infants with diarrhea had also a discharge from one or both ears. The otitis persisted when the few infants that recovered were taken home; necropsy in 7 confirmed the purulent otitis. In addition to operative measures they advocate an autogenous vaccine, calling attention to one of their cases in which marked benefit followed the autogenous vaccine in one of the older infants with chronic otitis.

**Inferior Obesity.**—Heckel refers to women with a normal figure above the waist while the hips, thighs and legs show extreme obesity. This inferior obesity generally begins at puberty and is a special type that requires special treatment. Usually, the hair on the body is scanty, the expression gentle and timid, the mouth small. Puberty is late and menstruation irregular, but if these women marry they are fertile. Treatment has to be more active than for general obesity. Heckel enforces complete repose at first, no massage, no walking. Starches, fat and sugar must be restricted in the diet; rare meat, salads and fruits are the main reliance, and thyroid, ovarian, suprarenal and pituitary treatment is pushed. These patients bear ovarian treatment in large doses excep-

tionally well. The benefit is pronounced almost from the first. The doses that have given the best results were 0.2 gm. of thyroid extract and the same or a little more of ovarian and pituitary extract. If the pulse is still below 100 after a week of this treatment, and if there are no signs of toxic action (insomnia, headache, pains in limbs, diarrhea, restlessness) he continues the treatment. With signs of toxic action he suspends it every third week. The epinephrin is given as a stimulant for the depressed sympathetic nervous system, injecting subcutaneously 0.5 mg. of nonsynthetic epinephrin in 5 c.c. of physiologic saline. The circumference of the hips, calves, etc., is recorded systematically to show the progress realized. When the weight has materially declined, then he orders vigorous exercises, especially bicycle riding, the legs in heavy woolen underwear. The exercise and sweating thus induced usually aids in throwing off the last of the obesity. In all treatment of obesity in women, the diet and organotherapy stage must be kept separate from the exercise stage which crowns the work. He theorizes that thyroid treatment is the least specific; it acts on all the glands. Epinephrin, on the other hand, seems to have a remarkable regulating action on the sympathetic system in general.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Dec. 30, 1921, 45, No. 39

\*Fever in Late Stages of Syphilis. F. Bialocour.—p. 1721.

Tartrobismuthate of Potassium and Sodium in Treatment of Inherited Syphilis. L. Tixier.—p. 1724.

Neurofibromatosis Girdling Chest. Souques et al.—p. 1729.

Pernicious Anemia After Hemolytic Jaundice. E. Duhot.—p. 1733.

**Febrile Tertiary Syphilis.**—This is Bialocour's third publication since 1900 on the syphilitic septicemia which is revealed by a remittent or continuous fever, without sweats, but with nocturnal headache as a rule. The general health keeps good although the liver and spleen are usually enlarged. The fever may keep up for years, but the clinical picture generally subsides promptly to normal under specific treatment.

Jan. 13, 1922, 46, No. 1

\*Neurofibromatosis of the Trunk. A. Léri.—p. 6.

Thorium in Treatment of Chronic Dermatoses. Id. and Thomas.—p. 10.

\*Compression of Superior Vena Cava. M. Chiray and Semelaigne.—p. 13.

\*Quinidin in Treatment of Arrhythmia. C. Lian, V. Robin et al.—p. 23.

Dilation of Pulmonary Artery. Crouzon and Grenaudier.—p. 34.

\*Spondylitis in Lumbar Region. Robineau and R. A. Gutmann.—p. 38.

Organic Disease Suggesting Hysteria. Bruhl et al.—p. 44.

\*Gas Gangrene in Gallbladder. Hallé and Marquézy.—p. 49.

\*Occupational Purpura. C. Flandin and J. Roberti.—p. 58.

Contraindications to Vaccination. Ramond et al.—p. 65.

**Neurofibromatosis.**—In the young man the skin is normal, but there are numerous subcutaneous nodules along the course of the superficial nerves. There are also a number of nevi.

**Aneurysm Compressing Superior Vena Cava.**—The compression from the aneurysm in the aorta caused various disturbances and compensating processes. Great transient relief was experienced by drawing 50 or 100 c.c. of blood from the jugular vein. It relieved the headache and warded off the jacksonian epilepsy seizure. The benefit from it lasted for twenty-four or thirty-six hours.

**Quinidin in Treatment of Arrhythmia.**—A number of the members of the society here describe their experiences in this line. Several warn of the necessity for prudence and reserve in estimating the action of quinidin, and the indications for it.

**Spondylitis of Lumbarthria Type.**—This type of chronic deforming rheumatism is characterized by pain in the lumbar region and osteophytes, beaklike protuberances sometimes bridging two vertebrae. In a case described, the spondylitis began two weeks after an attack of anthrax, and then for four years there had been severe pains of the type associated with disease in the funiculi, rather than in the nerve roots. Another case is described in which anthrax was responsible for osteitis in the spine. In these cases and in others like them, after exclusion of syphilis, Pott's disease, compression from a neoplasm, and involvement in the disease of some adjoining viscus, and when the chronic nature of the disturbances, rebellious to ordinary measures, is beyond question,



then laminectomy should be considered, regardless of whether roentgenoscopy is negative or not. Laminectomy in the lumbar region in the case reported here put an end at once to all the pains in the lumbar region, and they have never returned. This was also the outcome in Sicard's five cases of old incapacitating, chronic lumbago of the pure lumbalgia type. The arthritis of the openings in the vertebrae is responsible for the symptoms, and laminectomy seems to cure it.

**Gas Gangrene of the Gallbladder.**—The necropsy of the woman of 60 revealed that *Bacillus perfringens* was solely responsible for the clinical picture beginning with what seemed to be gallstone colic, then cholecystitis, and right pneumonia. The gallbladder was found gangrenous but there was no jaundice at any time, and no gallstones were discovered. The whole course was less than two weeks.

**Fatal Purpura from Occupational Poisoning with Benzol.**—The young woman had been employed for nearly two months in an automobile factory, working with rubber dissolved in benzol, in what was called the "heating room." Three or four men and two women were employed in this unventilated room; they were entitled to leave it frequently to breathe purer air. Headache, dizziness and pallor had been followed by hemorrhagic purpura, with fever, acute anemia, and death within three weeks. There had been three previous cases of purpura within six months in the persons employed in this room, but only one was fatal. Some recent research indicates that commercial benzene (benzol) is more toxic than crystallizable benzene, and that this is more toxic than benzene obtained from calcium benzoate. Persons using benzol should have their blood examined frequently.

### Journal de Chirurgie, Paris

January, 1922, 19, No. 1

- \*Fate of Nerve Grafts. A. Gosset and J. Charrier.—p. 1.  
\*Preperitoneal Hydatid Cysts. A. Lamas and D. Prat.—p. 15.

**Fate of Nerve Grafts.**—From their analysis of 216 cases in which various surgeons grafted nerves from the patients or from other patients or from animals, Gosset and Charrier conclude that the final outcome is far from encouraging. The results can be called good only in 5 of the autograft cases; 2 of the homografts and in 5 of the heterografts among the 99 cases under observation for a long time, that is, in only 17 per cent. In 57 other cases in which nerves were sutured, good results were obtained in 40 per cent. and 40 per cent. of the others were improved.

### Journal d'Urologie, Paris

November, 1921, 12, No. 5

- \*Spasm of Kidney Calices. R. H. Kummer.—p. 313.  
\*Cystoscopy in Bilharziasis of the Bladder. V. Cristol.—p. 319.  
\*Calculus in Ureter. V. Aloï.—p. 321.  
\*Syphilitic Disease of Bladder. A. Cosacesco.—p. 345. Idem. E. F. Chocholka.—p. 353.

**Spasm of Calices Revealed by Pyelography.**—Kummer injected 25 c.c. of the contrast suspension into the right kidney, but later found that no more than 6 c.c. could be tolerated. The radiographic findings and other data apparently establish that the musculature of the calices had contracted, this muscular spasm having shut off the pelvis.

**Calculi in the Ureters.**—The combination of catheterization and radiography not only throws light on the case, but it usually demonstrates that operative measures are indispensable, and that the danger for the kidney is greater with a calculus in the ureter than with one in the kidney itself. Aloï explains the advantages of access by the extraperitoneal and parainguinal iliac route.

**Syphilitic Disease of the Bladder.**—Cosacesco warns that this is probably more frequent than generally recognized. In a case reported it presented the cystitis form, and the prompt benefit from general treatment for syphilis, without any local measures, confirmed the diagnosis. Not a trace was left in three weeks, and there has been no recurrence during the seven months to date. Syphilitic disease of the bladder may develop without cystitis, with hematuria as the only or the main symptom. Chocholka reports what he says is the

twenty-first case on record in which syphilis of the bladder was diagnosed solely by the cystoscopic findings. His patient was a woman of 36 with three healthy children. She had complained for a week of pain at micturition, and the bladder region was tender. Cystoscopy disclosed that the mucosa was studded with papules, and the Wassermann test was positive. Under treatment for recurring syphilis the symptoms and all signs of papules disappeared.

### Médecine, Paris

January, 1922, 3, No. 4

- French Ophthalmology in 1921. A. Cantonnet.—p. 245.  
\*Subconjunctival Injections. F. Terrien.—p. 251.  
\*Total Extraction of Cataract. De Saint-Martin.—p. 253.  
\*Origin and Treatment of Lacrimal Derangement. E. Aubaret.—p. 259.  
\*Medical Treatment of Cataract. L. Genet.—p. 263.  
\*Ocular Sequelae to Epidemic Encephalitis. L. Cerise.—p. 265.  
\*Protein Therapy in Ophthalmology. L. Chenet.—p. 269.  
\*Thermal Mineral Waters in Ophthalmology. A. Monthus.—p. 270.  
\*Galvanocautery in Ophthalmology. L. Vacher and M. Denis.—p. 272.  
\*Salves in Ophthalmology. Toulant.—p. 278.  
\*Otorhinolaryngology in 1921. L. Baldenweck.—p. 282.  
\*Diffuse Papilloma of the Larynx. G. Laurens.—p. 289.  
\*Chronic Frontal Sinusitis and Its Endonasal Treatment. L. Vacher and M. Denis.—p. 292.  
\*Sudden Deafness with Mumps. A. Moulounguet.—p. 296.  
\*Chronic Catarrhal Pharyngitis. E. Chavanne.—p. 298.  
\*Treatment of Otogenous Vertigo. M. Vernet.—p. 303.  
\*Blocking Nerve in Treatment of Spasmodic Cough. E. Halphen.—p. 307.  
\*Foreign Bodies in the Larynx. L. Levesque.—p. 308.  
\*Indications for Ossiculectomy. G. Portmann.—p. 310.  
\*Mediterranean Climate and Otorhinolaryngology. S. Lautman.—p. 314.  
\*Treatment of Recurring Tonsillitis. R. Miégevill.—p. 316.

**Subconjunctival Injections.**—Terrien lists detachment of the retina, iridochoroiditis and infected wounds of the cornea as the indications for subconjunctival injection of a few drops up to 0.5 or 1 or 2 c.c. of a 3 or 4 per cent. sodium chlorid solution. Detachment of the retina is now regarded as practically incurable, but unless an operation is planned, 1 or 2 c.c. of the saline should be injected every fourth or sixth day, for a trial at least. These injections may give surprising results in subacute and torpid forms of iridochoroiditis, not the acute forms. In one case of bilateral subacute iridocyclitis and slight hypopyon, with vision reduced to perception of light, injection of mercuric cyanid was followed by a complete cure in a few days. Addition of a little procain renders the injection painless.

**Extraction of Cataract in the Capsule.**—The advantages of Barraquer's method of vacuum extraction of cataract in the capsule are extolled and the technic illustrated. There is not the slightest pressure on the eye with it, but the eye has to be profoundly anesthetized and the pupil extremely dilated. Barraquer's thousands of cases, it is stated, show restoration of visual acuity up to 8:10 to 10:10 in 70 per cent. of the cases, and he claims that it does away with all risk of secondary cataract.

**Medical Treatment of Cataract.**—Genet queries whether any medical treatment is of any use in arresting the tendency to cataract. To date, no local measures have proved certainly effectual, but they deserve more thorough trials, especially serotherapy with a phacolytic serum obtained by repeated injection of animals with an extract of fresh crystalline lenses. No one has ever seen a ripe cataract retrogress under potassium iodid, but certain writers have reported an arrest in the progress of the cataract, and some even a clearing up of the lens under it. Genet himself has never observed this, but he has been impressed with the difference in the time required for ripening of the cataract in certain cases, regardless of whether medicine is taken or not. He warns that quacks pretend to cure cataract by using atropin which materially increases the visual acuity while its effect lasts.

**The Ocular Sequelae of Epidemic Encephalitis.**—As a rule, the optic nerve is not affected by epidemic encephalitis, but a few instances are known of scotoma and blanching of the papillae. Cerise cites three clinicians who have reported a few cases of bilateral complete atrophy of the optic nerve. The motor disturbances may range from mere insufficiency of convergence to intense parkinsonian symptoms, and they seem to be permanent if they have survived the first acute stage. These durable disturbances from defective conver-



gence are extremely annoying, and breed nervous and mental disorders. It is important to be on the lookout for these sequelae of epidemic encephalitis. The patients apply for relief because near vision is becoming defective, and they need glasses. The condition is easily mistaken for defective accommodation. This may be present also, but the disturbance in vision may be cured by glasses to correct convergence, although the diplopia may still persist in lateral vision.

**Parenteral Injections of Milk in Eye Disease.**—Chenet declares that the results have been satisfactory in some cases and poor in others. He has never witnessed any "marvellous" results such as others have reported from intramuscular injections of 5 to 10 c.c. of cow's milk.

**Salves in Treatment of the Eyes.**—Toulant urges the advantages of animal or vegetable fats for the vehicle, rather than the irritating and nonabsorbable petrolatum, to use in and about the eyes. Salves may be preferred to a collyrium for corneal ulcer, for disease of the lids and chronic conjunctivitis, and for revulsion. As a vehicle for an alkaloid, the finer the trituration the less active the effect.

**Otorhinolaryngology in 1921.**—Baldenweck remarks that the two French ear and throat journals that suspended during the war are soon to resume publication. He cites some specialists who have reported favorable results from vaccine therapy in otogenous septicemia and meningitis, in ozena and hay-fever, and states that it is now systematically used by five otologists, including himself, in furunculosis of the meatus. He mentions also the success of Lermoyez and Vallery-Radot in treatment of recurring nasal hydrorrhea by antianaphylaxis. (Summarized in *THE JOURNAL*, Oct. 29, 1921, p. 1451). This opens a prospect for similar treatment of spasmodic coryza, etc. The frequency of latent otitis and mastoiditis in infants has been one of the topics of the year. (Discussed in these columns, Dec. 3, 1921, p. 1847.) Laval has called attention to the slowing of the pulse with suppuration in the ear and mastoid. Lermoyez and Eeman have reported research on tuberculous otitis media, and Féré on complicating otitis in typhoid. Ardenne warns to seek for syphilis in deafmutes, and Roger has reported a case of tumor in the cerebellopontine angle in which normal equilibration seemed to be restored by radiotherapy. An important work by Jacques on fracture of the nose (summarized here, Oct. 15, 1921, p. 1289); another by Sebileau on injury of the internal carotid in operating on the tonsil, and several on dilatation of the esophagus conclude his review of recent progress.

**Action of Mumps on the Ear.**—Moulounguet deplores the futility of all treatment to date in the cases of sudden absolute deafness which is a rare but not an exceptional complication of mumps. It appears suddenly at the onset or during the course or decline of the mumps, at any age, from infancy to middle age. The disturbance is possibly in the auditory nerve trunk at the base of the brain or in the internal meatus; systematic lumbar puncture shows the mumps meningitis reactions.

**Chronic Pharyngitis.**—In discussing the local and general treatment of chronic pharyngitis, Chavanne emphasizes the importance of the neuro-arthritic diathesis and of a sedentary life in predisposing to recurrence of pharyngitis, saying that the throat often spontaneously returns to clinically normal after a good gallop or mountain climbing. He adds that the men in the trenches found that their chronic pharyngitis was temporarily cured, notwithstanding the cold and the wet.

**Treatment of Vertigo.**—Vernet remarks that when there is some local cause for irritation in the labyrinth, which it is impossible to remove, and also after exclusion of impacted cerumen, cholesteatoma, obstruction of the tube or other manifestation of otitis media, palliative treatment is the only recourse. From simple fleeting vasomotor disturbances up to the full Menière syndrome there are all kinds and degrees of sympathetic vasomotor capillary derangement. This has an endocrine basis, and epinephrin has an unmistakable beneficial action in these conditions. It stimulates electively the terminals of the sympathetic nervous system, while regulating the blood pressure and exerting an antitoxic action. He gives 10 drops half an hour before meals twice a day of the 1:1,000 solution, on alternate weeks. No other drug should

be given with it, but in some cases the vertigo yields better to pilocarpin than to epinephrin.

**Blocking the Laryngeal Nerve to Arrest Spasmodic Cough.**—Halphen gives no figures, but states that injection of alcohol to block the superior laryngeal nerve has improved conditions materially in the majority of the cases of whooping cough treated, and in several cases of laryngitis and tracheitis. He injects 2 or 3 c.c. of alcohol, (90 degrees) not heated, the needle half way between the cornu of the hyoid bone and the cornu of the thyroid. The first injection may bring on a severe coughing spasm, but the injection on the other side does not induce any appreciable reaction. In the few refractory cases, the failure was probably due to imperfect technic. The method is absolutely harmless, he adds, and should be given a trial in all severe and persisting spasmodic coughs.

**Foreign Bodies in the Larynx.**—Levesque is convinced that extraction under laryngoscopy induces a reaction in the larynx which compels secondary tracheotomy more often than is published. Preliminary tracheotomy is frequently advisable for children. The symptoms from a foreign body in the esophagus often cannot be distinguished from those with a foreign body in the larynx.

### Paris Médical, Paris

Jan. 21, 1922, 12, No. 3

\*Diseases of Respiratory Tract in 1921. P. Lereboullet and L. Petit.—p. 49.

\*Spasmodic Tracheobronchitis. F. Bezançon and S. I. de Jong.—p. 56.

\*Acute Purulent Pleurisy. A. Schwartz.—p. 58.

\*Syphilitic Disease of Bronchi and Lungs. F. Balzer.—p. 62.

**Diseases of the Respiratory Organs in 1921.**—This annual review mentions in particular recent works on asthma, on syphilitic disease of the bronchi, and on surgical treatment of purulent pleurisy.

**Spasmodic Tracheobronchitis.**—Bezançon and de Jong call attention to the spasmodic coughing at certain regular hours, usually with mucous sputum containing eosinophils, but there is no dyspnea. The spasms of coughing may recur during a period of several weeks, interfering with sleep, but auscultation is negative. The treatment is that of asthma in general. Nose sprays containing atropin may be useful, while powders and medicated cigarettes may aggravate the cough. Any lesion in the nose must be corrected, and general hygiene be enforced. Sometimes nothing but a sudden change of air will conquer this tendency to spasmodic coughing.

**Surgical Treatment of Acute Purulent Pleurisy.**—Schwartz declares that the aim of treatment should be the obliteration of the suppurating cavity, and nothing accomplishes this so completely and so harmlessly as means to restore elastic expansion to the lung. An incision in the ninth or tenth interspace, on the posterior axillary line, provides for drainage, and systematic, continuous respiratory exercises and spirometer exercises maintain the elasticity of the lung. These respiratory gymnastics should be begun early, and be supplemented by twenty or thirty minutes of general gymnastics twice a day. As soon as the fever has subsided, the patient should get up and walk. One patient by the twentieth day was taking a long walk every day. By these means the formation of a hard shell over the lung is prevented, so that decortication will not become necessary. He reports four recent cases cured in this way, without any fistula, or with the rapid cure of an old fistula, in one case consecutive to a focus of gangrene in the lung that had opened into a bronchus. A concomitant focus of osteitis in a rib healed at the same time, after the casting off of the necrotic tissue, and without any deformity of the chest. In short, he reiterates in conclusion, the lung can be depended on to obliterate the suppurating cavity if whipped up and encouraged to do this.

**Syphilitic Disease of Bronchi and Lungs.**—Balzer describes some typical cases of a very fatiguing cough that had been recurring every night for several months but finally subsided under arsenical treatment. It returned a few months later and again subsided under the arsenical treatment, and this time permanently. Inherited syphilitic disease of the lung may develop early or not until maturity; cases have been published at the ages of 21, 28, 34 and even 41. The



cough and dyspnea are usually nocturnal, and there may be hemoptysis, with night sweats, and bronchiectasia develops in time. Syphilis should be suspected in all cases of bronchopneumonia tending to chronicity and sclerosis after measles, influenza and whooping cough. The lesions predominate in the central or lower portions of the lung, and are usually unilateral, while the general health keeps fairly good. In adults, the lungs are a comparatively rare location for syphilitic lesions, although the spirochetes may settle in a tuberculous lesion. The syphilis in this case tends to organization and sclerosis of the focus, while the tuberculosis aggravates the spirochetal lesions by the tendency to destruction of tissue. The patient's fate may depend on the insight of his physician, detecting the syphilis masked by other infection. Specific treatment may then save him, even when cachexia is installed. Mauriac says that treatment of pulmonary syphilitic lesions is liable to be more successful than with visceral lesions. The arsenicals are particularly effective in syphilitic bronchitis simulating pulmonary tuberculosis.

### Presse Médicale, Paris

Jan. 21, 1922, 30, No. 6

\*After Injury of Spinal Cord. J. Lhermitte and P. Pagniez.—p. 57.

\*Removal of Cancer of Prostate and Rectum. L. Imbert.—p. 60.

\*Antishock Treatment. Duhot (Brussels).—p. 61.

Serotherapy in Pneumonia. L. Cheinisse.—p. 62.

**Case of Section of Spinal Cord.**—The accident to the cord in the lumbar region at the age of 3 left complete paralysis of the legs, but they grew proportionately in length, although atrophied, with equinus deformity of both feet, but the bladder and rectum automatic functioning is fairly satisfactory. The comparatively normal development of the bones and muscle tissue in this case, although the lumbar and sacral portions of the spinal cord had been destroyed, testify that the normal play of the cerebrospinal centers is not such an indispensable influence as generally assumed. \*The boy is now 13.

**Resection of Cancer Involving Both Prostate and Rectum.**—Imbert separated the rectum down to the anus through a median abdominal incision, but did not detach the adherent prostate. The proximal stump of the colon was sutured in the wall for an artificial anus, and then the whole adherent mass was removed in one piece, including the prostate and lower portion of the bladder, through a perineal incision. The patient thus treated was extremely weak from repeated hemorrhages, and he died the fourth day. Perhaps it would have been better, Imbert suggests, if he had left an interval of a few days, at least, between the abdominal and the peritoneal operations. The technic is shown in seven illustrations; it seemed to answer its purpose perfectly.

**Antishock Measures.**—Duhot relates that he has been able to ward off all angiotoxic phenomena from injection of the arsenicals, even in the most intolerant, by adding a 50 per cent. solution of glucose to the drug dissolved in 2 c.c. of water.

Jan. 28, 1922, 30, No. 8

\*Angina Pectoris with Heart Disease. L. Gallavardin.—p. 77.

\*Asthenia of Endocrine Origin. A. Sézary.—p. 79.

Rarity of Secondary Bacteremia in Typhoid. Bloch and Hébert.—p. 81.

\*Calcium Chlorid as Tonic for the Heart. L. Cheinisse.—p. 81.

**Angina Pectoris from Valvular Disease.**—Gallavardin describes ten cases of what seemed to be typical angina pectoris, but some valvular or endocardiac defect was probably responsible for the clinical picture. An aortic defect is generally traceable to syphilis, and hence specific treatment might be considered in such cases. In a previous series of 100 cases of true angina pectoris, in fifteen there was a concomitant aortic defect and syphilis was responsible for the latter in all but one case.

**Asthenia of Endocrine Origin.**—Sézary's research indicates that the suprarenals cannot be incriminated for asthenia which is not accompanied with an abnormally rapid exhaustion of the muscles, but the suprarenals are not responsible even in all the cases in which this occurs. In a case of adiposis dolorosa, the asthenia had been so pronounced for ten years that the woman was unable to be up and about for longer than fifteen minutes at a time. Epinephrin treatment

gave only transient benefit, but systematic thyroid treatment, kept up with only brief suspensions, cured this chronic asthenia. In a tuberculous woman, with asthenia and bronzing, the dynamometer failed to indicate rapid exhaustion, and he insisted that it was not a case of Addison's disease. Necropsy showed sound suprarenals and degeneration of the liver.

**Calcium Chlorid in Heart Disease.**—Cheinisse reviews some recent articles on the calcium salts as heart tonics. Given by the vein, with digitalis by the mouth, they seem to speed up the action of the digitalis while checking its secondary effects, the irritation of the vagus and the dyspeptic disturbances. Singer gives by the vein 1 c.c. of a 10 per cent. solution of calcium chlorid. It acts immediately and the action is transient, in comparison to that of the digitalis given by the mouth at the same time.

### Schweizerische medizinische Wochenschrift, Basel

Jan. 26, 1922, 52, No. 4

\*Hereditary Eye Abnormalities. A. Vogt.—p. 77.

Leukemic Tumor in Kidney. P. Steiner.—p. 89.

Treatment of Sterility. F. Ludwig.—p. 92.

**Sex-Linked Inheritance of Ocular Defects.**—Vogt declares that the exclusive appearance in males of hemophilia, dichromasia and other sex-linked hereditary defects and anomalies which are transmitted by the women alone, while the women never present them, testifies that the physiologic reason for this must be some change in the factors determining the sex. The theory of the unpaired chromosome is sustained by the nine new cases of transmitted red-green blindness he has been studying in five different matings. He thus offers data, he says, which have been lacking hitherto in human pathology. He gives the family trees of two new cases of red-green blindness found among 730 schoolgirls tested for color blindness at Basel, and compares them with the previously published tree of a family showing eleven cases of hereditary degeneration of the optic nerve. He was impressed by the relatively large proportion of women transmitters, and the transmission, latent, through generation after generation before the daltonism reappeared again.

Feb. 2, 1922, 52, No. 5

\*Heliotherapy in Nontuberculous Diseases. E. Amstad.—p. 105.

\*Importance of Bile Salts in Urine. H. Müller, Jun.—p. 110.

\*The Sachs-Georgi Test for Syphilis. J. Wolf.—p. 118.

Treatment of Diphtheria Bacilli Carriers. R. Ammann.—p. 121.

**Heliotherapy for Nontuberculous Disease.**—Amstad writes from Leysin to emphasize the beneficial effect of heliotherapy on the entire system, as is evident from the improvement in the blood picture. But, to realize this, the portion of the skin on which the heliotherapy is applied must be sound and physiologically efficient. In seventeen cases of lymphogranuloma, systematic heliotherapy arrested the disease for a year or two and the general condition was immeasurably improved. These patients had all been sent to Leysin as cases of advanced glandular tuberculosis. In an earlier stage, heliotherapy offers prospects of a complete cure. Rachitis also responds gratefully to heliotherapy, but the sun should be given a chance to prevent rachitis. Even the infant should get cautious sunbaths. Sun treatment of wounds is another important field. He begins after three days to expose the wounds to the sun, holding them open with retractors. Even large defects heal over in ten or twelve weeks. He remarks that heliotherapy in nontuberculous affections is still viewed askance by the general practitioner; rarely does he think of exposing a wound to the sun, and still more rarely of giving sunbaths to children with rickets. Internal medicine, Amstad adds, still gets its weapons only from the manufacturing chemists. The public is trained to depend on drugs. The idea of the supreme importance of general treatment, of the healing powers of Nature, has scarcely sprouted as yet.

**Bile Acids in Urine.**—Müller expatiates on the reliability of the fact that powdered sulphur will not float on urine containing bile acids. This Hay test differentiates hemolytic jaundice, by showing that there are no bile acids in the urine, while catarrhal jaundice, gallstones, etc., always are accompanied with bile salts in the urine whether there is jaundice



or not. With heart and kidney disease, a positive Hay reaction points to congestion in the liver. The Hay test is for the liver what the albumin tests are for the kidneys. Fever, disturbances in circulation, the action of poisons (alcohol, atropin, gasoline, etc.) and other generally injurious factors entail elimination of bile acids by the urine more regularly than they entail albuminuria.

**Serologic Test for Syphilis.**—Wolf found that the Wassermann and the Sachs-Georgi tests gave concordant findings in 4,300 specimens of serum. The latter is the more sensitive but it is not specific for syphilis and is useful only to control and supplement the Wassermann. He found it positive in 100 per cent. of twenty-eight cases of acute articular rheumatism.

### Pediatrics, Naples

Jan. 15, 1922, 30, No. 2

- Moro Tuberculin in Diagnosis. O. Cozzolino.—p. 49.  
\*The Thymus in Young Children. III. A. F. Canelli.—p. 58.  
\*Echinococcus Cyst in Both Lungs. G. Genoese.—p. 65.  
\*Case of Osteospathyrosis. M. Mallardi.—p. 75.  
Lumbar Puncture: Technic and Findings. R. Vaglio.—p. 81. Conc'n.

**The Thymus in Young Children.**—Canelli discusses the fibrous reticulum in the thymus, and its significance in the physiology and pathology of the organ.

**Echinococcus Disease of Both Lungs.**—Genoese excised the cyst in one lung of the girl of 7, and is planning a similar operation on the other lung. The biologic tests in this case were all negative but radiography had cleared up the diagnosis. Bilateral echinococcus pulmonary disease is rare. In Thorstensen's 920 cases in Iceland, 4 were in children between 2 and 10, none younger than this.

**Osteospathyrosis.**—The first fracture had occurred at the age of 7 months, and several others followed. They occurred without the child's showing signs of pain. The boy is now 3. Inherited syphilis is sometimes a factor in this constitutional anomaly, but there was nothing to indicate this in the present case.

### Policlinico, Rome

Jan. 16, 1922, 29, No. 3

- \*Colloidal Benzoin Test for the Spinal Fluid. A. Ferraro.—p. 77.  
Tracheobronchial Adenopathy Simulating Croup. G. Tron.—p. 80.  
\*To Render Salt-Free Food More Palatable. B. Masci.—p. 85.  
Cholelithiasis in General Practice. P. Gilberti.—p. 86.  
Prophylaxis of Typhoid. A. Ferri.—p. 92.

**The Colloidal Benzoin Reaction in Spinal Fluid.**—Ferraro obtained conflicting responses in 51 cases. It was constantly positive in 10 cases of general paresis and in 5 in which syphilis could be excluded, while it was negative in 3 cases of neurosyphilis and in 27 nonsyphilitics.

**To Render the Salt-Poor Diet More Palatable.**—Masci commends sodium citrate as a harmless substitute for sodium chlorid when the latter is contraindicated. He says that the small amounts of sodium citrate required, to render the food palatable, do not have any effect on the health in general, or modify elimination through the kidneys. The appetite returns as the lack of salt in the food is masked by this means.

### Riforma Medica, Naples

Dec. 10, 1921, 37, No. 50

- \*Febrile Infection with Bacillus Asiaticus. I. Jacono.—p. 1165.  
The Sachs-Georgi Reaction in Syphilis. L. Scalas.—p. 1166.  
\*Treatment of Traumatic Epilepsy. C. Gamberini.—p. 1170.  
Improved Technic for Staining Fat with Sudan III. Cevario.—p. 1173.  
Congenital Blue Disease in Two Brothers. G. Martini.—p. 1174.  
Intermittent Hydronephrosis. G. Molinari.—p. 1175.

**Fever from Bacillus Asiaticus.**—Jacono describes the clinical picture from and the biology of the two forms of *Bacillus asiaticus*.

**Treatment of Traumatic Epilepsy.**—Gamberini operated in 138 of 652 war wounds of the skull. Epilepsy developed later in 44 among those traced to date; in 10 cases not until after an interval of two or three years. He operated anew for the epilepsy in 33 cases, and 15 were cured and 5 materially improved. No benefit was apparent in the other 13. The best results in all his experience were always realized with an autoplasmic operation, turning back over the gap in the skull

a bone and periosteum flap from the vicinity, fitting it well into place. The elasticity and yielding nature of the very thin flap insures a safety-valve action.

### Brazil-Medico, Rio de Janeiro

Nov. 26, 1921, 2, No. 20

- \*Neurofibromatosis with Alcoholism. O. Clark.—p. 297.  
Bismuth in Treatment of Syphilis. Carvalho Lima.—p. 300.  
Symmelus Monster-Fetus. P. da Silva.—p. 302.

**Cirrhosis of Liver in Alcohol Addiction.**—The clinical diagnosis was Recklinghausen's disease in a hard drinker, and the ascites, emaciation and splenomegaly were ascribed to atrophic cirrhosis of the liver, as the severe dropsy exemplified the proverb, "If you live in alcohol, you'll die in water." Necropsy, however, showed the liver and spleen comparatively normal, but the stomach had shrunk to the diameter of the duodenum. Clark remarks that fully 50 per cent. of the cases of cirrhosis of the liver escape detection until death from intercurrent disease, but in this case, although the clinical picture indicated cirrhosis, yet the liver was comparatively sound. His experience has been that violent hematemesis or melena in an adult is almost certain to be traceable to cirrhosis of the liver, especially if the Wassermann test is positive. Alcohol and syphilis are the main factors. The assumption of complicating tuberculous peritonitis as responsible for the ascites with cirrhosis of the liver has been discarded as erroneous, and the preponderant syphilis is now recognized. Treatment for syphilis may induce great improvement. Splenectomy has often rendered good service, but in the case described the inanition from the alcohol addiction had entailed insufficiency of the heart, and this was chiefly responsible for the ascites and edema.

Dec. 3, 1921, 2, No. 21

- \*Rhinoscleroma in Brazil. F. Terra.—p. 311.  
\*Asthma and Anaphylaxis. A. Passos.—p. 320.

**Rhinoscleroma in Brazil.**—Terra knows of only eight cases of rhinoscleroma in Brazil. He ascribes it to the encapsulated bacillus described by Frisch, and urges tentative treatment with 1 per cent. solution of antimony and potassium tartrate, injected intravenously, in the recent cases. In the older cases radium may prove effectual; he reports two cases completely cured under radium, and cites a few other successful cases of the kind given radium treatment in Italy, Germany or elsewhere.

**Asthma.**—Passos reviews the recent literature on asthma as a manifestation of anaphylaxis.

Dec. 10, 1921, 2, No. 22

- Old Insidious Appendicitis. J. Monjardino.—p. 334.  
New Trematodes. IV. L. Travassos.—p. 337.  
\*Sir William Osler and His Philosophy. O. Clark.—p. 338.

**Sir William Osler.**—Clark says that Osler's finding time to write his 730 works on so many different topics in the midst of his multiple and incessant activities is the greatest mystery of his life. He quotes freely from Osler's works as an inspiration to young research workers and other scientists, and pays tribute to him as the great apostle of "doing what lies clearly at hand," and doing it with enthusiasm.

Dec. 17, 1921, 2, No. 23

- \*The Bacteriophagum. A. Machade and Costa Cruz.—p. 347.  
\*Treatment of Strabismus. J. Santa Cecilia.—p. 348.  
\*Chenopodium and Its Toxicity. Decio Parreiras.—p. 352.

**The Bacteriophagum.**—The research reported by Machado and Costa Cruz has convinced them that the phenomena ascribed to d'Hérelle's bacteriophagum are the result of ferment action from the products of the bacteria.

**Strabismus.**—Santa Cecilia describes his application of a modification of the Axenfeld or de Lapersonne's technic. The article is illustrated.

**Toxicity of Chenopodium.**—Parreiras has been working with the Rockefeller Foundation, and for four years has given chenopodium about 100,000 times a month. In this whole period he was never consulted on account of grave symptoms from the use of the drug except on six occasions, and in these the symptoms subsided so promptly that no measures were applied. The director of the Rockefeller Foundation in



Brazil recently announced that in 644,000 treatments there had been fourteen deaths which the chenopodium is assumed to have caused or hastened. For children under 10 the dose is 2 drops for the year of the age; from 10 to 12, a total of 25 drops; from 12 to 15, 30 drops; from 15 to 20, 40 drops; from 20 to 50, 50 drops, and after the age of 50, 40 drops.

### Repertorio de Medicina y Cirugía, Bogotá

October, 1921, 13, No. 1

Roentgenographic Study of the Kidney. Germán Reyes R.—p. 5.  
\*Constipation. F. Santander Uscátegui.—p. 21. Cone'n No. 2, p. 71.

November, 1921, 13, No. 2

Case of Renal Tuberculosis. Germán Reyes R.—p. 62.  
Disinfection of Rooms. C. Aguirre Plata.—p. 67.

**Causes, Consequences and Treatment of Constipation.**—Santander's long study of this subject emphasizes the wide range of factors that can be incriminated in constipation, and the widely different treatment that may be called for in different cases. In some cases in children described, after failure of all other measures, belladonna restored normal functioning to the bowel.

### Semana Médica, Buenos Aires

Nov. 17, 1921, 28, No. 46

Prophylaxis of Diphtheria. J. P. Garrahan.—p. 651.  
\*Recurrence of Anthrax. F. F. Inda.—p. 657.  
Physiopathology of Endometrium in Relation to Menstruation. O. L. Bottaro.—p. 664.  
\*Protracted Endocarditis. T. Padilla.—p. 674.  
Neuroma in Pelvis Obstructing Delivery. R. Mestre.—p. 680.  
Roentgen Rays in Treatment of Asthma. C. Heuser.—p. 682.  
Organized Prophylaxis of Leprosy. V. Delfino.—p. 684.

**Recurrence of Anthrax.**—Inda found evidence of recurrence only in two of his 179 anthrax patients in the last two years.

**Protracted Endocarditis.**—Padilla gives a detailed description of a typical case of endocarditis lenta in a young man, and emphasizes that this disease develops only in an already damaged heart as a rule. There is always a history of acute rheumatism or chorea, or some other infection or syphilis. There may be transient bacteriemia but no septicemia. Anemia, splenomegaly and embolism are special features; the emboli reaching various organs induce special symptoms from the latter. The streptococcus (viridans) involved settles by preference in the left heart.

### Archiv für Kinderheilkunde, Stuttgart

Jan. 28, 1922, 70, No. 4

\*Measurement of Intracranial Pressure. E. Wentzler.—p. 241.  
\*Pneumococcus Empyema in Infants. P. Widowitz.—p. 246.  
\*Skeletal Changes in Inherited Syphilis. F. Thoenes.—p. 252.  
\*Respiration in Children. A. Eckstein and E. Rominger.—p. 258.  
\*Tuberculosis of Skin in Children. W. Lutz.—p. 274.

**Gage for Intracranial Pressure in Infants.**—Wentzler describes with an illustration the little instrument he has devised to record the excursions of the greater fontanel during respiration. The range is smaller, the tighter the fontanel is stretched; the findings have to be estimated in relation to the diameter of the fontanel. Among its other uses, the gage may call for lumbar puncture at once, or it may show that a proposed lumbar puncture is unnecessary. The instrument has shown that abnormal reduction in the intracranial pressure is more frequent and more pronounced than had been supposed possible hitherto. Its clinical importance is still a question.

**Pneumococcus Infections in Young Children.**—Widowitz' tabulation of thirty-two cases of pneumococcus empyema, following pneumonia, shows that infants are peculiarly predisposed to metapneumonic affections, while older children are more inclined to streptococcus empyema. Of the pneumococcus cases only 17 per cent. died, while the mortality in the other cases was 71 per cent. The virulence of the pneumococcus seems to decline after pneumonia in infants, so that only conservative measures are indicated in treatment. The prognosis grows more and more favorable the longer the interval after the pneumonia. Pneumococcus processes not preceded by pneumonia must be viewed from another standpoint, and be given surgical treatment accordingly.

**Syphilitic Changes in Infants.**—In the forty-three infants with inherited syphilis studied by Thoenes, the distal epiphyses of the ulna and radius seemed to be the favorite spot for localization of the syphilitic changes; but they were not symmetrical. Roentgenoscopy is an invaluable aid in detecting inherited syphilis in infants. In his experience it showed the severer bone lesions in the cases free from skin manifestations.

**Pathology of the Respiration.**—In this fourth installment, the changes in the respiration in tuberculous meningitis in children are discussed, and the nervous origin of the purely functional dissociation.

**Tuberculosis of the Skin in Children.**—Lutz analyzes the numerous publications on this subject in the last two years.

### Archiv für klinische Chirurgie, Berlin

Nov. 24, 1921, 118. A. Bier Festschrift. Last Third

\*Fracture of Clavicle. F. Härtel.—p. 602. Id. Hülsmann.—p. 626.  
\*Rupture at Base of Terminal Phalanx. Zur Verth.—p. 630.  
\*Fracture of the Elbow. E. Herzberg.—p. 645.  
Origin of Loose Bodies in Joints. H. Ziegner.—p. 662.  
Habitual Luxation of Patella. F. Karl.—p. 667.  
\*Coxa Valga Luxans. B. Cohn.—p. 678.  
Posttraumatic Remote Multiple Ankylosis. F. Wille.—p. 696.  
\*Traumatic Luxation of Hip Joint in Children. O. Doelle.—p. 703.  
Spontaneous Rupture of Quadriceps. Wotschack.—p. 726.  
\*Regeneration of Tendon Sheath. A. Salomon.—p. 733.  
Regeneration After Panaritium in Bone. H. Beck.—p. 748.  
\*Importance of Medium for Life of Tissue. B. O. Pribram and J. Finger.—p. 768.  
Postoperative Checking of Secretion of Saliva. Horwitz.—p. 788.  
\*Treatment of Pernicious Anemia. Walterhöfer and Schramm.—p. 794.  
Involvement of Lymph Glands in Dysentery. Dürig.—p. 812.  
Two Rare Congenital Anomalies. P. Esau.—p. 817.  
Length of Stay of Foreign Bodies in Appendix. Id.—p. 821.  
Abscess in Sagging Kidney. Id.—p. 823.  
Removal of Foreign Body in Bronchus. W. Keppler.—p. 825.  
\*Tumors Retrogress After Exploratory Operation. W. Müller.—p. 830.  
\*Suprarenalectomy in Epilepsy. V. Schmieden and H. Peiper.—p. 845.  
Dorsal Luxation of Big Toe. E. O. P. Schultze.—p. 865.  
\*Posttraumatic Disease of Vertebrae. H. Kümmell.—p. 876.  
\*Boxing Fatalities. W. Kohlrausch.—p. 902.

**Fracture of the Clavicle.**—In Härtel's six cases, various measures were applied to correct the dislocation from the drag of the shoulder, as he describes. The arms must be bent backward, he says, the forearms horizontal, as when a cane is passed through the arms behind the back. Hülsmann's method lifts up the shoulder with a crutch pad fastened to a splint worn on the arm, but leaving the joints free.

**Fracture of Terminal Phalanx of Fingers.**—Zur Verth analyzes 250 cases of fracture of a finger bone and the treatment.

**Fracture of Elbow.**—Herzberg describes the various forms of treatment adapted for the different kinds of fractures in the elbow region, as applied in Bier's service.

**Coxa Valga Luxans.**—Cohn insists on the necessity for differentiating this congenital anomaly as there does not seem to be any means for correcting it. The valgus position of the neck, and the defective development and deformity of the acetabulum render all measures futile and hopeless.

**Traumatic Luxation of Hip Joint in Children.**—Doelle adds 2 more cases to 36 compiled from the literature, and summarizes them all, comparing the treatment with the outcome.

**Regeneration of Tendon Sheath After Partial Laceration.**—In Salomon's two cases the Achilles tendon was the one involved. The partial spontaneous reconstruction of the tendon sheath observed in these cases is an object lesson for repair of tendon sheaths.

**The Medium and Metaplasia.**—Experimental research is described in which scraps of skin were implanted in the peritoneum, and scraps of peritoneum implanted in the skin, etc. The importance of the medium for the maintenance of tissue characteristics is emphasized by the findings. In one instance a scrap of epidermis transplanted in the peritoneum developed into a tissue like a horny cancer. The facts observed confirm the advantages of refraining from draining in operations on cavities lined with connective tissue. The peritoneum, for instance, conquers infection by a process which in other tissues represents a phlegmonous inflamma-



tion, that is, a destruction of its own tissue. But the cavity has to be a closed one for this to proceed naturally.

**Operative Treatment of Pernicious Anemia.**—Walterhöfer and Schramm state that in sixteen patients with pernicious anemia, treated by splenectomy, only one survived for five years and only two survived for over two and over four years. The others died in from two months to two years. They have been attacking the disease from another standpoint, removing part of the bone marrow from a long bone, seeking thus to stimulate regeneration of the bone marrow. Nine cases are described in detail, all in an advanced stage, mostly after several remissions of the disease. A favorable effect, subjective and objective, was evident, the number of erythrocytes rapidly increasing. In one case a complete remission followed the operation. Four of the patients have died since, one from pneumonia and one from complicating colitis. They commend this "demarrowing" (*entmarkung*), for cases rebellious to other measures, especially during a remission, and after the patient has been benefited by transfusion of blood or other measures.

**Retrogression of Tumors After Exploratory Operation.**—Müller appeals for publication of all cases of this kind, and reports three from his own experience. One was in a youth of 17; the large sarcoma in the bones of the right pelvis was absolutely inoperable, but he scooped out masses from it, to a total of about the bulk of an orange. It bled freely, and the patient soon began to improve. Nine years later the young man seems to be practically cured, leading an active life. He queries whether the tumor was malignant or a benign osteoma to start with. In the second case a rapidly growing myxosarcoma in the thigh of an 18 months' infant retrogressed after an exploratory operation, and the child at 14 is in perfect health. In the third case, an enchondroma in the right pelvis of a man of 43 likewise retrogressed after an exploratory operation. In these last two cases there had been suppuration afterward, but not in the first case.

**Partial Suprarenalectomy in Epilepsy.**—No permanent benefit was obtained in seven cases of epilepsy treated by removal of one suprarenal. The patients were from 6 to 23 years old. In one of the women menstruation became irregular and scanty afterward, while in another woman menstruation reappeared, with normal regularity, after suspension for eight years. In both these cases the seizures appeared in connection with the menses. This was evident likewise in another case he cites, in which a favorable influence from the suprarenalectomy was manifest.

**Posttraumatic Spondylitis.**—Kümmel here brings down to date the disease of the vertebrae called by his name. The trauma is usually slight, and some time elapses before symptoms develop. The main feature is the softening of the intervertebral disk, but this is hard to detect in the roentgenogram at first. An early diagnosis is important to ward off deformity. The Albee operation has rendered good service.

**Boxing Fatalities.**—Kohlrausch reports a case of cerebral hemorrhage occurring during a boxing bout, and cites a second case at Berlin and 4 from America. In 2 of the total 6 cases the fall on the floor was evidently responsible; in the others a blow.

### Archiv für Verdauungs-Krankheiten, etc., Berlin

December, 1921, 29, No. 1-2

\*Fasting in Treatment of Diabetes. H. Gorke.—p. 1.

\*Psychic Influence on Gastric Secretion. G. R. Heyer.—p. 11.

\*Enteroptosis. F. W. Strauch.—p. 28.

\*Injury of Stomach Mucosa from Contusions. R. Böttcher.—p. 40.

\*Limits of Resection of Small Intestine. F. Schilling.—p. 52.

\*Spirochete Enteritis. A. Luger.—p. 59.

\*Etiology of Jaundice. W. Löwenberg.—p. 94.

**Fasting in Treatment of Diabetes.**—Gorke says that the experience of German clinicians with Allen's fasting treatment of diabetes has not been very favorable. But in Minowski's service, seventeen of nineteen diabetics from 12 to 62 years of age had the urine completely freed of sugar under it, and in most of them acidosis was prevented. In the two gravest cases the glycosuria and acetone output were reduced to minimal proportions. In one of these very grave cases, after months of this comparatively good condition, the patient

left the clinic for home, and he began to eat fat and protein in large amounts, contrary to directions. This excessive metabolism entailed acidosis and coma, with death the eighth day after leaving the clinic. Gorke is convinced that diabetics weighing about 60 kg. do better when restricted to 1,500 or 2,000 calories, containing only 50 or 75 gm. protein. He aims to have them weigh the same when they leave as when they entered the clinic, and to keep up the restrictions at home. Over 2,500 calories he regards as bound to reduce the tolerance, and thus to hasten the progress of the derangement of the metabolism.

**Mental Influence on Gastric Secretion.**—Heyer's research during hypnosis, a fine stomach tube in place, with continuous aspiration, demonstrated a remarkable variability in the acid content of the gastric juice in the same person at different times after both test meals and suggestion. The suggestion of pain, danger, recalling of war happenings, arrested at once the gastric secretion in nearly all the subjects. The suggestion of agreeable events, a spring day, winning money in a lottery, etc., never had the opposite effect, but had the same arresting influence only it occurred more slowly. His research thus has demonstrated the law that any diversion of the mind, painful or pleasurable, from the act of eating, checks the secretion of gastric juice. The effect is more pronounced, the stronger the mental impression. In one patient with pure mania the gastric secretion was found constantly normal. In all the subjects, the stomach secretion increased at once in large amounts when a nutrient enema was injected. The distention of the rectum evidently promoted secretion in the stomach by reflex action, as all psychic factors were excluded, and the reaction occurred too promptly for the nourishment to have made its influence felt. The findings in this line suggest the necessity for giving nutrient enemas a drop at a time, with gastric ulcer, to avert this reflex action from distention of the rectum. His tables show, for instance, a drop from 10 or 20 or 18 to 0.5, 2 and 1 in the amount of gastric juice secreted under the suggestion of bombing, a railroad accident or the like. The drop was from 10 to 3 under suggestion of good news. Atropin given before or with the sham feeding checked secretion, but it did not seem to influence it when not administered until the secretion was well under way. Heyer's first report on his research in this line was described in THE JOURNAL, June 11, 1921, p. 1714.

**Ptois of the Intestines.**—Strauch reports three cases which prove that a sagging bowel in a child may induce symptoms suggesting appendicitis. In all, regulation of the diet, tonics, massage, baths and systematic exercise of the abdominal wall (reclining), flexing the thighs (also reclining), cured the tendency completely with no recurrence during the year since. The differential diagnosis is particularly important as, with actual appendicitis, gymnastic exercises are contraindicated, while this is the one thing needed with coloptosis to supplement the coarse food and avoidance of foods inducing fermentation. In two other children the sagging of the right flexure had induced symptoms suggesting gallbladder disease. He warns that children with vague pains in the back and cecum region, and fever, may have some mesenteric or bowel tuberculous process. He describes further some cases in adults to illustrate the grave clinical picture that may be induced by coloptosis alone. In one girl of 20 the disturbances from the sagging transverse colon were multiplied by obstipation of neurotic origin, and great improvement was realized by abdominal exercises, electricity, a supporting band and atropin. Ovarian and thyroid incompetency had evidently cooperated in the clinical picture. In the middle aged, coloptosis often causes symptoms which suggest cancer. In children, a primary enteroptosis may exist without signs of a substandard constitution otherwise. At puberty, symptoms from endocrine insufficiency may dominate the clinical picture from the ptosis. At all ages, hypotonia of the tissues is the one main factor in enteroptosis, and treatment must aim to restore strength and elasticity to the muscular system. Gymnastic exercises and massage of the abdominal walls and diaphragm and of the floor of the pelvis will aid in overcoming the flabbiness, supplemented by a supporting band, rest and extra nourishing food, with general baths or



drugs as individually indicated. Only after failure of systematic measures in this line should operative measures be considered.

**Traumatic Origin of Gastric Ulcer.**—A woman committed suicide by jumping from a window, and among the injuries of tissue found at necropsy, Böttcher noted two lacerations of the mucosa in the lesser curvature of the stomach, exactly at the points where typical gastric ulcers usually develop. This finding is similar to those in the stomachs of animals after contusion of the abdomen. A few clinical cases are also on record. The stomach is forced back against the spine by the contusion, and the mucosa is injured thereby.

**How Long a Segment of Small Intestine Can We Resect?**—Schilling's study of the literature fails to set any limit. Each case has to be decided by the individual conditions.

**Spirochete Enteritis.**—Four cases of acute benign hemorrhagic enteritis were explained by discovery of spirochetes and fusiform bacilli in the stools. Other pathogenic bacteria and protozoa were never found or in such small numbers as to be negligible. The disappearance of the spirochetes on recovery confirmed the causal connection.

**Catarrhal Jaundice.**—Löwenberg comments on the increasing prevalence of catarrhal jaundice (Berlin), and of the catarrhal conditions in the stomach which accompany it. The catarrhal process probably involves the duodenum and stomach as well as the bile ducts. His agglutination tests failed to connect the colon-typhoid group with the jaundice.

### Deutsche medizinische Wochenschrift, Berlin

Dec. 29, 1921, 47, No. 52

- \*The d'Hérelle Phenomenon. R. Otto and H. Munter.—p. 1579.
- The Tuberculin Reaction. Rosenbach.—p. 1581.
- Heart Muscle Tone and Postdiphtheric Cardiac Paralysis. U. Friedemann.—p. 1581.
- Atropin as Adjuvant in Intestinal Inactivity. Arnoldi.—p. 1583.
- Schilling Classification in the Blood Count. Schilling.—p. 1584.
- Inflammatory Tumors of the Mamma. E. Glass.—p. 1585.
- Choice of Protective Lenses. L. Bloch.—p. 1586.
- Some Lessons Learned from Quaker Mission. Tugendreich.—p. 1587.
- Technic of the Urochromogen Reaction. J. Haug.—p. 1589.
- Rôle of Blood Platelets in Fatalities Resulting from Indirect Transfusion of Blood. H. Zeller.—p. 1590.
- Gonococcal Skin Injuries in the New-Born. Liebe.—p. 1590.
- Hutchinson Teeth. S. K. Mayer.—p. 1590.
- Prevention of Fluctuations of Temperature in Gas-Heated Bacteriologic Incubators. Messerschmidt.—p. 1591.
- Recent Results of Anatomic Studies on the Brains of Mental Defectives. H. G. Creutzfeldt.—p. 1591.
- Judging Disability Claims After Accidents. Ledderhose.—p. 1592.

**The d'Hérelle Phenomenon.**—Otto and Munter discuss the significance of and the four ways of demonstrating the d'Hérelle phenomenon. This consists in the fact that stool filtrates of dysentery patients (or convalescents) destroy in vitro dysentery bacilli. First, the stool filtrate may be put into a nutritive medium, to which dysentery bacilli are then added; in contradistinction to the controls, no bacterial growth takes place, at least not at first, although long incubation may produce some growth of highly resistant microorganisms. Or again, the filtrate is added to a bacterial emulsion in a meat broth; it may then be noted that the broth which was previously cloudy, owing to the bacteria present, now becomes clear in a few hours. Thirdly, a minute quantity of the filtrate may be dropped on an agar plate with a bacterial smear (before it is incubated); when the smear is then incubated there will be no growth where the filtrate touched it. Finally, the presence of the active principle may be demonstrated by an animal experiment; for example, if we inject intraperitoneally in a guinea-pig a small quantity of the active filtrate, along with a certain quantity of the bacterial culture, it will be noted that the bacilli within the abdomen of the animal do not increase; this guinea-pig lives, while the control animal, receiving no filtrate, dies.

### Klinische Wochenschrift, Berlin

Jan. 1, 1922, 1, No. 1

- \*Enlargement of the Heart. E. Meyer.—p. 1.
- \*The Surgery of Gastric Ulcer. V. Schmieden.—p. 5.
- The Innervation of Organs. E. Abderhalden.—p. 7.
- Liver in Guinea-Pigs with Typhus. M. H. Kuczyński.—p. 8.
- Roentgen Ray Stimulation of Bone Marrow. Bucky and Guggenheimer.—p. 11.

- Inflammation and the Nervous System. Kauffmann and Winkel.—p. 12.
- Coincidence of Syphilis and Tuberculosis. Frei and Spitzer.—p. 15.
- Sugar Days in Treatment of Infantile Nephritis. Czapski.—p. 18.
- Results with the Morawitz and Denecke Procedure for Testing Vascular Function. K. Hellmuth.—p. 19.
- Causes of Green Coloration of Infant Stools. Freudenberg.—p. 21.
- Hormone Produced by Heart Nerves. O. Loewi.—p. 22.
- Phosphoric Acid Formed in Contracting Muscle. Embden et al.—p. 23.
- Investigations on Narcosis. Lange and Müller.—p. 23.
- Case of Brown-Séquard Syndrome. Rahmenführer.—p. 23.
- Sarcoma of the Calcaneum. B. Valentin.—p. 24.
- Diagnosis of Cardiac Arrhythmia Without Use of Graphic Methods. E. Magnus-Alsleben.—p. 25.
- Treatment of Enuresis. J. Zappert.—p. 27. Conc'n No. 2, p. 75.
- Influence of the War on Milk Supply. A. Juckenback.—p. 30.

**Enlargement of the Heart.**—Meyer emphasizes the need of distinguishing various types of cardiac enlargement as treatment differs with each. An enlargement may be occasioned by an increase in the total quantity of circulating blood whereby the heart wall is subjected to higher tension, as the result of which gradual hypertrophy may take place if the increased tension is long continued. On the other hand, an enlargement may be due to the abnormal distribution of the blood, though the quantity has remained the same, a condition that arises through a hypofunctioning of certain portions of the cardiovascular system. This constitutes the most frequent type of cardiac decompensation. Purely muscular enlargement without extension of the heart cavity, a condition which the pathologic anatomists designate as simple hypertrophy, or, if the size of the heart cavity is diminished, as concentric hypertrophy, is difficult to demonstrate, unless a heaving apex impulse points to hypertrophy of the left ventricle, or marked epigastric pulsation indicates accelerated action of the right ventricle. Meyer announces that his research has demonstrated that conditions in rabbits conform very closely to those in man so far as the phenomena of adaptation in the circulation are concerned. These phenomena can thus be instructively studied in rabbits.

**Gastric Ulcer Surgery.**—Schmieden emphasizes that in the case of carcinoma of the stomach we must consider how much of the stomach wall can be safely cut away, but that in gastric ulcer, on the other hand, we must preserve as much of the stomach wall as possible.

### Medizinische Klinik, Berlin

Dec. 18, 1921, 17, No. 51

- \*Isolated Pupil Disturbances in Syphilis. G. L. Dreyfus.—p. 1539.
- Diagnostic Extinction Test in Scarlet Fever. G. Dörner.—p. 1543.
- \*Practical Tests of Stomach Function. L. v. Friedrich.—p. 1545.
- \*Treatment of Septic Abortion. Henkel et al.—p. 1548. Conc'n.
- Green Discoloration of Infant from Spinach. Dollinger.—p. 1553.
- Experiences with Serologic Tests for Syphilis. Winkler.—p. 1554.
- "Gymnastics of the Vessels." A. Fleisch.—p. 1555.
- \*Recent Literature on Psychopathology. W. Stekel.—p. 1558. Conc'n.

**Isolated Pupil Disturbances in Syphilis.**—Dreyfus has had under supervision for several years 60 per cent. of 107 persons with isolated pupil disturbances for which syphilis could be considered responsible, after exclusion of diabetes, epidemic encephalitis and other endogenous intoxications and chronic alcoholism, etc. His tabulated details sustain his assertion that positive findings in the cerebrospinal fluid are a sign of active cerebral syphilis, calling for vigorous treatment. Such cases may develop neurosyphilis, tabes or paresis, usually the latter. A Damocles' sword is hanging over their heads. With primary negative findings in the cerebrospinal fluid, the cerebral syphilis may be assumed in all probability to be arrested. If the serum is negative likewise, no further treatment is required. The necropsies in these cases with negative spinal fluid findings always showed signs of old processes, but the microscope disclosed no evidence of an active process. A secondary negative cerebrospinal fluid may become positive again, sooner or later, and the prognosis is thus different. In 14 cases under observation for six to nine years, only 2 were stationary; in the 12 others the syphilis had run a progressive course.

**Functional Tests of the Stomach.**—Friedrich commends the alcohol test breakfast as extremely convenient and instructive in general practice. The subject drinks 300 c.c., fasting, of a 5 per cent. solution of alcohol, and the stomach contents are siphoned out half an hour later. By giving carmin the evening before, the motor functioning can be estimated at



the same time. The alcohol test breakfast is as informative on all points as the other test meals, as he shows, with the exception of chymification and stratification.

**Treatment of Septic Abortion.**—This is the concluding instalment of the replies to a questionnaire on this subject sent to a large number of prominent physicians. In Koblanck's response he remarked that in the last week at the Berlin Virchow Hospital four women had to be given operative treatment on account of perforation of the uterus during curetting by a physician. Every septic peritonitis calls for operative measures, the earlier the better. But if it has lasted for over three days and if the bacteria in the blood are virulent, the operation has no chance of success. Henkel emphasized that the management of abortion in general practice should be conservative. The physician should limit his efforts to sustaining the natural forces to the utmost. Hemorrhage does not call for active measures. Tamponing the vagina and giving something to promote the labor contractions generally not only arrests the hemorrhage but insures the spontaneous expulsion of the contents of the uterus. Only where the bleeding is very extensive and the cervix dilated, should intra-uterine measures be considered, and then only the fingers, no instruments, used to evacuate the uterus. Particularly direful have been the results in the cases in which the cervix was not permeable. The woman recovers most rapidly when the spontaneous conclusion of the abortion has been realized.

**Psychoanalysis and Sexual Science.**—This collective review of recent literature embraces, further, psychopathology and medical psychology. Stekel remarks in conclusion that no sensible person now doubts the existence of telepathy although we cannot explain it. Wireless telegraphy is a fact that has to be counted with, and although no one can explain it, yet it is being constantly studied and its scope enlarged.

### Münchener medizinische Wochenschrift, Munich

Dec. 16, 1921, 68, No. 50

- Parathyroid Implants in Postoperative Tetany. Borchers.—p. 1609.  
Silicic Acid in Arteriosclerosis, and Related Conditions. Kühn.—p. 1612.  
\*Prophylactic Irradiation of Spleen and Liver. F. Partsch.—p. 1613.  
Sedative Treatment in Typhus Fever. T. Hausmann.—p. 1615.  
Behavior of Blood in Mountain Regions. Frenkel-Tissot.—p. 1616.  
Roentgenology in Tuberculosis of Lungs. Kaestle.—p. 1617.  
Roentgenograms with Soft Rays. F. Zacher.—p. 1619.  
A Tight-Fitting Head Bandage. O. Goetze.—p. 1621.  
Meostagmin Reaction Differentiates Cancer. Schemensky.—p. 1622.  
Painless Delivery Under Suggestion. O. Flöel.—p. 1623.  
The Symptomatology of Mitral Insufficiency. Herzog.—p. 1623.  
Injury to Bladder by Pitchfork Handle. W. Schröder.—p. 1624.  
Foreign Bodies in Bladder. H. Ulrich.—p. 1624.  
Combination of Varioloid and Latent Syphilis. Hillenberg.—p. 1624.  
Operative Treatment of Scoliosis. J. von Finck.—p. 1625.  
Value of an Aorta Clamp in Obstetric Practice. Hoffmann.—p. 1625.  
Treatment of Pyelitis. W. Nonnenbruch.—p. 1626.

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- Lymphocytosis. J. Weicksel.—p. 1643.  
Clasping Reflex and Brudzinski Sign in Infants. Freudenberg.—p. 1646.  
Thoracoscopy. R. Korbach.—p. 1647.  
Thermal Stimulation of the Internal Ear. B. Griessmann.—p. 1648.  
The d'Hérèlle Phenomenon. W. Rimpau.—p. 1649.  
Clinical Picture of Esophageal Atresia. F. Göppert.—p. 1649.  
Late Tetanus. F. Rehm.—p. 1649.  
Traumatic Rupture of Common Bile Duct. H. Rudberg.—p. 1650.  
Remarks on Problem of Tuberculosis. F. Toeplitz.—p. 1651.  
Care of the Teeth. M. Kühn.—p. 1652.  
Anthropometry in Relation to Medicine. W. Scheidt.—p. 1653.  
Painless Birth. K. von Oettingen.—p. 1654.  
Tetanus After Burn from High Power Current. W. Förster.—p. 1655.  
Treatment of Recent Syphilis. L. von Zumbusch.—p. 1656.  
Physiology and Reforms in Medical Education. K. Bürker.—p. 1658.

**Preoperative Roentgen Irradiation of the Spleen and Liver.**—Partsch states that the prophylactic irradiation of the spleen brought about a decrease in the coagulation time of the blood at operation in only a small fraction of the cases. There was no clear evidence that preoperative irradiation exerted any influence on the course of healing by preventing postoperative hemorrhages and hematomas. The results of irradiation of the liver are as uncertain as those of irradiation of the spleen. Irradiation is, therefore, superfluous as a prophylactic from the standpoint of practical surgery, and is to be recommended only for patients with markedly retarded coagulation time (hemophilia, icterus).

### Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

Nov. 26, 1921, 2, No. 22

- \*Psychoanalysis. A. F. Meijer.—p. 2662.  
\*Electric Accidents. C. W. G. Mieremet.—p. 2678.  
\*Roentgen Treatment of Trichophytosis. E. Wiener.—p. 2684.  
\*Double Murder and Suicide. J. P. L. Hulst.—p. 2688.  
\*Pneumococcus Meningitis. D. van der Kooi.—p. 2695.  
Thumb Reconstructed from Big Toe. J. van Assen.—p. 2747.

**Psychoanalysis.**—Meijer complains that Freud's methods are criticized by persons who have not taken the trouble to really comprehend the principles, as he shows by some quotations from recent textbooks. He emphasizes further that none of the data accumulated by the World War seem to conflict with Freud's views.

**Experimental Research on Live Wire Electric Accidents.**—Mieremet was impressed with the similarity between the local microscopic findings in burns from a strong electric current and burns from the action of fire. But the macroscopic picture may differ decidedly; only with the electric injury—and not always then—do we find the hard white patches resembling cartilage or stearin. These patches induced in rabbits were cast off after a few days, seventeen at most. This occurs also after clinical electric accidents, these injuries behaving differently in this respect from ordinary burns and other wounds.

**Radiotherapy of Trichophytosis.**—Wiener has never had any secondary lesions develop in his hundred cases of application of the roentgen rays to cure sycosis of the beard. He says that it can be counted on to cure many rebellious cases.

**Suicide in General Paresis.**—A case of murder plus suicide is described in which necropsy revealed unsuspected parietic dementia, explaining the apparently motiveless tragedy.

**Pneumococcus Meningitis with Apoplectic Onset.**—The supposedly healthy young woman was stricken down suddenly as with an apoplectic stroke. Symptoms of meningitis followed. Lumbar puncture gave some relief but the course was long, and there were some stiffness and pain in the spine five months later.

### Acta Chirurgica Scandinavica, Stockholm

Jan. 17, 1922, 54, No. 4

- \*Emboli and Embolic Gangrene. P. Bull.—p. 315.  
\*Embolectomy for Embolic Disturbances. E. Key.—p. 339.  
\*Arthroplastic Operation on Elbow. N. Silfverkiöld.—p. 417.

**Emboli and Embolic Gangrene.**—Bull's heading to his long article—which is in English—is "What can more than 6,000 postmortem examinations teach us about emboli and embolic gangrene of the extremities?" In recent years he has encountered 6 cases of gangrene from embolism in the main arteries of the leg, bilateral in 2. In a total of 6,140 necropsies he found evidence of embolism in arm or leg in 15, but in 4 per cent. of the total cadavers he found thrombosis in the aorta in 9 cases and in the heart in 234. Thrombi were found in the right heart in 67; left heart in 63, and in both the right and left sides of the heart in 57. In 19 cases the thrombosis in the heart was not associated with valvular disease, hypertrophy, fibrous myocarditis or acute endocarditis. Of the 181 cases of thrombosis in the heart, 5 were in children, as also one of the 73 with valvular thrombosis. These 6 children ranged from 7 months to 13 years in age. Embolic gangrene thus is not always senile gangrene, even when it appears in the elderly. Bull concludes his analysis by emphasizing that embolism in a limb is usually merely one link in a chain of emboli in other organs, prior to, simultaneous with or subsequent to the embolism in the extremity. In his 15 cases of the latter, embolism was manifest in the lungs (9), in kidneys (9), in spleen (7), in brain (4) and in the intestines (1) in all but one of the cadavers in this group. Among the 237 with thrombosis in the heart, embolism was found in all but 48. In 113 it was in the lungs; in 74 in the kidneys; in 60 in the spleen; in 32 in the brain; in 6 in the intestines, and also the 15 with embolism in the limbs, and the one case of embolism in the liver.

**Embolectomy in Treatment of Embolism of the Extremities.**—Key remarks that embolectomy is one of the most grateful fields for surgery when the diagnosis is made in time. He



reviews the history of embolectomy and the clinical picture of obstructing embolism. The sudden onset of pain, numbness and disturbance in the circulation, coexistence of some heart defect, or preceding infection, or operation which might predispose to thrombosis in the heart, and a history of a tendency to embolism—these points aid in the differential diagnosis. When the symptoms develop only gradually, differentiation is difficult. With arteritic thrombosis, the patient has generally presented prodromal symptoms for a long time, even for years, such as chilliness and numbness, rheumatic or neuralgic pains in the limb and cyanosis in the peripheral portions. In the 45 cases of embolectomy he has compiled, the operation was a success in 9 of the 12 cases with an interval of less than ten hours; in only 2 of the 5 with an interval of eleven to fifteen, and in only one of 3 and 4 cases with intervals of from sixteen to twenty or twenty to twenty-four hours. As thrombosis develops below the obstruction so rapidly, the outcome depends usually on the promptness with which the embolus is removed, under local anesthesia. Secondary thrombi should be removed at the same time. After removing the embolus, the clamp on the artery above should be loosened to allow the blood to sweep out any emboli from above. After suturing the vessel, if the circulation is not restored through the limb, search must be made for an embolus at some other point. As an aid in warding off further thrombosis, the sponges and the instruments and hands should be dipped in a 2 per cent. solution of sodium citrate. If the general condition or the heart action does not allow embolectomy, the embolus might be rubbed to pieces by massage in the cases seen early and adapted to this. He gives full details of his own 8 cases of embolectomy and of 11 others done by other Norwegian or Swedish surgeons. The outcome was successful in 10. In the total 45 cases, the operation followed within twenty-four hours in 43, and the outcome was favorable in 13.

**Arthroplasties of Elbow.**—Ankylosis after a streptococcus process in the right elbow incapacitated the woman of 23, a domestic servant, but almost complete functional use of the arm was restored by sawing and cutting a new joint surface on the humerus and carving the ulna and radius to correspond, and interposing a strip of fascia lata. The soft parts were sutured with silk to hold the new joint firm, the ends in close contact with each other. Active movements were begun in two days and the patient was kept under supervision as an outpatient after the second month for another month. Reexamination eight months later shows full active capacity for flexion, extension, etc., lifting a pail of water, hanging by both arms without support for the feet, etc. Only the last phase of extension is not quite normally strong. The report of the case is in English and is illustrated.

### Finska Läkaresällskapetets Handlingar, Helsingfors

November-December, 1921, 63, No. 11-12

\*Fluctuations in Prevalence of Chlorosis. O. Schauman.—p. 537.

\*Coagulation-Promoting Measures. H. Elving.—p. 551.

\*Subconjunctival Cataract Operation. V. Grönholm.—p. 578.

Fatigue Phenomena in Muscles. D. Rancken.—p. 586.

**Fluctuations in Prevalence of Chlorosis.**—Schauman quotes authorities in Sweden, Norway, England, Vienna and the United States who have commented on the rarity of chlorosis during the last twenty years. This experience confirms what has been observed in Finland. The high peak in the prevalence of chlorosis seemed to be between 1879 and 1903 in Sweden, and he compares this with the high peak of alcohol consumption in that country. Another possible factor that has been suggested is that electromagnetic currents may modify the endocrine glands in some way. The virulence of certain bacteria has been shown to be modified in the magnetic field. The misery from the World War was instrumental in increasing the prevalence of tuberculosis and rachitis, but not of chlorosis. Statistics in Sweden testify that chlorosis was very rare in that country before 1830. The high peak that followed then and again in 1891 confirms the wave-like endemic appearance of the disease.

**Means to Promote Coagulation of the Blood.**—After ascertaining that the coagulation varied very little on repeated examination of 10 healthy persons, Elving investigated the

action of roentgen exposures of the spleen, liver and heart, and of intravenous injection of various substances. His final verdict is in favor of calcium chlorid as the best hemostyptic, both experimental and clinical experience confirming the prompt action of 20 c.c. of a 15 per cent. solution injected by the vein. In one case, 10 c.c. of a 10 per cent. solution shortened the coagulation time by 91 per cent. Roentgen exposures of the spleen also had a moderate accelerating influence in all but one of 12 cases. This effect reached its height by the fifth hour and persisted through the eighth hour. The dose was one third of the skin erythema dose, the tube 24 cm. from the field. Ice bags and ethyl chlorid spray displayed no efficacy.

**Cataract Extraction.**—Grönholm describes a subconjunctival cataract operation which he has applied in forty cases with eminent success in all but one case in which there was prolapse of the iris. The others healed promptly and without grave infection under the doubly pedunculated conjunctival flap. A long summary in German accompanies the article.

### Hospitalstidende, Copenhagen

Dec. 28, 1921, 64, No. 52

\*Perforation of Gallbladder. O. Gjellerup.—p. 826.

**Perforation of Gallbladder with Profuse Hemorrhage.**—The woman of 72 had never noted any symptoms from the biliary apparatus until recently, when severe pain in the right side with other signs of peritonitis were explained by discovery of a gallstone, 15 cm. long and 3 or 4 cm. wide, loose among the intestines, with about a liter of blood, and a large tear in the gallbladder. Smooth recovery followed cholecystectomy. Gjellerup has found only two such cases on record, fatal in one.

### Hygiea, Stockholm

Dec. 16, 1921, 83, No. 23

\*Unspecific Immunity. H. Much (Hamburg).—p. 785.

Disturbances in Nerve Conduction. Y. Zotterman.—p. 806.

**Unspecific Immunity.**—Much defines all sickness as a disturbance in balance, saying that all treatment is an effort to restore the biologic balance. All treatment thus has a biologic aim, and hence may be called immune therapy. The measures employed may be a biologic isotherapy, the virus itself stimulating immunity, or it may be biologic homopathy, or biologic allopathy, as he explains. All these lines are logical, and with them we can induce a specific and also an unspecific immunity. Immunity is not restricted to the specific immune phenomena; everything strengthening or weakening cell function is an immunity process. With this conception, he says, fall the sham walls which have been hemming in our efforts.

### Ugeskrift for Læger, Copenhagen

Jan. 19, 1922, 84, No. 3

Diagnosis and Treatment of Appendicitis. J. Collin.—p. 65.

\*Roentgen Ray Treatment of Brain Tumors. S. Nordentoft.—p. 73.

Jan. 26, 1922, 84, No. 4

Arrest of Small Epidemic of Smallpox. Struckmann.—p. 95.

Bone Process on Heel After Fracture. Baastrup.—p. 102.

Strophanthin Content of Strophanthin Tincture. Johannessen.—p. 104.

**Roentgen-Ray Treatment of Brain Tumors.**—Nordentoft reviews the present condition of 18 patients with brain tumors treated by roentgenotherapy before 1919. He also adds 4 new cases to the list. No benefit was apparent in 7 in his first series, or it was transient, and in 2 others the disease proved to be disseminated sclerosis. The other 9 patients were apparently cured by the irradiations, with earning capacity restored. A few still have some visual disturbance and one had much later an intercurrent cerebral hemorrhage which has partially incapacitated him. But the cases reported as cured in 1919 have persisted cured during the four, five and six years since their treatment. Brain tumors seem to be especially susceptible to the roentgen rays, and when the tumor subsides under them, it displays no tendency to return. He summarizes the details of his cases; the location was apparently the cerebellopontile region, the parietal or frontal lobe or the cerebellum or hippocampal gyrus; the ages ranged from 17 to 51.



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## A REMEDY FOR PROFESSIONAL UNREST \*

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It is worth while to examine briefly some of the factors of the problem presented by the unsatisfactory relationship between the medical profession and the public and, if possible, find a true solution.

The concrete things that seem to underlie our troubles are (1) the various manifestations of what has come to be known as "state medicine," and (2) the extraordinary growth and popular endorsement of the healing cults. Two general social movements are discernible when one examines the problem; and the actions and reactions engendered by these movements have for the moment erected a specter, which too many of us have mistaken for an issue—the medical profession versus the people.

These two social movements are based on the most primitive biologic attributes. The people are engaged in the primordial task of seeking for the good. Since the first man felt hunger and, finding food, satisfied it; since the first man felt the sweat of labor, and, finding an easier way to obtain bread, grasped it, mankind has been at the task of seeking after good, and, finding good, seeking to make it better. And the way of mankind has from the beginning been the experimental way; for century on century men have cut and tried. That which men have rudely shaped to fit their needs, they have compared with the more cunning workmanship of their neighbors, and slowly, the better has supplanted the good. This is law; it was law for the first man, and it is law for the race. This we all know—but all forget.

### "STATE MEDICINE"

That portion of humanity which forms our environment is making some new experiments just now. The social organism has many an ancient hunger and thirst that it has never been able to appease with the incomplete ration it has had to feed on hitherto; it has suffered many a wound and bleeding sore which, through the ages, it has vainly sought to cure, and for which it has suffered many things of many physicians. We witness the ancient process of cut and try; sometimes we engage in it; sometimes we are amused by it; sometimes we feel it. Maternity bills, health insurance schemes, public health institutes, social hygiene centers, rural sanitation commissions, child welfare sta-

tions, societies for the prevention of this and that, these are the "state medicine" cut and trys that we feel.

This brings us to the other social movement, which, when it strikes the great current of the people's movement, causes the specter that some call an issue to uprear. It is the counter movement of the organized medical profession, and it is based on another primitive biologic attribute—fear.

We physicians are a conservative lot. No matter what our origin, we no sooner graduate and become established in something of a business than we become apostles of the true doctrine of things just as they are; or, if not, then of things somewhat better—for us. We become, in habit of mind, aristocrats, givers of the law to those without, holders of a vested interest, and, true to the type, afraid of any movement that threatens the status quo. True, we are the custodians and interpreters of a certain store of the accumulated knowledge of mankind; but the store belongs to mankind, it is the property of society. We may expect, and properly so, to be called on to speak with what measure of authority we possess when society demands our witness; when society decides to apply in the old cut and try fashion some of that knowledge for its own needs.

Our duty is to act out our part as members of the social body, contributing counsel and advice in the formulation of the protocols for social experiments, and supporting or opposing legislation designed to put them into effect in accordance with our judgment and conscience. But when, as an organized profession, as a group animated by class consciousness, we constitute ourselves into a political bloc and seek to stem the tide of a social stream, we do violence both to our intelligence and to our convictions. We do violence to our intelligence because, if we apply our hearts unto wisdom, we shall realize that we are ourselves only one of the experiments of mankind by which humanity seeks to supply a need; we are only one of the methods of cut and try, and we came into being not because in the cosmic order an inviolable estate was created in which we may of right dwell unmolested, but because mankind has thus far tolerated us as the best experiment hitherto achieved by the race. Society is now meditating on new experiments; we have been useful in the familiar ways, but we have failed to be of use, or of the greatest use, in manners and for purposes for which society deems new methods desirable. Our profession is an instrument, which is going to be modified in whatever fashion the social organism finds expedient, or cast away if some better instrument can be devised. We are clay in the potter's hands, and shall we undertake to say to our Maker, "Why madest thou me so?"

\* Presidential address, read before the Medical Society of the District of Columbia, Dec. 14, 1921.



We do violence to our convictions because we permit ourselves to be dominated by fear in the presence of a specter; we organize our fears into a delusion and call the specter an issue, and many summon us to sally forth and do battle with a phantom. Some name the phantom paternalism; some name it socialism; others, more frightened, give it the worst name they can think of: bolshevism; but they all think they see the same thing, whose true name is Something-that-will-affect-adversely-our-private-interests. Whatever it is that society has in mind to do will be done whether it affects our private interests or not; the social organism is on the move in obedience to primeval instinct, and the equally instinctive and self-protective reaction of our little minority can no more stay the tide than did King Canute. Our convictions should instruct us that, whatever readjustments are in the making, we are indispensable to humanity. Have we not in our possession all of truth and eternal value yet attained by man in the science that we represent, and will not society require it at our hands? There is no issue between the medical profession and the public; we are frightened by a specter. The issue is solely one of policy to be settled by citizens; the duty of physicians, as such, is to minister to the sick and respond to the needs of society, whose servants we are.

#### THE HEALING CULTS

What shall we say of the healing cults? They are plagues sent on us for our sins; and not on us only—they are plagues on society as well. Society is plagued with them because of ignorance, credulity, cupidity, prejudice and such like sins, but with those we are not at present concerned. The fact is, though, that society has in many of its units found the medical profession as we exemplify it wanting; the popularity of the cults represents the individual experiments of these units of society in their search for the good; if they had not felt the need, the experiment would not have been undertaken.

Our duty under the circumstances, it seems to me, is self-examination, with minds humbled in the presence of our failures. It does not suffice to comfort ourselves with the thought that we represent the best that has been attained in medicine, nor to take refuge in the thought of what society already owes our profession. It does not become us cynically and haughtily to watch unmoved the pitiful groping of our fellow men for good which they have not found at our hands. As good physicians and honest men we must examine ourselves and our methods; we must determine wherein we fail the public, and we must, as servants of society, find a way to help our fellow men, ignorant, wilful and superstitious as they often are, in ways that they will follow, and speak to them in language they can understand.

#### TWO DIVISIVE FAULTS

I said that the cults were plagues on us for our sins, but I did not enumerate the sins. There are two, it seems to me, that stand out as divisive faults, separating us from our fellow men and our full duty to them; they are pride and materialism.

Why do I speak of pride? Have we not a right to be proud of our calling, its history, its attainments and its contributions to mankind? Yes; but pride of that which lacks of perfection must be tempered with humility. Pride has taken hold on us in the name of science; we have been led up into a high mountain, and shown all the kingdoms of the earth, which should

be ours if we would serve only science. Our schools taught us the ritual of science; we were indoctrinated with the scientific method and informed with the scientific mind; we were taught to scorn the empiric and to doubt the empirical. When we had satisfied our teachers as to our training, we were dubbed Knights of Science and bade to go forth and conquer the kingdoms we had viewed from the high mountain. But, alas, pride deceived us; the weapons of science alone could not avail to conquer those fair kingdoms and subdue them. Citadels there were still impregnable to our arms; beleaguered people whose deliverance we could not compass by the devices of science. The realm still had strongholds impenetrable except with the weapons of art. What wonder that we attack reluctantly under the banner of art, whose leadership we have been taught to flout? What wonder that we fight but ill when we wield unaccustomed weapons newly tried on the field of combat? What wonder that captives in those strongholds cheer on those hardy knights with strange device who seize the weapons of art, and, unmindful of dangers they know not of, attack and attack and attack? And if, under the attack, the walls fall, one can understand the cheers of those going down in the ruins, cheering the champions who dared in their behalf.

The fields which we may invade only under the leadership of art are still many and wide. Our friends the homeopaths understand this; they have tempered their pride with humility, and enter the warfare equipped by both science and art. This, I believe, is the secret of their strength and their continued life.

Our friends the osteopaths seem to be learning that their art needs to be informed by science, and they show a disposition to set their house in order.

But the lesson we need to learn is the lesson of humility, which is the work meet for repentance for the sin of pride. Our science is not yet sufficient for the needs of the people; we should, therefore, cultivate anew, positively and aggressively, the study and application of empirical art, and we should encourage by our example and approval the development among us of those who, guided by scientific training and safeguarded by scientific traditions and associations, practice those elements of good which must inhere in the methods of the cults. Unless we are willing to do this, we must needs be silent, and continue to grow in symbiosis with whatever healing agencies society may choose to tolerate.

Materialism is the second sin in my indictment. Its origin and rise are well known; it is a product of the scientific era, and there may be significance in the fact that its label bears the words "Made in Germany." It came to be worn as the garb of scientific men; it was fashionable, and scientific men must no longer appear, in public at any rate, in any of the old garments of faith. Thus it has pervaded our profession, has taken hold on our teachers and leaders, and has had its unlovely effect on our professional creeds, our professional practices, and our personal lives. It is in its nature a divisive fault, separating us often from the sympathy and understanding of that host of the afflicted, sick with those diseases whose etiology lies in hopes deferred, in fears and doubtings, in shattered faiths, and in bleeding hearts. What has materialism to offer to these, either in diagnosis or in advice? Thrown back from us disappointed, they turn to those miserable improvisations which we know as Christian science, new thought, unity and the rest.



Belatedly and reluctantly we seek to expand the scope of our materialistic vision, and we recognize that human lives do consist of more than bodies and organs; that there is a spirit to be reckoned with, and we begin to formulate materialistic laws for the behavior of that spirit; it is a thing to be caught and labeled in dreams, to be sublimated like a chemical, or analyzed like a mineral; and if it is sick, poisoned by its own selfishness or wounded by the selfishness of others, shut up in the dungeons of fear or despair, it will be directed to lift itself out into "the glorious liberty of the Children of God" by its own bootstraps according to the materialistic formula of a medical analyzer and labeler.

Materialism has affected our professional practices and personal lives in manners that I shall not dwell on: that it is not pleasant to dwell on. They are manners that alienate us from the people, who, after all, have a pathetic faith in us; it survives their experiences of us, and they continue their faith in hope. How do we justify that faith and hope, when we examine ourselves by this composite picture of what they wish in the doctor? It is a pen picture by Henri Frederic Amiel, written in *Journal intime*, 1873:

Why do doctors so often make mistakes? Because they are not sufficiently individual in their diagnoses or their treatment. They class a sick man under some given department of their nosology, whereas every invalid is really a special case, a unique example. How is it possible that so coarse a method of sifting should produce judicious therapeutics? . . .

The principal grievance which I have against the doctors is that they neglect the real problem, which is to seize the unity of the individual who claims their care. Their methods of investigation are far too elementary; a doctor who does not read you to the bottom is ignorant of essentials. To me the ideal doctor would be a man endowed with profound knowledge of life and of the soul, intuitively divining any suffering or disorder of whatever kind, and restoring peace by his mere presence. Such a doctor is possible, but the greater number of them lack the higher and inner life, they know nothing of the transcendent laboratories of nature; they seem to me superficial, profane, strangers to divine things, destitute of intuition and sympathy. The model doctor should be at once a genius, a saint, a man of God.

#### THE POLICY OF SERVICE

What, then, is the policy I would recommend that this society adopt in the presence of the problems we have been considering? It is the policy of service. Recognizing the medical profession as the creature of society, our duty is to seek the good of the social whole, knowing that our ultimate good is wrapped up with it. The seeking of excellence in methods, morals and manners is our corporate task, in order that mankind may find blessing at our hands; for the seeking of excellence is the great task of humanity itself.

Our preoccupation should be the correction of those defects in the social organization and in our own resources which provoke in society the maladies now discernible. We do ill to ourselves and to society if we yield to fear and spend our energies in vain strife to maintain institutions and practices which society is determined to modify. We may need to stand together for justice in the days that are to come; we may need to witness strongly for truth; but we shall not have to fight for existence so long as we follow the path of Service; "for whoso thinketh to save his life shall lose it; but whoso loseth his life for My sake, shall find it."

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## BENIGN LESIONS OF FEMALE BREAST FOR WHICH OPERATION IS NOT INDICATED\*

JOSEPH COLT BLOODGOOD, M.D.

BALTIMORE

It seems almost incredible, yet it is true, that in the last 100 women whom I have seen because of some complaint referred to one or both breasts, in more than one half, after a history and careful examination, operation has been advised against. The cases to date total 267; the majority were observed during the last five years. They have been designated B. B. N. O. (breast; benign; no operation), and will be considered in eleven groups: (1) pain, 64 cases; (2) painful scar, 22 cases; (3) discharge from the nipple, 36 cases; (4) retraction of the nipple, 3 cases; (5) lesions of the nipple suggesting Paget's disease, 3 cases; (6) history of disappearing tumor, 24 cases; (7) definite and indefinite, single and multiple tumors in women under the age of 25, 23 cases; (8) definite and indefinite, single and multiple tumors in women over 25, 64 cases; (9) tumors in the axilla—aberrant breast tissue, lipoma, lymph glands, tumors of the sebaceous and sweat glands, 17 cases; (10) unilateral hypertrophy at puberty, 12 cases; (11) diffuse virginal hypertrophy, 3 cases.

#### CLINICAL PICTURE IN DIFFERENT GROUPS

1. *Pain*.—Fifty patients presented themselves complaining of pain only, and the result of the examination was negative.

Fourteen patients complained of pain, and a tumor had been felt by the patient or the examining physician or by both, but on careful examination I could not make out any tumor.

The study of these sixty-four cases of pain in the breast, combined with that of patients who have been operated on for benign and malignant tumors of the breast, teaches us that pain is not an indication of a pathologic lesion in the breast indicating operation. The only compensation for pain in the breast is that it influences the patient to seek an examination, and in some instances a tumor may be found earlier, or, if there is no tumor, the patient may receive instructions which will be helpful in the earlier recognition of a tumor, should one develop.

All the different types of pain in the breast have been investigated—intermittent, continuous; localized, diffuse, radiating; unilateral, bilateral; its relation to infancy, puberty, lactation, mastitis, menstruation and menopause—with the result already stated: pain, of itself, is not of diagnostic value.

The best treatment for pain in the breast is to assure the patient, after a careful examination which has excluded the presence of a tumor, that it is not a sign of cancer, and that she runs no more risk of cancer than any other woman of her age who has no pain.

2. *Painful Scar*.—These twenty-two cases comprise only those patients whose operations were performed by other surgeons. When compared with painful scars after our own operation, it can be emphatically stated that pain in the scar is not, of itself, an indication of a recurrence, nor that there is anything in the area of the healed wound which requires operative treatment. The treatment should be largely psychic. Painful scars

\* Read before the Southern Surgical Association, Pinehurst, N. C., Dec. 13, 1921.



are more common after the excision of the breast than after the excision of a tumor or the complete operation for cancer.

3. *Discharge From the Nipple.*—In addition to the thirty-six cases in which operation has not been performed, we have studied the significance of discharge from the nipple, when present, in all the benign and malignant tumors of the breast operated on and in which the pathology of the lesion was established.

From this study one may state that discharge from the nipple, like pain, is not an indication of a lesion of the breast for which operation is indicated. In malignant tumors of the breasts, such a discharge previous to the palpation of the tumor has been recorded in about 1 per cent. of the cases. In all benign tumors the percentage is a little larger. In the benign papillomatous cysts this discharge has been the symptom of onset in more than 50 per cent. of the cases.

The probabilities are that a discharge from the nipple of a character other than milk is due to a small papilloma in a duct (discharge bloody or serous) or dilatation of the ducts beneath the nipple when the discharge is thicker and brownish or yellowish. A discharge of milk indicates a galactocoele or persisting lactation hypertrophy. There is no evidence that these lesions are precancerous, and the prevailing view that a woman with a discharge from the nipple should be protected from cancer by the removal of the breast is based on fear and not on fact.

4. *Retraction of the Nipple.*—When retraction of the nipple is of recent origin and not associated with a history of lactation, it should be looked on as a sign of cancer and the complete operation performed. Retraction of the nipple as a symptom of onset of cancer of the breast is rare. It may be associated with benign tumors, chronic cystic mastitis, lactation mastitis, and the rare type of mastitis not associated with lactation. But it is safer to look on recent retraction of the nipple in which there is no demonstrable benign etiologic factor as a sign of cancer.

In the three cases discussed here, the unilateral retraction was of long duration and coincident with lactation.

Unilateral or bilateral congenitally depressed nipples can be distinguished from retraction of the nipple only when the patient is certain that the condition has been present for years.

5. *Lesions of the Nipple Suggesting Paget's Disease.*—Any warty condition of the nipple associated with scaling, discharge or ulceration; any irritation of the nipple with redness or weeping; anything suggesting eczema or ulceration of the nipple, which does not heal within a few weeks after simple measures of cleanliness and protection, should be looked on as Paget's disease and be treated by complete excision of the breast. If, on palpation, there is any induration beneath the affected nipple, any palpable mass in the breast, the complete operation for cancer should be performed without delay.

The three cases mentioned here healed so rapidly under simple treatment that operation was not performed.

6. *History of Disappearing Tumor.*—In my opinion, this is a definite clinical entity, and the tumor is associated either with a chronic lactation mastitis, a galactocoele or with chronic cystic mastitis. When we study cancer of the breast, in less than 1 per cent. is there a history of disappearing tumor before the development of the permanent tumor—cancer. This would corre-

spond somewhat to its rare occurrence in the lesions above described.

When we study the records of lactation mastitis, galactocoele and chronic cystic mastitis, we find the statement of a disappearing tumor in a significantly large proportion of the cases—up to almost 20 per cent. in chronic cystic mastitis; and as many of the older histories are incomplete as to these data, there is every reason to conclude that the disappearing tumor is more common. When we follow the patients operated on for chronic cystic mastitis who have one or both breasts remaining, the later development of the disappearing tumor is quite frequent. The relative frequency of the history of a disappearing tumor in patients operated on for an encapsulated adenoma is about in the proportion of the probable occurrence of chronic cystic mastitis in women of the same age.

There is also some evidence that the benign adenoma observed in young girls may, if left alone, ultimately disappear.

The nomenclature for definite and indefinite tumors is as follows: (a) single definite tumor in one breast; (b) single definite tumor in each breast; (c) multiple definite tumors in one breast; (d) multiple definite tumors in both breasts; a-e, b-e, c-e, d-e indicate that the tumors are indefinite.

7. *Definite and Indefinite, Single and Multiple Tumors in Women Under 25 Years of Age.*—In this group there were twenty-three cases.

(a) Single, definite, freely movable tumor in one breast, all in girls under 20 years of age, twelve cases. Seven of these have been followed from three to nineteen years, and the tumors have disappeared. This suggests that adenoma in the breast of a young girl may ultimately disappear.

(a-e) Single, indefinite areas, four cases. All were followed for years, and the areas have disappeared.

(c) Multiple definite tumors in one breast, two cases. In both, the tumors disappeared.

(c-e) Multiple indefinite tumors in one breast. No cases of this type have been observed.

(d) Multiple definite tumors in both breasts, one case. I examined this patient eighteen years ago and concluded that the tumors were adenomas. They have since disappeared.

(d-e) Multiple indefinite tumors in both breasts, four cases. Subsequent examinations revealed that the areas have disappeared.

This demonstrates that the possibility of definite and indefinite, single and multiple tumors in one or both breasts in women from the age of puberty to 25 may occur, but certain types are rare.

In view of the fact that I cannot find an authentic case of cancer in the breast of a woman under 25 years of age, it seems just to conclude that there is no danger in observing a definite single tumor, or multiple definite tumors in one or both breasts. To be on the safe side, I have reduced the age limit to 20 years.

The indication for operation on a single tumor or multiple definite tumors in one or both breasts in a girl 20 years or less of age is: size, recent rapid growth, extreme pain and prospect of early marriage.

8. *Definite and Indefinite, Single and Multiple Tumors in One or Both Breasts in Women Over 25 Years of Age.*—In this group there were sixty-four cases.

(a) A single, definite tumor in one breast; no operation; seven cases. The operation was postponed in



spite of the fact that a single, definite, palpable tumor was present in a woman, aged 25; in three cases, because the tumor was felt in a lactating breast and was thought to be a galactocele; in one, because there was a history of the removal of a simple cyst, and in one case the small palpable tumor beneath the nipple was wormlike and suggested a dilated duct.<sup>1</sup>

The tumors in these five cases all disappeared, and there has been no further trouble.

The remaining two patients refused operation. In one the tumor had been diagnosed in 1892 as cancer. It disappeared in a few months, and there has been no recurrence in twenty years. The other was diagnosed a subepidermal dermoid. This patient has been lost track of.

This demonstrates that during a period of about thirty years, in almost 3,000 cases of breast lesions, I have records of but five cases in which operation has been postponed when the examination revealed a single definite tumor in one breast in a woman at the cancer age, and I have given my reason which justified delay.

(a-e) Single indefinite tumor in one breast; no operation; twenty-one cases. Here operation was postponed, because the first and subsequent examinations failed to reveal on palpation a local area sufficiently definite to justify exploration. In six of these cases there was the history of a trauma; two were associated with lactation; one with an old mastitis. In seven cases, pain brought the patient for examination; in five, the patient had felt a tumor. All of these patients have been followed, and the indefinite lesion has disappeared.

(b) A single definite tumor in each breast; no cases; all have been subjected to operation.

(b-e) A single indefinite tumor in each breast; no observations.

(c) Multiple definite tumors in one breast; no observations; all subjected to operation.

(c-e) Multiple indefinite tumors in one breast; no operation; one case. In this instance the palpable indefinite area followed contusion, disappeared under observation in a few months, and there has been no recurrence after three and one-half years.

(d) Multiple definite tumors in both breasts; no operation; seven cases. Operation was postponed in these cases, because in three the multiple definite tumors in both breasts were associated with lactation and were looked on as benign galactoceles; in two cases because, on palpation, one could feel wormlike tumors beneath both nipples, and the condition was diagnosed dilatation of the ducts, which is not a precancerous lesion.<sup>1</sup>

In two cases the palpable bilateral lesion was a diffuse chronic cystic mastitis of the BB-13-8 type.<sup>1</sup>

In all of these seven cases, either palpable lesions have disappeared, or the patients are still recent and under observation.

(d-e) Multiple indefinite tumors in both breasts; no operation; fifty cases. Operation was postponed in this group because, on careful and repeated palpation, no area of sufficiently definite area could be made out to justify exploration.

Among these fifty cases of multiple indefinite tumors in both breasts, in seven there was a history of the removal, some time previously, of a benign tumor. In

six, this tumor was a blue-domed cyst; in one case, an encapsulated adenoma.

The age of these patients has varied from 24 to 54 years. It is becoming a very common condition. In the first decade up to 1900 I have a record of three cases; in the third decade from 1910 to 1919, twenty-one cases. If the present rate keeps up in the fourth decade, since 1920, there will be sixty cases.

In a previous paper<sup>2</sup> I have discussed the palpation of single and multiple, definite and indefinite tumors in one or both breasts, associated with chronic cystic mastitis.

When we go over the histories of benign and malignant tumors and study closely the clinical records, we find that in malignant tumors there is recorded a single definite tumor in one breast; rarely is there a record of multiple tumors, either definite or indefinite, while the opposite is true in benign tumors, especially in chronic cystic mastitis. Multiplicity, therefore, of multiple tumors is suggestive of benignity.

Therefore, there should always be a careful examination of both breasts.

*The differential diagnosis of breast lesions depends more on palpation than on any other factor in the history and examination.*

To distinguish between a single or multiple indefinite tumor and a single or multiple definite tumor requires an acute sense of touch. The palpating fingers of the examiner should be so trained that they become instruments of precision.

Publicity has brought women who think they have lumps in the breasts so frequently for examination that never before has the medical profession been called on so often to make a differential diagnosis between a lump of the breast which should be explored and one that is part of a lumpy breast in which operation is not indicated.

Older methods of examination were inadequate. In the first ten years of my experience to 1900, when a woman came to the clinic because she had felt a lump in her breast, with hardly an exception the lump was distinct on palpation, often visible, and in almost 90 per cent. of the cases distinctly malignant. In the next ten years a few patients came under observation in whom the diagnosis was really difficult. The number of such cases has been rapidly increasing. Today, in more than 50 per cent. of my patients the diagnosis rests on palpation, and the first question to be settled is, Does the breast contain a distinct lump, or is the lump an indefinite one, and one of many?

It should be the invariable rule for the examiner to know nothing about the history of the patient. The history can be taken by somebody else and typewritten. The patient must be told not to say anything to the examiner of what she is complaining, or what she or any one else may have felt.

The patient should be stripped to the waist and recline on a couch in the office, or on a bed in the hospital, with the head in a comfortable position on a pillow and the arms raised above the head. Before this method was introduced, we frequently examined the patient sitting on a chair with arms at the sides.

In this reclining position with arms elevated, one can inspect better the axillary portion of the breast and frequently see tumors in the axilla (Group 9). Also, in this position one can note at once whether

1. Bloodgood, J. C.: The Pathology of Chronic Cystic Mastitis of the Female Breast, with Special Consideration of the Blue-Domed Cyst, Arch. Surg. 3: 500 (Nov.) 1921.

2. Bloodgood, J. C.: The Pathology of Chronic Cystic Mastitis of the Female Breast, with Special Consideration of the Blue-Domed Cyst, Arch. Surg. 3: 445-542 (Nov.) 1921.



there is any bulging due to a tumor in either breast. I have never observed a small benign tumor to bulge, and up to the present time all such tumors visible on inspection have been malignant, and this bulging has been the only sign differentiating them from the benign.

One should carefully inspect the nipple, looking for warty growths, scaly areas, weeping or any of the signs of early Paget's disease (Group 5). Changes in the areola, its size or pigmentation have no important significance, except in pregnancy. That one breast is larger than the other and yet retains its symmetry is a common occurrence and of no importance. One breast may be so much larger than the other that it may be called unilateral hypertrophy (Group 10). If not due to this, it is the seat of a large tumor. It is important to note that discharge from the nipple may produce an irritation and be confused with early Paget's disease. The secretion irritates the epidermis and gives rise to scaling and scabbing.

For many years we have made comparative measurements of the radii of the breast and of points between the top of the sternum and clavicle to the nipple, but I have not a record of a single case in which such measurements could be depended on alone for diagnosis, nor have I found them particularly helpful. Inspection, of course, must look for congenital retraction of both nipples, retraction of the nipple, dimpling of the skin, and any changes in color of the skin over both breasts.

It is important to repeat here that it is essential that the examiner receive no suggestion as to which breast the patient thinks is giving trouble, or as to what has been felt by the patient or any other previous examiner.

If the examiner feels a possible lump in the left breast and the previous examiner has felt it in the right breast, this indicates that neither lump is a real tumor and that it is only part of a lumpy breast. It is also important to remember that the first palpation is very likely to increase the consistency of the breast tissue due to congestion. This congestion remains only a few minutes, so that when one feels an indefinite lump in the outer and upper quadrant and then later feels nothing, the correct conclusion is not difficult. These lumps due to congestion are more likely to occur if the examination is made during or just before the menstrual period, and especially in younger and unmarried women.

My method is to palpate the two breasts at the same time, the right breast with the left hand, the left with the right hand, palpating corresponding areas, never touching the nipple until palpation is completed. This allows one to get at the relative consistency of the same areas in different breasts. Then one should palpate each breast with both hands feeling especially for the edge of the breast. Then one should place one hand on the different parts of the breast and move the fingers as when playing the piano, palpating the breast between the fingers and the chest wall. This is the most important procedure and should come last, because by this time areas of congestion will have disappeared. Having found a distinct tumor, one should ask the patient where she has felt the tumor. In all of my observations in which there is a distinct tumor, the patient as well as all previous examiners have also felt the tumor in the same area. When there is no distinct tumor, either the patient has sought advice for pain only, or for discharge from the nipple, or the

area which the patient and previous examiners have felt as a tumor is one that you have not picked out, or is a different portion of the same, or in the other breast.

In a few instances I have been unable to feel any tumor, even an indefinite one, but the patient has pointed out to me the area in which she has felt the tumor, when to my surprise I also felt it distinctly. Such tumors have always been smaller than a 10-cent piece, freely movable, and, when removed, have always proved to be benign.

When no distinct tumor can be felt, or when there is one indefinite tumor or more than one in one or both breasts, a second careful examination should be insisted on a few days or a week later, and in some cases repeated examinations. But up to the present in only one instance in which the first examination was negative for a definite tumor have I at the subsequent examination made out a definite tumor. In this case the interval was three weeks, the tumor the size of a 10-cent piece, buried in fat in a large breast; and, when explored, it proved to be malignant. In this case the glands were not involved, and the patient is well more than five years later.

When the breasts are large and the subcutaneous fat thick, palpation is much more difficult.

The responsibility for this careful examination by inspection and palpation is by no means a small one. For this reason it should never be superficial, and should be repeated as often as is necessary. On the one hand, one does not wish to make the mistake of overlooking a definite tumor of the breast, or, on the other hand, that of performing an unnecessary operation.

9. *Tumors in the Axilla; Aberrant Breast Tissue; Lipoma; Lymph Glands; Tumors of Sebaceous and Sweat Glands.*—I have notes on seventeen cases. Fourteen were unilateral, three bilateral; three were associated with lactation, and one with pregnancy. It has been observed from puberty until after menopause. Sometimes the patients had pain which called their attention to the swelling, but more often they simply observed a fulness in the axilla. On inspection, with the arms elevated, one sees a bulging at the periphery of the upper and outer quadrant of the breast in the case of the axilla below the muscle. On palpation, it feels like breast tissue. In these seventeen cases nothing was done, and no lesion has developed.

In one instance, in a girl after puberty, the mass was large enough to justify its removal. The microscopic section showed normal breast. In a few instances we have observed both carcinoma and benign tumors in this axillary portion of the breast, but in not a single instance was there a record of a previous swelling suggesting hypertrophy of this breast.

The other lesions of the axilla are not of sufficient number or importance to justify a discussion here.

10. *Unilateral Hypertrophy at Puberty.*—I have previously discussed this.<sup>3</sup> At that time (1917) I had observed six cases. This lesion is not necessarily pathologic. Before, during or shortly after the first menstrual period, one breast becomes larger than the other. If palpation reveals no tumor, operation is not indicated. In time the other breast begins to develop, and symmetry is reestablished.

3. Bloodgood, J. C.: Lesions of the Female Breast, Section 23, Vol. I, p. 559, in Binné: Treatise on Regional Surgery, Philadelphia, P. Blakiston's Son & Co., 1917.



11. *Diffuse Virginal Hypertrophy*.—This was previously discussed.<sup>3</sup> Since then I have observed three additional cases, which, however, have not reached the size justifying operation. In thirty years' experience I have seen cancer once in which the patient had diffuse virginal hypertrophy, and in another instance there was an encapsulated fibro-adenoma. The clinical picture is distinct, its etiology is unknown, and we do not know of any method of treatment which will prevent its occurrence or check its growth.

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## THE FUNCTION OF THE COLOSTRUM\*

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Recent studies on the chemistry of milk proteins and on their behavior in immunologic reactions<sup>1</sup> have incidentally brought into the foreground certain hitherto insufficiently appreciated facts concerning the colostrum, which seem to have much practical significance. The production by the mammary glands for a few hours after parturition of a secretion, colostrum, which is quite different in composition from the true milk that is thereafter their chief secretion, seems to be a universal occurrence in all mammals, and hence cannot well be a fortuitous circumstance without significance; and yet the textbooks on obstetrics and pediatrics do not indicate that any considerable importance is generally attributed to this secretion.

Analysis of bovine colostrum by Crowther and Raistrick<sup>2</sup> disclosed that the colostrum from early milkings contains on an average as much as four times more protein than the milk of the same cow, this increase being due to the presence of a great quantity of globulin, added to about the usual quantity of milk albumin and casein. Within forty-eight hours after lactation, the globulin content falls to about one-tenth the quantity that was present in the first colostrum. These authors found that from the chemical standpoint casein, lactoglobulin and lactalbumin are sharply differentiated and distinct proteins, and that they have the same composition whether prepared from colostrum or from milk. The lactoglobulin resembles in chemical composition the globulin of ox blood serum, but lactalbumin is quite distinct chemically from serum albumin, and casein is entirely different from any known blood protein. Applying the racemization method of Dakin to the study of the character of milk proteins, Woodman<sup>3</sup> found that even in the fine details of structure of protein molecules which this method brings out, the identity of the globulins from cow's milk, colostrum and serum was demonstrated; also that the albumin of colostrum and milk are the same, but distinctly different from the serum albumin.

The immunologic studies of Wells and Osborne, corroborating and extending the results of earlier workers in this field, established that the globulin of

milk behaves in its biologic reactions exactly the same as serum globulin, but that the other three known proteins of milk (casein, lactalbumin and alcohol-soluble protein) have no biologic counterparts in the serum.

These mutually confirmatory observations, together with many similar ones made previously, all establish that colostrum is a fluid that is characterized by consisting of an extremely rich solution of globulin (about 8 per cent.) added to the usual proportions of casein and albumin of milk, and that this globulin is identical with serum globulin, being the only protein of milk that is identical with any of the blood proteins. What is the purpose of this great secretion of globulin into the milk for a few hours after the young are born? It evidently is a true secretion, and not any mere leakage of proteins from the vessels, since the serum albumin and fibrinogen do not appear in the colostrum, and the globulin content of colostrum may be much higher than that of the blood. Undoubtedly it is related to the fact that the serum globulin fraction contains or carries the antibodies of the blood,<sup>4</sup> and that numerous investigations on the defensive mechanism of new-born animals have shown that the suckling animal secures important accessions to its antibody defense during the first days of life. It is generally recognized that young infants possess a greater or less degree of immunity to various infections. Often this early immunity is but transitory, which indicates that it is a passive immunity, and therefore to be attributed to antibodies obtained from the mother, whether through the placenta or through the colostrum.

The literature on this subject to 1912 has been carefully reviewed by Famulener,<sup>5</sup> who found it to show that when the mother exhibits a high degree of immunity at the time of birth of young there is some passive transfer of immunity, either through the placenta before birth or by means of the milk immediately after birth. Famulener immunized goats to sheep erythrocytes during gestation, and found that the blood of the newly born kids taken before they had suckled showed no appreciable amount of hemolysin, so that evidently little placental transfer of this antibody had taken place. The colostrum of the immunized mothers was found rich in hemolysins, often much richer than the serum of the same animal, and kids getting the colostrum quickly acquired a high antibody content in the blood. The milk soon lost its hemolysin content after the colostrum stage, and lactating goats immunized after gestation did not secrete antibodies in their milk in quantities comparable to that found in the colostrum, and often the milk contained no demonstrable antibodies. Older sucklings did not absorb antibodies from the milk to such an extent that they could be demonstrated in the blood. It is to be recalled that early investigators found that the newly born mammal is able to absorb proteins from the alimentary canal in an unchanged condition to a much greater extent than later, when the digestive processes have become more developed.

If one compares the curve of antibody titer in the colostrum and milk observed by Famulener, it will be seen to correspond perfectly with the curve for globulin content established for colostrum and milk by Crowther and Raistrick; that is, the early colostrum may contain much more antibody and globulin than the mother's serum, and both fall in from twenty-four to forty-

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1. These are fully reviewed by Wells, H. G., and Osborne, T. B.: *Anaphylaxis Reactions with Proteins from Milk*, J. Infect. Dis. **29**: 200 (Aug.) 1921.

2. Crowther, Charles, and Raistrick, Harold: *A Comparative Study of the Proteins of the Colostrum and Milk of the Cow and Their Relations to Serum Proteins*, Biochem. J. **10**: 438, 1916.

3. Woodman, H. E.: *A Comparative Investigation of the Corresponding Proteins of Cow and Ox Serum, Cow's Colostrum and Cow's Milk by the Method of Protein Racemization*, Biochem. J. **15**: 187, 1921.

4. It has not yet been determined whether the antibodies actually are globulins or not.

5. Famulener, L. W.: *The Transmission of Immunity from Mother to Offspring*, J. Infect. Dis. **10**: 332, 1912.



eight hours to a very low figure, to continue at a low, often negligible level in the milk thereafter. Famulener expressed clearly the idea that the colostrum is characterized by containing large amounts of antibodies, probably associated with its high globulin content, and that these are absorbed unchanged from the alimentary canal into the blood of the new-born suckling animal, but the practical importance of his contention seems to have been generally overlooked. More recent developments in our knowledge of the chemistry of colostrum have served to support the correctness of his deductions, and such experimental work as has been done on the immunology of the new-born has corroborated his experimental results. Thus, Reymann<sup>6</sup> found that, at least in the case of agglutinins in goats, the young were usually born without agglutinin but acquired a considerable amount during the first days of life from the mother's milk. He found also that the colostrum is especially rich in these immune bodies, commonly being richer in agglutinins than even the serum of the same animal, just as the colostrum may be richer in globulin than the blood of the same animal. The same thing seems to be true of antibodies other than agglutinins. The amount of antibodies in the milk falls rapidly during the first two or three days of lactation, and usually the later milk does not contain quantities large enough to be demonstrated; in other words, the antibody content of the lacteal fluid parallels the globulin content. Also, Howell and Eby<sup>7</sup> found that the antibodies of the mother's blood diminish after parturition, presumably because they are being poured out into the colostrum.

Little and Orcutt<sup>8</sup> found that when the blood of cows contains specific agglutinins for *B. abortus*, through natural infection, these agglutinins are also present in the colostrum, and often the concentration is higher in the colostrum (three of four cases), but the blood of the calves when born contains no agglutinins; only after the calves have suckled the colostrum does their blood contain the agglutinins, and then the titer may rise to a higher level than that of the mother's blood. When the colostrum was withheld and milk of a low or negative agglutinin titer substituted, agglutinins failed to appear or to accumulate in the blood of the calf. Agglutinins begin to appear about an hour after the calf has ingested colostrum, and may reach a maximum within five hours after feeding. This work is of particular significance since it deals with immune bodies the results of natural infection, and, with the previously quoted work, seems to establish definitely that such passive immunity as very young animals exhibit does not come ordinarily, if at all, by transfer through the placenta, but by alimentary absorption from the colostrum.

The various facts cited above all lead to the conclusion reached by Famulener on the basis of a study of the attainment of the immune bodies by the new-born mammal, and also later by Wells and Osborne from a consideration of the chemistry of the milk proteins, that the formation of colostrum is for the purpose of presenting to the new-born mammal a concentrated solution of serum globulin which carries antibodies from the maternal blood, during the brief time that

these protective proteins can be absorbed unaltered from the alimentary canal in an active condition.

An important chemical contribution to this subject, which harmonizes perfectly with the foregoing hypothesis, has been made by Howe,<sup>9</sup> who found that the blood of a new-born calf does not contain euglobulin, this being the globulin fraction of serum with which the antibodies are found associated. If the calf suckles a cow secreting colostrum, the blood serum soon contains relatively large amounts of euglobulin; but if the calf suckles a cow that has been lactating for some time, and yielding milk which is known to contain very little globulin, the quantity of euglobulin in the calf's blood remains negligible for several hours, and it increases much more slowly than in a calf that has received colostrum from the beginning.

The practical importance of the foregoing observations on the lower mammals has led us to make observations on the human subject, and we have repeated Howe's investigations on the blood of adult persons and on young infants, using the method which he devised for the quantitative estimation of the protein fractions in small quantities of blood. The results are given in the accompanying table, the figures being grams of nitrogen per hundred cubic centimeters of serum.<sup>10</sup>

PROTEIN CONTENT OF HUMAN BLOOD

	Total Nitrogen	Euglobulin Nitrogen	Pseudo-globulin I Nitrogen	Pseudo-globulin II Nitrogen	Total Globulin	Albumin
Adult						
1.....	1.379	0.254	0.363	0.070	0.687	0.540
2.....	1.322	0.223	0.232	0.193	0.648	0.492
3.....	1.340	0.236	0.193	0.122	0.551	0.532
4.....	1.167	0.247	0.102	0.100	0.449	0.421
5.....	1.423	0.280	0.158	0.109	0.547	0.408
New-born infant, umbilical cord blood						
1.....	0.689	0.006	0.122	0.079	0.207	0.445
2.....	0.972	0.000	0.390	0.013	0.403	0.528
3.....	0.788	0.009	0.170	0.090	0.269	0.413
4.....	1.060	0.000	0.324	0.105	0.429	0.587
5.....	0.854	0.000	—	—	0.383	—
6.....	1.064	0.005	—	—	0.405	—
Infants, with colostrum						
3 weeks.....	0.983	0.206	0.222	0.087	0.515	
13 days.....	0.887	0.090	—	—	0.1407	
11 days.....	0.887	0.089	—	—	—	
Infant, no colostrum						
3 weeks.....	0.885	0.082	0.206	0.098	0.386	

Examination of this table discloses that the new-born human infant is virtually devoid of euglobulin in its blood serum, although it has quite as much serum albumin and about the same quantity of pseudoglobulin as the adult. This is in striking contrast with the practically constant presence of about 0.225 to 0.250 gm. of euglobulin nitrogen per hundred cubic centimeters in the blood serum of adults. Furthermore, we see in the serum of young infants a gradual rise in the euglobulin content, more rapid in infants receiving colostrum as far as can be ascertained from the few figures available, the number being limited by the difficulty of securing suitable material. Therefore, we have found in human infants exactly what Howe found in calves, namely, that they are born with no euglobulin in their blood, and that they acquire it, at least in large part, from the colostrum.

9. Howe, P. E.: An Effect of the Ingestion of Colostrum upon the Composition of the Blood of New-Born Calves, *J. Biol. Chem.* **49**: 115 (Nov.) 1921.

10. The blood of the new-born infant was obtained from the umbilical vein. When free hemoglobin was present in the serum it was found that the results for euglobulin were too high, and such specimens were discarded. The blood of the infants was obtained from the superior longitudinal sinus. We are indebted to Dr. E. L. Cornell of the Chicago Lying-in Hospital, and Dr. W. B. Moody of the Cook County Hospital for our material.

6. Reymann, G. C.: On the Transfer of the So-Called Normal Antibodies from Mother to Offspring, *J. Immunol.* **5**: 227, 1920.

7. Howell, Katherine M., and Eby, Harriet: The Transmission of Specific Immune Bodies from the Mother to the Young, *J. Infect. Dis.* **27**: 550 (Dec.) 1920.

8. Little, R. B., and Orcutt, Marion L.: The Transmission of Agglutinins of *B. Abortus* from Cow to Calf in the Colostrum, *J. Exper. Med.* **35**: 161, 1922.



Why the other blood proteins are present in the serum of the new-born animal in about the same proportions as in the adult, while the euglobulin alone has to be obtained after birth, we cannot explain. The fact indicates at least that the euglobulin is in some way essentially different from the other blood proteins. Another respect in which euglobulin is unique is its association with the immune bodies of the blood. These two peculiarities, added to the fact that euglobulin is the predominant protein of colostrum, being the only blood protein secreted by the mammary gland into the milk, seem to establish a new significance to this protein, or this fraction of the serum proteins.

These findings all add force to the conclusions expressed by Famulener in these words:

All observers are agreed in the conclusion that the newly born animal (or infant) absorbs from the digestive tract unaltered antibodies most readily when given immediately after birth. The most effective means of supplying the antibodies to the young is through the mother's colostrum-milk (homologous); probably next in importance is the homologous serum, and finally the antibody milk or serum from some other species. It follows from our observations that of all factors the colostrum plays the most important rôle in transmitting antibodies from the actively immunized mother to the young. Even under normal conditions, it is reasonable to suppose that protective substances are concentrated in the colostrum from the mother's body fluids and may be in part absorbed by the infant after the first feedings. Consequently *it seems of highest importance that the newly born child should, during the first days of life, receive the colostrum-milk* [italics ours] unless it is contraindicated for some special reason. Perhaps the natural resistance which many infants show against many infectious diseases may be partially explained on the basis that the child is passively immunized by antistances excreted through the immune mother's colostrum and milk, which are absorbed by nurslings during the early days of life. Such a view gains strength from the observations of Moro, who found that the blood serum from breast-fed infants showed greater bactericidal and hemolytic powers than that from infants who were artificially fed upon cow's milk.

The possibility of adding to the immune-body supply of the new-born infant by feeding serum or globulin concentrates rich in useful antibodies, or colostrum from cows or goats, suggests itself, and is now the subject of our investigation. Even if this is possible it is very probable that it is not desirable, since, if the globulin which bears the immune antibodies is absorbed by the infant, there will presumably also be a sensitization to these foreign proteins which would certainly not be desirable, especially since any immunity thus acquired would be passive and therefore transient, while the sensitization would be active and permanent. The experiments of Wells<sup>11</sup> have shown that young animals, even after the first days of life, may be made hypersensitive to proteins given in their food, so that they give anaphylactic reactions when these proteins are injected into them. The temporary increase of passive immunity against infections to which the infant might never be exposed would probably not be worth the price of a possible horse asthma or food asthma, or a hypersensitivity to serum needed later for therapeutic purposes.

#### SUMMARY

The blood of new-born infants, and probably of all other mammals, contains little or none of the serum protein or protein fraction known as the euglobulin.

This seems to be supplied chiefly by the colostrum, which differs from milk in containing a large amount of this protein secreted directly from the blood. The euglobulin is the only blood protein that appears in the colostrum, and it is the only protein fraction in which the new-born infants' blood is deficient. Evidently the colostrum is formed to provide the fetus with a supply of euglobulin for its blood, during the short period immediately after birth when proteins may be best absorbed without disintegration by digestive proteolysis. The importance of this lies in the fact that the protective antibodies of the blood are found associated with the euglobulin fraction, and that the quantity of protective antibodies found in the colostrum, the milk and the infants' blood varies directly with the euglobulin content of these fluids. Evidently the colostrum furnishes to the new-born mammal protective antibodies, which probably add much to its capacity to resist infection in early life. If the infant does not receive colostrum it acquires euglobulin in its blood much more slowly, and presumably is in corresponding degree less resistant to infection. It is not probable that there is any equivalent substitute for human colostrum for new-born infants. The findings of numerous recent workers reviewed in this article add force to the statements made by Famulener, ten years ago, that it is most highly desirable that every new-born infant should receive its full ration of human colostrum.

### CEREBRAL EMBOLISM FOLLOWING THE ARREST OF AURICULAR FIBRIL- LATION BY QUINIDIN\*

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The abolition of auricular fibrillation by quinidin is one of the most remarkable phenomena of clinical pharmacology. The drug is already widely used, and it is desirable that the occurrence of alarming symptoms or undesirable accidents following its administration should be recorded promptly.

#### REPORT OF CASE

*History.*—G. H., an American lumberjack, aged 64, admitted to the medical service of the University Hospital, Jan. 13, 1922, complained of breathlessness, cough, pain in the right inguinal region, and deafness. He had had an occasional sore throat, and diphtheria during childhood and, at the age of 9, scarlet fever followed by otitis and permanent deafness. He had had "quinsy" almost every winter for the last thirty years. He had used alcoholic beverages in excess and had smoked about half a package of tobacco a day for many years. He denied having had venereal disease. Sixteen years before admittance he was confined to bed for nine months; the legs and the body were swollen; the former were painful, tender and hot. He had little if any fever. After this illness, which gradually "wore off," he felt quite well except that his legs swelled if he remained on his feet for any great length of time, and his face sometimes appeared "puffy." He had been troubled by breathlessness and palpitation for at least ten years, and thought that his heart beat had been irregular throughout this period. During the last two years these symptoms had been worse, and he had also noted dizziness, a chronic cough, and on a few occasions dysuria. There had been occasional nocturia. He continued to work until February, 1921, when an inguinal hernia developed. This was

11. Wells, H. G.: Studies on the Chemistry of Anaphylaxis, III, Experiment with Isolated Proteins, Especially Those of the Hen's Egg, J. Infect. Dis. 9: 147, 1911.

\*From the Department of Internal Medicine, University of Michigan Medical School.



operated on four months before he was admitted, but the operation was unsuccessful. Since that time his condition had been worse and he had been unable to work, partly because of his large painful hernia and partly because of increasing shortness of breath.

**Examination.**—The skin showed senile changes; it was pigmented, inelastic and wrinkled. The pupils reacted to light normally, and there was no gross disturbance of vision. Hearing was almost entirely lost in the left ear, and was greatly diminished in the right, so that a watch could not be heard beyond 5 cm. (2 inches). There was slight enlargement of the left lobe of the thyroid, and there were a few palpable cervical glands.

The apex beat was in the fifth intercostal space, 12 cm. (4¾ inches) to the left of the median line. The rhythm was absolutely irregular; the apex rate was 96, the pulse rate 82. The heart sounds were not abnormal except that the aortic second sound was loud and ringing. There were no murmurs. The lungs were emphysematous; moist râles were heard over the lower back on both sides. The radial, brachial and temporal arteries were tortuous and sclerotic. There was slight tenderness in the right upper quadrant of the abdomen; the liver could not be felt.

There was a large right inguinal hernia. The knee jerks were prompt and equal. There was no edema of the ankles.

The urine and blood showed nothing abnormal. The Wassermann reaction was negative. The blood pressure was normal.

An orthodiagraphic examination, January 17, disclosed great cardiac enlargement and arteriosclerosis of the aorta.

**Course in Hospital.**—A diagnosis of cardiosclerosis with auricular fibrillation and heart failure was made. The patient was given two preliminary doses of quinidin sulphate, 3 grains (0.2 gm.) each, which produced no unusual symptoms. On the following day (January 21) he received three doses of 6 grains (0.4 gm.) each at four hour intervals. Aside from a conspicuous increase in heart rate, no special effects were noted. After a fourth dose of the drug on the following morning, it was found that his pulse had become regular. About eight hours later he complained of sudden numbness of the left side of the body and left extremities, and of being unable to see well objects to the left of him. Examination revealed weakness of the left arm, diminished knee jerk on the left, and left homonymous hemianopsia. He was seen by Dr. C. D. Camp, who made a diagnosis of "extrapyramidal hemiplegia due to a lesion in the neighborhood of the right optic thalamus." Up to March 1 the auricular fibrillation had not returned. The neurologic signs were still present but less conspicuous. There can be little doubt that they were the result of cerebral embolism.

#### UNDESIRABLE SYMPTOMS FOLLOWING ADMINISTRATION OF QUINIDIN

A few words may be said about the undesirable symptoms following the administration of quinidin that have been reported in the literature. They fall into four groups:

1. **Increased Cardiac Failure.**—In a number of instances<sup>1</sup> the administration of quinidin has apparently led to an increase in the grade of cardiac failure. This has led various authors to advise against its use when a high grade of cardiac failure is present; in such cases a course of digitalis is usually given first. This effect is probably due to the great increase in heart rate which quinidin often produces in cases of auricular fibrillation, either through its effect on the auricular mechanism or by paralyzing the vagi.<sup>2</sup> It has also been held that it depresses the contractility of the heart; but, according to Cohn and Levy,<sup>3</sup> doses comparable to those used clinically do not have this

effect in dogs. By proper care in selecting cases, this unfavorable action may probably be avoided.

2. **Attacks of Apparent Respiratory Paralysis.**—Frey<sup>4</sup> has reported two cases in which the administration of ordinary therapeutic doses of the drug was followed by attacks of great weakness with temporary cessation of respiration accompanied by disappearance of the pulse; the patients were revived by artificial respiration and stimulants. He observed a third case which was similar except that the pulse was not affected. The patient was unconscious for one and one-half hours, and had periods of apnea lasting thirty-five seconds. Following the advice of Frey, it is now customary to test each patient for special susceptibility to the drug by giving small preliminary doses; whether this will enable us to avoid accidents of the type in question is still uncertain. One of Haass' patients (quoted by Hewlett and Sweeney<sup>5</sup>), who had taken 45 grains (2.9 gm.) of quinidin in all, suddenly became pulseless and cyanotic; after the attack the rhythm was found to be regular. This attack appears to have had a different origin from those described by Frey; it suggests the Stokes-Adams attacks of heart block, and was possibly due to the failure of the sinus node or other nodal tissue to take up its function promptly after cessation of the fibrillation.

3. **Embolism.**—The tendency of embolism to occur following the cessation of auricular fibrillation was noted before quinidin was used. It has been attributed to the dislodgment of thrombi, formed in the dilated fibrillating auricles, on resumption of normal auricular activity. It was to be anticipated, therefore, that the arrest of fibrillation of the auricles by quinidin would sometimes be followed by embolism. Frey<sup>4</sup> and Benjamin and von Kapff<sup>5</sup> have each reported cases in which pulmonary embolism occurred a few hours after normal rhythm was established. Ellis and Clarke-Kennedy<sup>6</sup> have reported two cases of probable embolism following quinidin. In the third case of their series there was sudden pain and tenderness under the left costal margin; a splenic embolus was suspected. In the first case a sudden pain in the left loin was followed by hematuria, and, on examination, the left kidney was felt to be large and tender. In this case a second embolus lodged in the popliteal artery after the fibrillation had returned. At present there does not seem to be any way of avoiding this type of accident. It should be noted that spontaneous embolism is not uncommon in chronic heart disease, particularly mitral stenosis.

4. **Sudden Death.**—A case of sudden death following quinidin was reported by Benjamin and Kapff. The preliminary doses of the drug indicated that the patient was unusually susceptible. Treatment was therefore begun with doses of 0.2 gm. (3 grains). After two doses the pulse became regular. Three quarters of an hour after the third dose the heart beat suddenly ceased without premonitory symptoms. The respiratory movements continued for a brief period. Two other cases of sudden death were mentioned by Hewlett and Sweeney, and we have heard of others that have not yet been recorded. The cause of sudden death after quinidin is unknown. Embolism, failure of the sinus node promptly to begin the elaboration of

1. Eyster, J. A. E., and Fahr, G. E.: Observations on the Use of Quinidin in Auricular Fibrillation, *Arch. Int. Med.* **29**: 59 (Jan.) 1922. Hewlett, A. W., and Sweeney, J. P.: The Quinidin Treatment of Auricular Fibrillation, *J. A. M. A.* **77**: 1793 (Dec. 3) 1921.

2. Lewis, T.; Drury, A. N.; Iliescu, C. C., and Wedd, A. M.: *Brit. M. J.* **2**: 514 (Oct. 1) 1921.

3. Cohn and Levy: Personal communication to the authors.

4. Frey: *Ztschr. f. d. ges. exper. Med.* **25**: 290, 1921.

5. Benjamin and von Kapff: *Deutsch. med. Wchnschr.* **47**: 10 (Jan. 6) 1921.

6. Ellis, A. W. M., and Clarke-Kennedy, A. E.: *Lancet* **2**: 894 (Oct. 29) 1921.



impulses, the known depressant effect of the drug on intraventricular conductivity, and its tendency greatly to enhance the ventricular rate, and respiratory paralysis must be considered. In view of the effect of the drug on auricular fibrillation, ventricular fibrillation seems an unlikely cause of death.

Although the accidents following the use of quini-  
din have not so far been sufficiently numerous to contraindicate its use, the possibility of their occurrence must be borne in mind. It would perhaps be best to withhold the drug in cases in which considerable improvement is not to be expected from its use. By the careful selection of cases it is probable that their frequency may be reduced, but it is not likely that they can, for the present, be avoided entirely.

## THE TREATMENT OF MULTIPLE SCLEROSIS\*

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With the etiology and pathology of multiple sclerosis still subjects of controversy, and spontaneous remissions or intermissions as characteristic features of the disease, the beneficial results claimed for any form of therapy are likely to be regarded with a degree of skepticism. If, however, conditions necessary for the institution of rational therapy are obscure, the choice of empiric measures is not altogether a matter of chance; and in this instance it rests on the recognition of clinical features similar to those of a better known disorder in which the therapeutic regimen is directed on a more nearly rational basis.

That there is a striking analogy in the symptomatology and pathology of insular sclerosis and certain types of cerebrospinal syphilis is generally admitted; and yet, medical opinion is quite unwilling to entertain an idea that syphilis may be an etiologic factor in disseminated sclerosis.

Until very recently, the belief has been general that multiple sclerosis is an uncommon disease. Spiller,<sup>1</sup> in 1903, stated that it "seems to be a rare disease in America, and scarcely any cases with necropsy are to be found in the literature of this country." It was his opinion, nevertheless, that probably many cases are overlooked; and four years later, he and Camp<sup>2</sup> apparently found the disorder more general and closely related to certain types of disseminated syphilis, but cautioned the reader that no possible causal relationship between the two diseases was discussed, and stated that "there seems at present a danger that much will be called multiple sclerosis that in reality is some other disease."

Heedful attention to this warning is especially desirable in the differentiation of multiple syphilitic lesions; and the records of the neurologic dispensary for the last decade indicate that multiple sclerosis is either a very common affection or that it is not being distinguished from its clinical image. Often a patient supposed to be suffering from multiple sclerosis

exhibited symptoms known to occur in cerebrospinal syphilis, and occasionally a positive Wassermann report necessitated a revision of the diagnosis. The Wassermann test is not, however, uniformly positive in clinical syphilis, so that failure to secure laboratory confirmation of syphilis in all of the cases is no proof that syphilis may not be an etiologic factor in this strikingly analogous affection.

It seemed reasonable to assume, therefore, that the "other disease" referred to by Spiller might be a type of syphilis, clinically similar to multiple sclerosis, in which a negative Wassermann test is of questionable diagnostic importance; and that antisyphilitic treatment might be a useful form of therapy in these equivocal cases of multiple sclerosis.

Opportunities to test the soundness of this belief have, however, been greatly restricted, and recognition of this imperfection has deterred me from earlier publication; but the concluding paragraph of a later article by Spiller<sup>3</sup> makes me feel that a record of the results which have thus far been obtained may not be entirely unwarranted. "It seems probable," Spiller states, "that syphilis has some influence over multiple sclerosis. The typical lesions probably are not syphilitic in character, but the syphilis may be an *agent provocateur*. It would be well to treat early cases of multiple sclerosis as probably syphilitic—the therapeutic test is well worthy of trial."

The records of the following cases, in which the therapeutic results were observed through a number of years, contain only the essential features. Inquiries which failed to establish the presence of the usual predisposing factors, and examinations which revealed normal conditions are, as a rule, not recorded.

### REPORT OF CASES

CASE 1.—*History*.—E. S. C., a man, aged 38, married, referred by Dr. Peregrine Worth of Hagerstown, Md., Oct. 4, 1913, complained of difficulty in using the left leg. The family history was unimportant. With the exception of the usual diseases of childhood, he enjoyed excellent health until 1907 when, at the age of 32, a venereal sore developed. Both local and general treatment was administered, and there were no secondary manifestations. After several months he was discharged as "cured," and remained well until the onset of the present illness. His wife was living and well, and had had no miscarriages.

*Present Illness*.—Two years before I saw him, walking became difficult because of stiffness of the left leg and occasional stubbing of the toes of the left foot. At first, these symptoms occurred only occasionally, but grew progressively worse, and several months later the right leg and foot were similarly affected. To this motor disability were added, during the second year of his illness, diminution of sexual power and defective sphincter control. There had been brief intervals of marked remissions, but within the last six months all symptoms had been more persistent and of greater intensity. General nervousness had become a prominent feature.

*Examination*.—The pupils were equal and regular, and reacted normally. The fundi, visual acuity, and ocular movements showed no impairment. The tongue was tremulous and the speech hesitating. Both upper extremities showed a definite tremor which was intensified on voluntary movement. The deep reflexes of the arms were about equally exaggerated.

Resistance to passive movements was distinctly increased in both legs, but to a greater degree on the left side. The gait was spastic, and the toes of the left foot were stubbed or dragged along the floor. There was no atrophy, ataxia, or objective sensory disorder. All tendon reflexes of the lower extremities were hyperactive. Bilateral ankle clonus, and bilateral dorsal flexion of the great toe were elicited. Neither abdominal reflex was obtained.

3. Spiller, W. G.: The Subacute Form of Multiple Sclerosis, *Arch. Neurol. & Psychiat.* 1: 219 (Feb.) 1919.

\* Read in abstract before the Philadelphia Neurological Society, Nov. 25, 1921, and the Baltimore City Medical Society, Dec. 16, 1921.

1. Spiller, W. G.: A Report of Two Cases of Multiple Sclerosis, with Necropsy, *Am. J. M. Sc.* 125: 61, 1903.

2. Spiller, W. G., and Camp, C. D.: The Clinical Resemblance of Cerebrospinal Syphilis to Disseminated Sclerosis, *Am. J. M. Sc.* 133: 884 (June) 1907.



Physical examination revealed no abnormality in the thorax or abdomen. The urinary analysis and blood picture were normal. The spinal fluid was clear and colorless; pressure, 70 mm.; lymphocytes, 9; globulin, ++; Wassermann reaction, 0; blood Wassermann reaction, 0.

*Summary and Conclusion.*—A man, with a history of syphilis, developed, four years after the infection, progressive paraplegia, speech defect, tremor, and sexual and bladder disturbances. The deep reflexes were exaggerated. Bilateral ankle clonus and bilateral positive Babinski were obtained. The abdominal reflexes were absent. These symptoms exhibited the remissions and exacerbations common to syphilis and multiple sclerosis, but there was no laboratory evidence of syphilis; and the slight abnormalities of the spinal fluid have been observed in both diseases. Thus, a clinical distinction is not readily made, but in all probability the affection is syphilitic in nature, although some clinicians may regard it as true multiple sclerosis. Because of the negative laboratory report, the adoption of intensive antisyphilitic treatment was not insisted on, and a provocative course of mercurial inunctions was ordered.

*Treatment and Subsequent Course.*—During eight weeks, beginning Oct. 26, 1913, fifty mercurial inunctions and one intravenous dose of arsphenamin, 0.6 gm., were administered. Two Wassermann tests of the blood were repeated with negative results. No improvement was noted in the clinical condition, and the patient was temporarily discharged with a diagnosis of multiple sclerosis and an unfavorable prognosis.

Jan. 8, 1914, a luetin test, although of undetermined value, was reported as positive, and the patient was later admitted to the Church Home and Infirmary for intensive antisyphilitic treatment. This consisted of one intravenous dose of arsphenamin, 0.6 gm., and two intradural doses of mercurialized serum containing 0.00065 and 0.00130 gm. of mercuric chlorid. Lumbar puncture revealed the spinal fluid clear, under a pressure of 180 mm.; lymphocytes, 12; globulin, ++. A Wassermann test was not made. Further treatment was, for the time being, discontinued. One month after discharge from the hospital, the patient wrote: "I seem to be getting along very nicely, I feel much better and I think I can walk very much better."

April 1, 1914, examination revealed that the gait was decidedly improved. The patient had gained 7 pounds (3.18 kg.) in weight, and the bladder was said to be under better control. The reflexes were unchanged. Following prolonged exposure to dampness two days before, the gait was said to be not so good as before exposure, but much better than it was before intradural treatment. Because of the slight recrudescence following exposure, a third intradural dose of mercurialized serum (mercuric chlorid, 0.00130 gm.) was administered, June 26. Examination at this visit disclosed a definitely improved gait and a gain in weight. The patient said he felt fine, and bladder function was improved. Tremor and speech defect were not so marked. The spinal fluid was clear; lymphocytes, 10; globulin and Wassermann tests were not made.

Nov. 12, 1914, the patient returned for reexamination and stated that "he felt fine, could walk almost normally, did not stump his toe, and the bladder trouble was greatly relieved." He had continued to gain in weight, and objectively his condition appeared to be normal. There was no tremor or speech defect. The reflexes were the same as at the first examination. Four months later, the clinical improvement persisted. The spinal fluid was clear; pressure 230 mm.; lymphocytes, 6; globulin, +; Wassermann reaction, negative. Nothing further was heard from him until April 15, 1916, a year later, when he made the favorable report: "I feel perfectly well, my walking is normal, and the bladder gives me very little trouble." Examination at this time revealed that the reflexes and pupillary reactions were the same as when treatment was begun, but the speech and gait were normal, and there was no tremor. Nine months later he wrote: "I am about the same as when you last saw me. Have been feeling fine and have very little trouble." A similar report was received, June 24, 1917, and confirmed on reexamination. Because of overwork and undue fatigue he was advised to diminish the amount of work and return for further study if no improvement was noted; but he was not heard from again until three years later.

July 12, 1920, he wrote: "Have certainly been in good health and feeling fine ever since I took last treatment" (June 26, 1914, six years previously).

Oct. 26, 1920, reexamination revealed that the gait was practically normal; there was no spasticity, tremor or speech defect. The reflexes were unchanged from the first examination. Sphincter control was said to be good. The spinal fluid was clear; pressure, 70 mm.; lymphocytes, 11; globulin, +; Wassermann reaction, 0; blood Wassermann reaction, 0. The clinical and laboratory studies did not seem to warrant further intradural treatment, and a course of intramuscular injections of mercury was ordered. A letter of July 19, 1921, stated that he slept better, had gained in weight, did not tire so easily, and would return for further observation. He failed, however, to fulfil his engagement, and has sent no further communication.

*Summary.*—A patient, with clinical evidences of a disseminated lesion of the central nervous system, had a history of syphilis which was unconfirmed in the laboratory. After two months of general antisyphilitic treatment the Wassermann test was repeatedly negative, and no material change was noted in the clinical condition. Following two intradural doses of mercurialized serum, there was marked improvement in the clinical picture which had, for several months prior to treatment, shown no tendency to spontaneous recovery. After the third intradural treatment there was, with the exception of the reflexes, almost complete restoration of health, and, with minor exceptions, this persisted throughout a period of seven years.

*CASE 2.—History.*—R. B. R. (F. 84248), a man, aged 26, married, was admitted to the Johns Hopkins Hospital Dispensary, Oct. 30, 1917, complaining of "stiffness of the legs and walking wobbly." His mother died of tuberculosis, but the family history, in other respects, was without significance. He had always been "nervous" and, at the age of 14, suffered from typhoid fever followed by a "nervous breakdown." During the last five years there had been several attacks of malaria. A history of syphilis was not obtained, but he admitted numerous exposures and a gonorrheal infection nine years before. His wife was living and well, and had had two miscarriages, one at the third, and the other at the sixth month. Three children were living and in good health.

*Present Illness.*—For the last three years there had been increasing general nervousness, and in November, 1916, he first noticed repeated "tickling sensations" in the right leg, accompanied by occasional weakness of the right knee. These symptoms were shortly followed by attacks of pronounced giddiness, which had continued up to the present time, and had seriously interfered with his custom of riding a bicycle to and from his place of business. Two months before, stiffness and weakness developed in the left leg; and the gait became so unsteady that his friends accused him of being intoxicated. Since then the sight of both eyes had shown progressive impairment, more particularly in the right eye. There was no history of diplopia or speech defect. Sphincter control was retained, but he was relatively impotent.

*Examination.*—The pupils were equal, regular, and reacted promptly to light and during accommodation. Ocular movements were normal. Each nerve head was distinctly pale in its nasal half, and the impairment was greater in the right eye. Vision was defective in both eyes, but the right perimetric field showed a greater degree of constriction than the left. Speech was unaffected. There was pronounced intention tremor of both upper extremities. The tendon reflexes of the arms were equally exaggerated on the two sides.

Spasticity and ataxia were pronounced in the legs, and he could not stand or walk without support. The ataxia was intensified when the eyes were closed. Both knee jerks and both Achilles jerks were greatly exaggerated, and clonus was obtained at both ankles. Bilateral dorsal flexion of the great toe was elicited on plantar stimulation. Neither abdominal reflex was obtained. Sensation was objectively unimpaired.

On admittance to the Church Home and Infirmary for observation, physical examination of the thorax and abdomen revealed no abnormality. The blood picture and urinary and gastric analyses were normal. The spinal fluid was clear and colorless; pressure, 160 mm.; lymphocytes, 3; globulin, ++; Wassermann reaction, 0; gold chlorid test, 0; blood Wassermann reaction, 0.



*Summary and Conclusion.*—A young adult with no history of syphilis suffered from dizziness, tremor, defective vision, difficulty in walking and a moderate degree of impotence. Examination revealed beginning optic atrophy in both eyes, normally reacting pupils, intention tremor, spasticity and ataxia of both lower extremities, clonus, a bilaterally positive Babinski reflex, and loss of both abdominal reflexes. No evidence of syphilis was obtained from examination of the blood or spinal fluid. A tentative diagnosis of multiple sclerosis had been made in the dispensary, and this was, in part, confirmed by the subsequent laboratory studies.

*Treatment and Subsequent Course.*—Conditions arose which made it necessary for the patient to return home, and he was given a letter to his physician, Dr. F. D. Armstrong of Fort Myers, Fla., advising vigorous antisiphilitic treatment.

The following record is abstracted from reports which Dr. Armstrong has kindly furnished me at various intervals:

In the latter part of December, 1917, arsphenamin, 0.6 gm., was given intravenously. Reaction was intense, and all symptoms were aggravated for several days. Intramuscular injections of mercury were substituted for the arsphenamin, and thirteen successive treatments were administered. After the fifth dose an appreciable improvement was noted in the patient's condition, and on completion of the series, improvement was such that he could ride his bicycle to and from his place of business. The blood Wassermann test was negative. In June, 1918, a second dose of arsphenamin, 0.6 gm., was administered intravenously. This was again followed by a severe reaction and temporary recrudescence of all symptoms. One week later, improvement was more pronounced than at any previous time. Two more arsphenamin treatments, of 0.6 gm. each, were given; one in August, 1918, the other in May, 1919. Each of these was followed by a mild reaction, and continued improvement in the clinical condition.

May 21, 1919, the patient returned to Baltimore for reexamination. The eyes were said to be improved, and a visual test confirmed this statement. The optic nerve showed no change from that noted at the first examination. The gait was distinctly improved. The patient walked without assistance and with little or no spasticity. There was no tremor of the head or extremities. The tendon reflexes of the upper extremities were of normal intensity, but the deep reflexes in the legs were exaggerated on both sides. Ankle clonus was present on the right, none on the left. Plantar stimulation of the right foot produced dorsal flexion of the great toe, but on the left the response was invariably normal. The abdominal and cremasteric reflexes were not obtained. His condition was so improved that he returned to Florida without permitting further examination.

June 21, 1921, three years and eight months after the beginning of treatment, Dr. Armstrong wrote that the patient was not under his care at present, but that he was decidedly improved, worked every day and pushed a wheel about 2 miles back and forth from his work.

*CASE 3.—History.*—J. D. S. (G. 21152), a man, aged 31, single, admitted to the Johns Hopkins Hospital Dispensary, Oct. 25, 1919, complained of "paralysis of the legs and bad eyes." The family history was unimportant. The personal history was not reliable, but he thought that he had had the usual diseases of childhood, diphtheria at the age of 4, meningitis a year later, typhoid fever when 8 years of age, and influenza in 1919. A gonorrheal infection occurred at the age of 16, but he denied having had primary or secondary syphilis.

*Present Illness.*—In April, 1910, transitory numbness and tingling were experienced in the left hand, and six weeks later these symptoms appeared in the left leg, which later became progressively weak and stiff. Some time thereafter—the exact interval is not known—gradually increasing weakness of the right leg developed. Vision in the right eye began to fail in 1916, and several months later in the left eye. At present he could read only the largest print. The visual defect had shown periods of improvement, but the stiffness of the legs had steadily progressed. Recently, there had been some difficulty in voiding. A Wassermann test of the blood, in 1910, was reported as negative; but when the eyes began to fail, his oculist made a diagnosis of syphilis, and admin-

istered two intravenous doses of arsphenamin and a course of mercurial inunctions. On completion of this treatment no improvement was noticed in the clinical condition, and the Wassermann test of the blood was again reported as negative.

*Examination.*—On admission to the dispensary the following clinical notes were made by Dr. H. M. Thomas: The pupils were equal and moderately dilated, and both reacted to light. Nystagmus of the right eye was pronounced, but it was not so intense in the left. The right eye was practically blind, and the right optic nerve was pale. The entire nerve-head of the left eye was white and the vessels were small. Speech was, perhaps, slightly impaired. The hands showed marked tremor. The deep reflexes in the arms were active on the two sides. The gait was distinctly spastic, but more so on the right side. While standing there was a tendency to fall backward, and this was intensified if the eyes were closed. Both knee jerks were exaggerated, and there was bilateral ankle clonus. Plantar stimulation and tibial irritation on either side caused dorsal flexion of the great toe. The abdominal reflexes were present, but feeble on the left side. Laboratory report from the department of syphilis was: spinal fluid: cells, 0; globulin, +; Wassermann reaction, 0; blood Wassermann reaction, 0.

The patient was admitted to the Church Home and Infirmary, Oct. 31, 1919, for further study and treatment. The neurologic examination verified the observations made by Dr. Thomas. The blood picture, urinary analysis, and renal functional tests were normal. There was absence of free hydrochloric acid in the gastric juice. The thorax and abdomen showed no abnormalities. The spinal fluid was clear and colorless; pressure, 120 mm.; lymphocytes, 8; globulin, +; Wassermann reaction, 0; gold chlorid test, paretic curve; blood Wassermann reaction, 0.

*Summary and Conclusion.*—The absence of a history of syphilis and inability to demonstrate its presence by the usual laboratory methods were important data in support of the clinical diagnosis of multiple sclerosis. Tremor, nystagmus, speech defect, optic atrophy, changes in the abdominal reflexes, and spastic paraplegia were the significant clinical features. The paretic gold curve is observed in conditions other than syphilis, and has been reported in genuine multiple sclerosis.

*Treatment and Subsequent Course.*—Intensive antisiphilitic treatment was adopted. Four intravenous doses of arsphenamin, 0.6 gm., were administered at weekly intervals. In each instance, on the succeeding day, serum containing 0.00130 gm. of mercuric chlorid was given intradurally. Following each treatment, transient improvement was noted in one or more symptoms, and on discharge from the hospital, Dec. 1, 1919, the following notes were made: The general condition has improved, the bladder is under better control, and vision in the left eye is said to be more acute. The gait is still very defective, but is perhaps better than before treatment, and the patient feels that he can now "return to work."

Dec. 24, 1919, he wrote: "I am indeed glad to advise you that I am better. My legs are stronger and I am able to work with the least effect on my legs than any time in a year. Have been doing outdoor work for exercise." Five months later he reported: "My condition is a trifle better than before treatment. My doctor thinks I should return for another series of treatments." Financial conditions prevented his return, and no further communication was received until April 15, 1921, when his physician, Dr. C. C. Hinton, of Macon, Ga., wrote that he had not seen the patient since August, 1920, and knew nothing of his present condition. Dr. Hinton is, however, of the opinion that no material improvement was derived from the arsenical and mercurial treatment, but that he secured beneficial results from the use of thyroid extract.

*CASE 4.—History.*—W. E. L., a man, aged 34, married, was referred by Dr. H. M. Thomas, June 22, 1920, from whose records the following history and examination are abstracted: The patient complained of difficulty in walking and defective vision in the right eye. The family history was unimportant. He was an only child, and was said to have always been nervous, and to have had the usual diseases of early life. A gonorrheal infection occurred at the age of 24, but there



was no history of syphilis. Following a severe tonsillar infection in 1909, there were several attacks of blurred vision over a period of a week or ten days, when he completely recovered. Six years later the visual disorder recurred, and was associated with numbness and motor disturbances in the right hand of several weeks' duration. A similar attack occurred in 1917, which his physician attributed to nicotin poisoning.

*Present Illness.*—With the exception of the recurrent visual disturbances, he dated the onset of his present illness from the fall of 1918, when he noticed occasional jumping of both legs, but more particularly of the right leg. Six months later both lower extremities gave way completely, and since then he had walked with great difficulty. The motor disability persisted, and in the latter part of 1919 was associated with numbness of the feet and general exhaustion. A lumbar puncture at that time was thought to have improved his condition slightly, but the result of the spinal fluid examination was not known. Sphincter control and sexual ability were unaffected.

*Examination.*—The left pupil was larger than the right, but both reacted to light and during accommodation. Large print could not be read with the right eye. Vision in the left eye was quite good. Both nerve heads were distinctly pale, and the pallor was more pronounced in the right eye. There was no definite nystagmus, but on extreme deviation of the eyes to the left there were a few nystagmoid movements. Speech was unaffected. Slight tremor was present in both extremities, but the finer movements of the hands were well performed. The deep reflexes in the arms were exaggerated. The gait was definitely ataxic, and not unlike that of the tabetic. The right leg showed some weakness in the flexors of the knee and the ankle. Neither abdominal reflex was obtained. The deep reflexes of the legs were exaggerated, and bilateral ankle and patellar clonus was present. Dorsal flexion of the great toe was obtained on each side. There were no sensory changes.

The patient was admitted to the Church Home and Infirmary, where the following additional studies were made: Physical examination of the thorax and abdomen revealed no abnormality. At times, the patient could not stand or walk without assistance, and the gait was markedly spastic and ataxic. The condition appeared to be advanced to so great a degree that little improvement was to be expected from any form of treatment. The blood, urinary and gastric analyses were normal. The spinal fluid was clear and colorless; pressure, 170 mm.; lymphocytes, 12; globulin, +; Wassermann reaction, 0; blood Wassermann reaction, 0.

*Treatment and Subsequent Course.*—The situation was fully explained to the patient and his family, both of whom were willing to accept the therapeutic experiment. Accordingly, two intravenous doses of the diarsenol brand of arsphenamin, 0.4 gm. each, and two intradural doses of mercurialized serum were administered. Following the second intravenous treatment, the patient was critically ill for thirty-six hours, and it was decided to discontinue further medication. He remained in the hospital ten days longer, but showed no improvement in his nervous symptoms.

Nov. 22, 1920, a letter from the patient's wife stated that the symptoms had steadily progressed; both arms were now affected, and he had no use of the legs.

*CASE 5.—History.*—W. E. N., a woman, aged 22, married, was referred by a former patient, Sept. 7, 1914. Her illness of this date was unquestionably of syphilitic origin. From this she completely recovered, and several years later exhibited the clinical symptoms of multiple sclerosis.

The family history was unimportant, and the personal history was insignificant with the exception of the syphilitic disorder for which she first sought relief. She then complained of numbness of both lower extremities and difficulty in walking. The affection began four years previously, with a dragging sensation, weakness, and motor disability of both legs, but more particularly in the left leg. At first, these symptoms occurred periodically, in attacks of eight or ten days' duration, but always terminated in complete recovery. Recently, the disorder had been of greater frequency, of longer duration, and accompanied by shooting pains in the

left leg and arm. Sphincter control had not been affected. Venereal infection was persistently denied.

The present attack, of Sept. 4, 1914, was said to be the most alarming, and she had since been unable to stand or walk without the support of two companions. Examination failed to disclose any abnormality of the pupils, cranial nerves, or upper extremities. There was no tremor, nystagmus or speech defect. Both lower extremities were spastic and ataxic, and suggestive dorsal flexion of the left great toe was occasionally obtained. Objective sensory changes were not demonstrable. The blood Wassermann reaction was strongly positive. Lumbar puncture was refused.

Three intravenous doses of arsphenamin, a course of mercurial inunctions and potassium iodid were followed by complete clinical recovery, and a negative Wassermann examination of the blood, Oct. 27, 1914. From this date to Dec. 8, 1919, ten Wassermann tests of the blood were made, at intervals of six months, and all were persistently negative. The spinal fluid was examined in June, 1915, and was normal in all respects. Each time the blood was secured a neurologic examination was made, but failed to demonstrate any abnormality. Thus, so far as could be determined, she remained perfectly well with entirely negative laboratory reports for a period of five and a half years.

Feb. 23, 1920, the patient returned for reexamination because "objects to the right and left danced in a rapid manner." There was very definite nystagmus of both eyes when looking in either lateral direction. This symptom was preceded by several attacks of intense dizziness, and blurring of vision. The blood Wassermann reaction was negative. Lumbar puncture was refused. The patient was referred to Dr. J. W. Downey for examination of the ocular and vestibular functions, who reported: "Continued rotary and horizontal nystagmus on looking to right. Vision, right eye, 18/16; left eye, 18/30. Pupils normal. Nerve heads apparently normal. Contraction of field for red. The left eye shows general contraction of both form and red fields. The eyes suggest beginning simple optic atrophy. Ears suggest intracranial irritation. The examination of the eyes and ears suggests multiple intracranial lesions." Dr. Downey reexamined the patient, May 1, 1921, when it was then learned that since the previous visit she had been perfectly well until two weeks before, since which time there had been repeated attacks of dizziness. There was, however, no nystagmus, but, with this exception, the condition of the eyes and ears remained unchanged.

Oct. 16, 1921, the vertigo continued to be a distressing symptom, and since September 11, pain, stiffness and numbness in the left arm had been noted. Examination revealed definite tremor of the left hand, which interfered with the performance of more delicate movements. Speech was unaffected. There was no nystagmus. All the tendon reflexes, with the exception of the left Achilles jerk, were exaggerated. The left abdominal reflex was not obtained, but a definite positive Babinski reflex was elicited when the right sole was stimulated. Sphincter control was said to be good. The blood Wassermann reaction was negative. Lumbar puncture was refused.

*Summary and Conclusion.*—A patient with demonstrable syphilis of the central nervous system responded promptly to antisyphilitic treatment, and remained clinically well five and a half years. During this period repeated Wassermann tests were persistently negative. Since then, with no history of any other illness, the following clinical features commonly observed in multiple sclerosis, were noted: vertigo, nystagmus, simple optic atrophy, tremor, changes in the abdominal reflexes, pain, paresthesia, exaggerated tendon jerks, and a positive Babinski toe sign. These symptoms were characterized by periods of remission, intermission and recrudescence. The blood Wassermann reaction remained negative. It is not improbable that the present disorder was of syphilitic origin. Although syphilis was not demonstrable, antisyphilitic therapy was recommended, but treatment and further laboratory study were refused. Had it not been possible to know the details of the case from the beginning, and were one to depend on the Wassermann test or a history of syphilis to establish the nature of the subsequent disorder, there is little doubt that



it would be diagnosed as multiple sclerosis. Should, however, the recent symptoms be attributed to syphilis, the prolonged intermission of five and a half years presents a further analogy to the clinical course of multiple sclerosis, and at the same time illustrates the precaution necessary in pronouncing a "cure" in syphilis. If, on the other hand, the symptoms are those of true multiple sclerosis, it is difficult to exclude syphilis as an etiologic factor.

#### SYPHILIS AND MULTIPLE SCLEROSIS

There are, no doubt, features in the preceding clinical records on which one may defend the position that they are only instances of certain types of cerebrospinal syphilis; that a diagnosis of multiple sclerosis is not warranted, since there is a history of syphilis in the first case, a positive Wassermann reaction was obtained in the fifth patient, and the classical symptoms of nystagmus, scanning speech and intention tremor are not invariably present. The history of a venereal sore does not necessarily establish its syphilitic nature, nor does a negative laboratory report preclude the possibility of syphilis. The triad of Charcot has also been observed in unquestioned syphilis of the nervous system, and in multiple sclerosis it is often a late if not uncommon syndrome.

An early diagnosis of multiple sclerosis is to be desired, and not a few clinicians now claim that they recognize the disease in its incipient stages. Of the initial symptoms, much importance has been attached to the occurrence of optic atrophy, central scotoma for red, vertigo, loss of the abdominal reflex, sphincter and sexual disorders, spasticity, ataxia, and the reflex signs of pyramidal tract involvement. If among these symptoms there are to be found one or more features of the classical triad, and there is no laboratory evidence of syphilis, a diagnosis of multiple sclerosis is generally accepted without dispute; but all of these symptoms occur in syphilis, and there is no proof that they may not depend on an undemonstrable syphilitic infection.

The literature contains many instances of striking resemblances in the two diseases, and, at times, clinical distinction is quite impossible. A history of syphilis is, in Spiller's opinion, of little importance, since "it is probable that syphilis plays no part in the etiology of multiple sclerosis." Redlich,<sup>4</sup> Marburg, and Catola<sup>5</sup> refer to the occurrence of multiple sclerosis in earlier life, and assert that it has a more chronic course than syphilis; but juvenile and rapidly advancing types of both diseases have been described. Nevertheless, Marburg argues that juvenile multiple sclerosis is evidence of its nonsyphilitic nature. Sachs,<sup>6</sup> in 1891, regarded a history of syphilis, absence of Charcot's triad, the progress of the disease, and the therapeutic test as helpful distinguishing features, but later found them of little value, and concluded that a close study of the question suggests the possibility that the two diseases may be identical. Since then, Catola has described the classical triad in unquestioned syphilis with normally reacting pupils; but the pupils often react normally in syphilis, until late in the disease, and Spiller and Camp have recorded an instance of this kind. The patient had been presented in the clinic for many years as a case of multiple sclerosis. Syphilitic infection was persistently denied until shortly before death, when the

Argyll Robertson pupil was also first noted. A clinical diagnosis of cerebrospinal syphilis was then made and later confirmed at necropsy. According to Sachs,<sup>7</sup> pupillary changes have been described in multiple sclerosis; but Marburg is of the opinion that the occurrence of the Argyll Robertson pupil in this disease is always a complication. He has, however, observed definite myosis; and Gowers<sup>8</sup> describes pupillary inequality, loss of accommodation, and more rarely abolition of the light reflex.

Loss of the abdominal reflex is usually regarded as one of the distinctive early signs of multiple sclerosis, and Söderbergh,<sup>9</sup> has recently made this symptom a subject of special study. It is, however, in Adams'<sup>10</sup> opinion only further evidence of the resemblance of syphilis to multiple sclerosis, since Head and Fearnside have shown that, in syphilis, the spinal roots most frequently involved are those from the seventh thoracic to the first lumbar; and it is within these segments that the abdominal reflex is located.

Heretofore much importance has been attached to the developmental or endogenous nature of multiple sclerosis; but within the last decade belief in its toxic or infectious origin has become increasingly popular, and recent studies on the inflammatory character of the lesions tend to confirm this opinion. The exciting agent has been attributed to almost every form of bacterial disease, and to various localized foci of infection; but in the earlier writings of Spiller, Sachs, Gowers, Redlich, and in all modern textbooks, syphilis is said to have no place in the etiology of multiple sclerosis. It appears, however, that Gowers is not entirely of this belief, for he states that "a second fact which deserves to be borne in mind, although its significance is obscure, is that the only lesion which resembles insular sclerosis in general distribution, and sometimes in characters, is one that is apparently quite distant from it in etiology, the disseminated inflammation in the central nervous system produced by syphilis"; but "different as the two processes are in their immediate pathology, they may possess some common relations in nature or causation."

A more tolerant opinion concerning the etiology of multiple sclerosis is entertained by Spiller, who in 1919 admitted that "there is also a possibility that at times syphilis may play a rôle, and opportunity is taken to consider the findings justifying this point of view"; and although an individual may suffer from a combination of the two diseases, "syphilis cannot be excluded as a cause." Catola, in 1906, arrived at a similar conclusion, and argued that if the infectious diseases and toxemias are of etiologic importance, there is no just reason for the exclusion of syphilis. He quotes the following from Déjerine and Thomas, who advised the use of mercury and iodids: "For," they say, "it has not been proved that multiple sclerosis is not referable to syphilis as a cause" (*car, disent-ils, il n'est pas démontré que la sclérose en plaques ne puisse reconnaître la syphilis comme cause*). This opinion has also been expressed by Wernicke, Moncorvo, Jacobsohn and Cestan-Verger;<sup>11</sup> and Catola further finds that in certain instances syphilis appears to be the only eti-

7. Sachs, B.: The Relation of Multiple Sclerosis to Multiple Cerebrospinal Syphilis, and to Paralysis Agitans, Philadelphia M. J. **1**: 241, 1898.

8. Gowers, W.: Diseases of the Nervous System, Philadelphia, P. Blakiston's Son & Co. **2**: 543, 1906.

9. Söderbergh, G.: Abdominal Reflexes in Multiple Sclerosis, Acta. Med. Scandinav. **55**: 294 (June 17) 1921; Abstr. J. A. M. A. **77**: 744 (Aug. 27) 1921.

10. Adams, D. K.: The Cerebrospinal Fluid in Disseminated Sclerosis, Lancet **1**: 420 (Feb. 26) 1921.

11. Cestan-Verger.: Précis de pathologie interne, Paris, Masson et Cie **4**: 344, 1919.

4. Redlich, E.: Multiple Sclerosis, Modern Clinical Medicine, Diseases of the Nervous System, New York, D. Appleton & Co., 1908, p. 557.

5. Catola, G.: Sclérose en plaques et syphilis, Nouv. Iconog. de la Salpêtrière **19**: 337 (July-Aug.) 1906.

6. Sachs, B.: Multiple Cerebrospinal Syphilis, New York M. J. **54**: 309, 1891.



ologic factor. The studies of Dawson<sup>12</sup> suggest that the disease is dependent on a specific infection, but fail to convince him that syphilis has any causative relation, although it may produce a syndrome very similar to that of disseminated sclerosis.

The disseminated syphilitic lesion bears a close resemblance to that of insular sclerosis. Sachs' statement, that "both processes invade the cerebral or spinal tissue but do not destroy it, at least not rapidly," may be true in certain instances, but later studies appear to contradict this opinion. It has been generally taught that the lesion of multiple sclerosis may be distinguished by the preservation of axis cylinders in the sclerotic area, and the absence of secondary degeneration; and caseation is said to be typical of the syphilitic lesion; but Gowers finds that when caseation is absent "the aspect of the lesions is scarcely distinguishable from that of sclerosis." Dawson asserts that the histologic changes in the two diseases are quite distinguishable, although "the anatomic features, once thought to be distinctive of disseminated sclerosis, may be the final stage of quite different processes." He admits, however, that a certain number of fibers undergo secondary degeneration in genuine insular sclerosis. Catola, Spiller and others have also described secondary degeneration and loss of axis cylinders in typical disseminated sclerosis; but Catola has observed typical syphilitic sclerosis in which there were preservation of the axis cylinders and the absence of secondary degeneration.

The cytology of the two diseases is often quite identical. In both, plasma cells, and lymphocytic perivascular, meningeal and radicular infiltrations have been observed. Klingman,<sup>13</sup> Wohlwill and Marinesco<sup>14</sup> have made a special study of the cellular reactions in multiple sclerosis, and find that the infiltrations are very similar to those of syphilis. In the specimens studied by Birley and Dudgeon,<sup>15</sup> cellular reactions, axon changes and secondary degeneration were of common occurrence. Schuster<sup>16</sup> has also made a significant observation. He finds, in certain cases of disseminated sclerosis, that the lesions are most commonly situated in what he calls the boundary zone of the cortex, and claims to have demonstrated *Spirochaeta pallida* in this zone, in a genuine case of multiple sclerosis. It was in this region, also, that the organism was most frequently observed in the paretic brain; and Igersheimer's<sup>17</sup> demonstration of *Spirochaeta pallida* in the atrophic optic chiasm in tabes and paresis deserves consideration.

The clinical laboratory has furnished rather contradictory evidence of the probable syphilitic nature of insular sclerosis. Marburg<sup>18</sup> states that in this disease the lymphocytes in the spinal fluid are either normal or only slightly increased; the globulin is positive in 45 per cent. of the cases; and a positive Wassermann test has been recorded in one instance. In two patients the serum Wassermann test was also positive. Similar

observations have been made by Plaut, Sarr and Sarthof, and Spiller has reported as many as 200 lymphocytes per cubic millimeter in the spinal fluid. The Wassermann examination was not made. Burr<sup>19</sup> found the blood and spinal fluid Wassermann negative, but a paretic gold curve in one instance; and Ostheimer, in discussing this report, states that the paretic, luetic or tabetic gold curve is often observed in multiple sclerosis. The studies of Dawson, Marinesco, and Birley and Dudgeon gave no evidence of syphilis in any of the patients, but Marinesco refers to three instances in which Nonne obtained a positive Wassermann reaction. In the thirty-three cases of Birley and Dudgeon, the lymphocytes were not increased, the globulin was negative in twenty-nine instances, and a negative Wassermann reaction was obtained in the blood and spinal fluid in all cases. Adams has recently studied forty-one cases of multiple sclerosis, and found the paretic or luetic gold curve to be present in all but two cases, in which a subsequent diagnosis of arteriosclerosis was confirmed at necropsy. Lymphocytosis was not a prominent feature; the globulin was occasionally increased; and, with the exception of two questionable observations, no organisms were found in the dark-field examination of centrifugalized specimens. The Wassermann reaction was positive in both the blood and spinal fluid in four cases; in the blood only, in two cases; and in the spinal fluid alone in three instances.

Within the last eight years, multiple sclerosis has been subject to experimental investigation in an effort to establish its infectious nature and the character of the specific organism; but thus far the results have been inconclusive. Bullock<sup>20</sup> claims to have first transmitted the disease from man to the lower animals. The experiments are, however, not convincing. Four years later, Kuhn and Steiner demonstrated a flexible protozoon in the blood of animals injected with the spinal fluid or blood of multiple sclerotic patients. Similar observations have since been reported by Simons, Rothfeld, Freund and Hormowski; and Gye<sup>21</sup> has more recently repeated his inoculation of lower animals with equally unconvincing results. By ultra-microscopic methods, Siemerling has discovered in the nervous tissue of patients suffering from insular sclerosis an organism which, similar to that isolated by Kuhn and Steiner, is thought to be related to, but not identical with, *Spirochaeta pallida*. Speer<sup>22</sup> also has observed an actively motile spirochete in the macerated nervous tissue, and Marinesco, in 1919, obtained a similar parasite from the spinal fluid of animals previously injected with the spinal fluid of sclerotic patients. He repeated the experiment several months later, using the fluid of the same patient, but the result was entirely negative. It was concluded that the spinal fluid of patients with multiple sclerosis either does not contain the organism at all times, or that it is present in an attenuated form. The experiments of Birley and Dudgeon appear, however, to contradict the claims of their predecessor. Only those patients in whom there were clinical evidences of a recent or progressive lesion were selected; but in no instance were they able to transmit the disease, or to demonstrate a specific organism.

12. Dawson, J. W.: The Histology of Disseminated Sclerosis, Edinburgh M. J. 17: 229 (Oct.), 311 (Nov.), 377 (Dec.) 1916.

13. Klingman, T.: The Histogenesis of Multiple Sclerosis, Arch. Neurol. & Psychiat. 1: 39 (Jan.), 193 (Feb.) 1919.

14. Marinesco, G.: Etude sur l'origine et la nature de la sclérose en plaques, Rev. neurol. 26: 481 (June) 1919.

15. Birley, J. L., and Dudgeon, L. S.: A Clinical and Experimental Contribution to the Pathogenesis of Disseminated Sclerosis, Brain 44: 150 (July) 1921.

16. Schuster, G.: Spirochaetes in the Aetiology of Certain Paralyzes, Lancet 1: 21 (Jan. 1) 1921.

17. Igersheimer, J.: Spirochätenbefunde an der Sehbahn bei Paralyse, Deutsch. med. Wchnschr. 47: 738 (June 30) 1921.

18. Marburg, O.: Multiple Sklerose, in Lewandowsky: Handbuch der Neurologie, Berlin, Julius Springer 2: Spezielle Neurologie 1: 911, 1911.

19. Burr, C. W.: Two Cases of Multiple Sclerosis, Arch. Neurol. & Psychiat. 5: 767 (June) 1921.

20. Bullock, W. E.: The Experimental Transmission of Disseminated Sclerosis to Rabbits, Lancet 2: 1185, 1913.

21. Gye (formerly Bullock), W. E.: The Experimental Study of Multiple Sclerosis, Brain 44: 213 (July) 1921.

22. Speer, E.: Spirochätenfund im menschlichen Centralnervensystem bei multipler Sklerose, München. med. Wchnschr. 68: 425 (April 8) 1921.



Thus, while the etiology of the disease remains unknown, evidence is accumulating which suggests its inflammatory nature and probable organismal origin. The experimental studies have, however, neither proved nor entirely excluded its probable relation to syphilis. Nevertheless, the clinical and pathologic analogy of the two diseases, and the probability of a closely related, if not identical etiology, have encouraged the experimental adoption of antisyphilitic therapy. Perrin,<sup>23</sup> in 1920, reported promising results from the intravenous use of neo-arsphenamin in a multiple sclerotic who had shown no improvement from the use of other therapeutic agents. In Burr's case the patient developed convulsions and monoplegia following an intradural dose of arsphenamized serum. Adams has had a more extensive experience. He records the treatment of forty-one cases of multiple sclerosis by antisyphilitic methods. Some of the patients received as many as twenty intravenous doses of arsenic, supplemented, in most instances, by intramuscular injections of mercury. Thirteen of the patients showed definite improvement. The gold chlorid test of the spinal fluid was made at repeated intervals, in sixteen of the patients, and gave the reaction of the paretic, syphilitic or tabetic curves. He concludes that treatment, to be effective, must be begun early. Kalberlah<sup>24</sup> has arrived at a similar conclusion from the use of silver arsphenamin in the treatment of thirty-six patients. Thus, while my own experience with the antisyphilitic treatment of multiple sclerosis is not extensive, the prolonged period through which the patients have been observed, and the probable advantage to be derived from the use of intradural therapy, may be offered as an apology for this preliminary report.

#### CONCLUSIONS

No organic disease of the central nervous system so closely resembles syphilis in its symptomatology and pathology as does multiple sclerosis.

In all probability, the lesion in insular sclerosis is of an inflammatory nature. The cellular reactions are quite similar to those of syphilis; and, with the exception of the Wassermann test, the spinal fluid exhibits changes comparable to those in the vascular and gummatous types of cerebrospinal syphilis.

Failure to demonstrate *Spirochaeta pallida*, or to secure a positive Wassermann reaction in all cases, is no proof that syphilis may not be an etiologic factor. Evidence of this nature is not infrequently wanting in tabes dorsalis, and occasionally in general paresis. A positive Wassermann reaction in multiple sclerosis does not, however, establish its specific nature, since the two affections may exist simultaneously, or else the disease is, in such instances, syphilis and not multiple sclerosis.

The therapeutic test is of no value as a diagnostic measure, since ineffectual treatment does not disprove a syphilitic factor, nor does effective therapy establish its presence. Tabes does not always respond to antisyphilitic therapy, and in general paresis the results are most discouraging. Thus, in the antisyphilitic treatment of multiple sclerosis, it may be argued that the affection is probably syphilitic; that there is a combination of the two diseases; that the intermission is spontaneous, or that the arsenical and mercurial prepa-

rations are useful drugs in the treatment of multiple sclerosis.

Although syphilis may not be an etiologic factor, there are undoubtedly clinical types of disseminated syphilis that are indistinguishable from insular sclerosis; and until the etiology of the latter disease is established, or a more acceptable form of therapy devised, the adoption of antisyphilitic treatment is worthy of consideration. Treatment is more likely to be effective if begun early, and both intravenous and intradural medication are recommended. Mercury and the iodids may also be prescribed to advantage.

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## MEDICOLEGAL APPLICATION OF HUMAN BLOOD GROUPING

### SECOND COMMUNICATION

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In 1910, von Dungern and Hirschfeld<sup>1</sup> discovered that the substances A and B present in human red blood cells (on whose presence or absence the so-called blood grouping depends) are inherited according to Mendel's law. They studied 348 persons belonging to seventy-two different families. (The families were those of university professors or members of their research institute, and each family is identified in their article.)

They observed that:

1. A never occurs in a child if not present in one of the parents; the same is true of B.
2. When one of these substances is present in both parents, it occurs in most of the children.
3. When only one parent has one of these particular substances, some of the children inherit it.
4. When a particular substance is absent from both parents, no child ever has it.

They were forced to the conclusion that Mendel's law holds for these blood qualities, on the supposition that they were dealing with two pairs of unit characters—A and Absent A, B and Absent B. They found their facts explicable only on the assumption that the presence of A is dominant over its absence (or "not A") and the presence of B over its absence (or "not B").

This conclusion was further fully supported by numerous other considerations which the analysis of their data afforded. They close by saying: "The fact that the demonstrable substances A and B in the blood cells can never appear in the children, if absent in both parents, is forensically available."

The facts of von Dungern and Hirschfeld have never been questioned. In two families on which I had previously reported, and in eight subsequently examined, there was not a single exception to their rules. When, therefore, in 1921 the subject again became of interest to me, I wrote an article in which are explicitly worked out the special conditions under which the observations of von Dungern and Hirschfeld could be applied in a medicolegal case.

In this article<sup>2</sup> the A B terminology, used by von Dungern and Hirschfeld, is translated into the four blood group terminology of Jansky, which is more

23. Perrin, M.: Sclérose en plaques et novarsenothérapie, Rev. méd. de l'Est, July 15, 1920, p. 623; abstr. Rev. neurol. 28: 330, 1921.

24. Kalberlah, F.: Etiology and Therapy of Multiple Sclerosis, Berl. klin. Wehnschr. 58: 963 (Aug. 15) 1921; abstr. Arch. Neurol. & Psychiat. 7: 128 (Jan.) 1922.

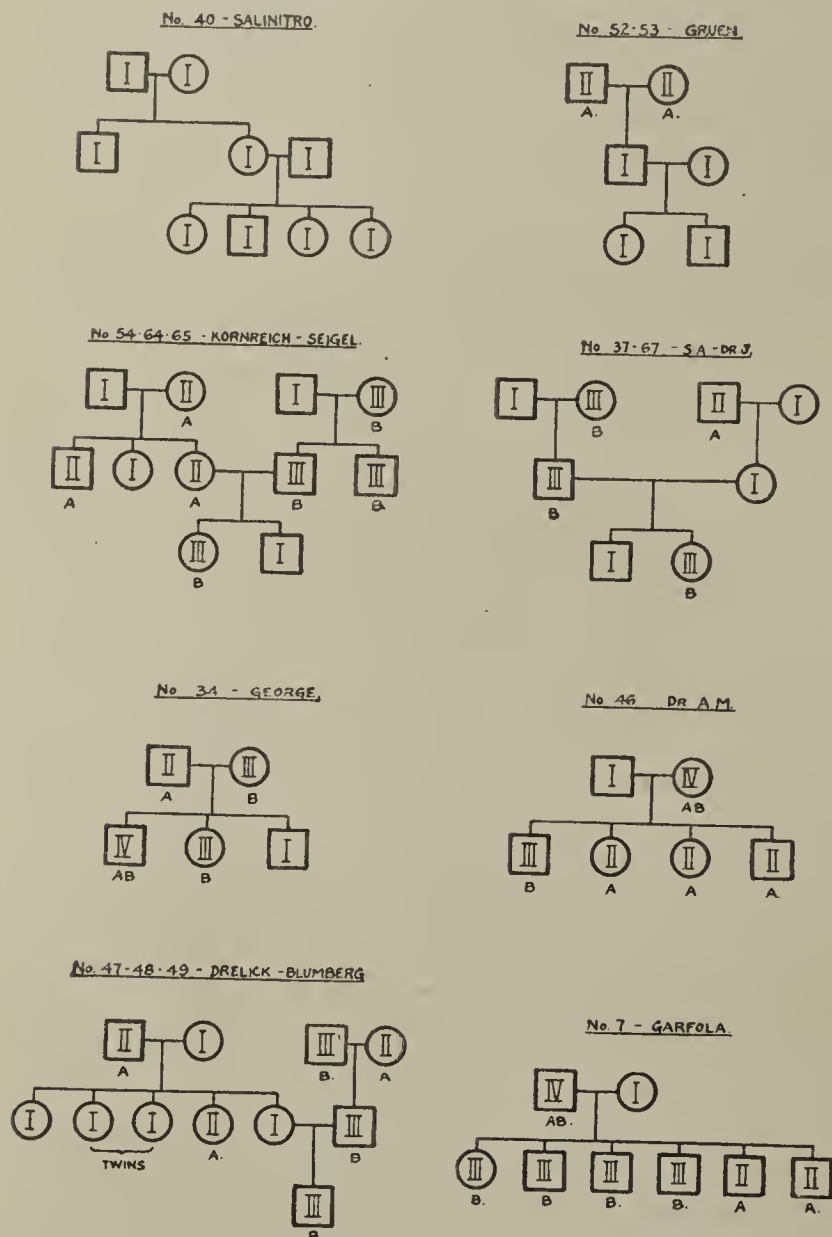
1. Von Dungern and Hirschfeld: Ztschr. f. Immunitätsforsch. Orig. 6: 284, 1910.

2. Ottenberg, Reuben: J. Immunol. 6: 363 (Sept.) 1921.



familiar to American readers and has been officially adopted<sup>3</sup> by the American Association of Immunologists, the Society of American Bacteriologists and the Association of Pathologists and Bacteriologists.<sup>4</sup> A short report<sup>5</sup> giving the conclusions of this article was published in *THE JOURNAL*, Aug. 27, 1921.

## ILLUSTRATIVE FAMILIES



In this chart of illustrative families, by an error not noted until too late for correction, the square and the circle representing father and mother in the second generation of Family 37-67 were reversed.

Early in this year there appeared an article by Dr. J. A. Buchanan.<sup>6</sup> It contained eight charts, none of which is identified as representing an actual family. From the context, however, and the opinions expressed by the author, it seems necessary to assume that some of the charts are based on actual observation. The author, however, does not present the data on which he relies in condemning as incorrect the conclusions of von Dungern and Hirschfeld and myself.

3. Isohemagglutination, *J. A. M. A.* 76: 130 (Jan. 8) 1921.

4. To refresh the memories of readers, A and B are the substances in human red cells which make them susceptible to agglutination by the human serum agglutinins  $\alpha$  and  $\beta$ .

The red cells of Group I have neither A nor B.

The red cells of Group II have A.

The red cells of Group III have B.

The red cells of Group IV have A and B.

The serum of Group I has  $\alpha$  and  $\beta$ .

The serum of Group II has  $\beta$ .

The serum of Group III has  $\alpha$ .

The serum of Group IV has neither  $\alpha$  nor  $\beta$ .

The A B terminology here used is that of von Dungern and Hirschfeld. In many textbooks the A and B are reversed, the letter B being used for Group II agglutinin and the other letters changed accordingly. The final result is the same.

5. Ottenberg, Reuben: *Medicolegal Application of Human Blood Grouping*, *J. A. M. A.* 77: 682 (Aug. 27) 1921.

6. Buchanan, J. A.: *Medicolegal Application of the Blood Group*, *J. A. M. A.* 78: 89 (Jan. 14) 1922.

As no data have been recorded<sup>7</sup> since the original publication of von Dungern and Hirschfeld, I wish to present briefly sixty-seven additional families (255 persons). Twenty-six of these families were examined in various hospitals in the last two years as a part of hospital routine, incident to blood transfusion, and the results were kindly furnished to me by the men in whose laboratories the tests had been made.<sup>8</sup> The remaining families were examined by myself. The accompanying tables represent all the families examined, numbered in their original order from one to sixty-seven.

In my previous papers, I stated that when both parents were in Group I, all the children must be in Group I. In Table 1 are all of the families examined in which both parents were in Group I.

In my previous papers, I stated that when both parents belong to Group II, there can be only two

TABLE 1.—OBSERVATIONS OF FAMILIES IN WHICH BOTH PARENTS WERE IN GROUP I

Fam- ily No.	Name	Source	Individuals	Age of Child	Group	Agglutin- able Sub- stances
14	Zanker.....	Mount Sinai Hospital	Father..... Mother..... Harold.....	..... ..... .....	I I I	— — —
17	Mazzola.....	Mount Sinai Hospital	Father..... Mother..... Samuel.....	..... ..... .....	I I I	— — —
22	MacGruder..	Vanderbilt Clinic	Father..... Mother..... Earl..... Gladys..... Ruby..... Hilda..... Baby.....	..... ..... 8 yrs. 7 yrs. 3 yrs. 2 yrs. 2 mos.	I I I I I I I	— — — — — — —
25	Liebert.....	Presbyterian Hospital	Father..... Mother..... Robert.....	..... ..... .....	I I I	— — —
26	Demos.....	Presbyterian Hospital	Father..... Mother..... Tony.....	..... ..... .....	I I I	— — —
39	Breslow.....	Aequaint- ance	Father..... Mother..... Diana.....	..... ..... 6 yrs.	I I I	— — —
40	Salinitro.....	Aequaint- ance	Maternal grandfather Maternal grandmother Their son..... Their daughter... Her husband..... Grandchildren Rose..... Lonis..... Marian..... Adele.....	..... ..... ..... ..... ..... ..... 13 yrs. 12 yrs. 7 yrs. 9 yrs.	I I I I I I I I I I	— — — — — — — — — —
42	Sokol.....	Nursery and Child's Hos- pital	Father..... Mother..... Child.....	..... ..... .....	I I I	— — —
43	Tiedemann..	Nursery and Child's Hos- pital	Father..... Mother..... Child.....	..... ..... .....	I I I	— — —
50	Wolff.....	Personal	Maternal grandfather Maternal grandmother Father..... Mother..... Robert..... James.....	..... ..... ..... ..... 6 yrs. 3 yrs.	I I I I I I	— — — — — —
53	Gruen.....	Personal (The paternal grand- parents are family 52 Table 2)	Father (Toby).... Mother..... Dorothy..... Robert.....	..... ..... 14 yrs. 8 yrs.	I I I I	— — — —
59	Klaw.....	Personal (Maternal grandparents, see No. 56, Table 5)	Father..... Mother (Alma).... Stanley.....	..... ..... 3 yrs.	I I I	— — —

possible kinds of children—Group II and Group I. In Table 2 are all families examined in which both parents were of Group II.

7. In the Helsingfors Letter (*J. A. M. A.* 77: 1668 [Nov. 19] 1921) the correspondent, describing the Congress of Northern Pathologists, held in Stockholm, August 29 and 30, says: "Jervell of Christiania had continued examinations started by von Dungern and Hirschfeld in 1910 in regard to the iso-agglutinins and the corresponding receptors, and the agglutinogens A and B. . . . He was able to confirm the earlier findings."

8. I am indebted to Dr. Humphries, Dr. Famulener, Dr. Mandlebaum and Dr. Astrowe.



Likewise, it was stated that when both parents were of Group III the children would all be III or I (Table 3).

TABLE 2.—OBSERVATIONS OF FAMILIES IN WHICH BOTH PARENTS WERE IN GROUP II

Fam- ily No.	Name	Source	Individuals	Age of Child	Group	Agglutin- able Sub- stances
4	Hatenbaek..	Nursery and Child's Hos- pital	Maternal grandmother		II	A —
			Mother.....		II	A —
			Father.....		II	A —
			Child.....	3 yrs.	I	— —
12	Sinsheimer...	Mount Sinai Hospital	Father.....		II	A —
			Mother.....		II	A —
			Joseph.....		II	A —
19	Auslander...	Aequaint- ance	Father.....		II	A —
			Mother.....		II	A —
			Donald.....		II	A —
			Brother.....		II	A —
31	Appel.....	Aequaint- ance	Father.....		II	A —
			Mother.....		II	A —
			Judith.....	15 yrs.	II	A —
33	Dr. F. ....	Aequaint- ance	Father.....		II	A —
			Mother.....		II	A —
			Arthur.....	18 yrs.	II	A —
			Harold.....	17 yrs.	II	A —
41	McLean.....	Nursery and Child's Hos- pital	Thelma.....	15 yrs.	II	A —
			Father.....		II	A —
			Mother.....		II	A —
			Girl.....	10 yrs.	II	A —
51	Schaeffer....	Nursery and Child's Hos- pital	Father.....		II	A —
			Mother.....		II	A —
			Child.....		II	A —
52	Gruen.....	Personal (Grandchildren, see No. 53, Table 1)	Father.....		II	A —
			Mother.....		II	A —
			Toby.....	33 yrs.	I	— —
62	Michaels....	Aequaint- ance	Maternal grandfather		II	A —
			Maternal grandmother		II	A —
			Moses (their son)	23 yrs.	I	— —
			Esther (their daughter).....	35 yrs.	I	— —
			Mrs. Marlow (mar- ried daughter)..		II	A —
			Mr. Marlow (her husband).....		II	A —
61	Benjamin....	Aequaint- ance	Bernie (grand- child).....	4 yrs.	II	A —
			Father.....		II	A —
			Mother.....		II	A —
			Jewel.....	19 yrs.	II	A —
			John.....	14 yrs.	II	A —

TABLE 3.—OBSERVATIONS OF FAMILIES IN WHICH BOTH PARENTS WERE IN GROUP III

Fam- ily No.	Name	Source	Individuals	Age of Child	Group	Agglutin- able Sub- stances
16	Wilson.....	Mount Sinai Hospital	Father.....		III	— B
			Mother.....		III	— B
			Thomas.....		I	— —
32	Berkelheimer	Aequaint- ance	Father.....		III	— B
			Mother.....		III	— B
			Sadie.....	24 yrs.	III	— B
			Isidor.....	23 yrs.	III	— B
55	J. H. ....	Personal	Father.....		III	— B
			Mother.....		III	— B
			Zillah.....	27 yrs.	III	— B
			Hannah.....	25 yrs.	III	— B
			Arthur.....	20 yrs.	III	— B
			Rosalind.....	16 yrs.	III	— B

In my previous papers it was stated that when the parents were of Group I and II, the children would all belong to Group I or II (Table 4).

Likewise it was stated that, when the parents were of Groups I and III, the children would all belong to one of these two groups (Table 5).

"All unions containing a member of Group IV, and unions of II and III may give rise to offspring of any of the four groups" (Table 6).

On going over the families, one sees several which bring out in a striking way the mechanism of inheritance. Thus, the Garfola family (Table 6, Family 7), in which all the children belong to groups different from those of the parents, can be explained only on von Dungern and Hirschfeld's hypothesis. The two agglu-

tinogens A and B, combined in one parent and absent from the other, appear separately in the children. The same phenomenon occurs in the Dr. A. M. family (Table 6, Family 46). The reverse occurs in the George family (Table 6, Family 34), in which the two agglutinogens, only one of which is represented in each parent, are combined in one of the children.

In the case of the Garfola family, the examination occurred in such a way that one of the tests of a

TABLE 4.—OBSERVATIONS OF FAMILIES IN WHICH PARENTS WERE IN GROUPS I AND II

Fam- ily No.	Name	Source	Individuals	Age of Child	Group	Agglutin- able Sub- stances
3	Wolf.....	Acquaint- ance	Father.....		I	— —
			Mother.....		II	A —
			Louis.....	13 yrs.	I	— —
			Joseph.....	9 yrs.	I	— —
			Beatty.....	7 yrs.	I	— —
			Samuel.....	5 yrs.	II	A —
6	Smith.....	Vanderbilt Clinic	Father.....		I	— —
			Mother.....		II	A —
			Ruth.....	5 yrs.	II	A —
			Roberta.....	2½ yrs.	II	A —
8	Pearl.....	Mount Sinai Hospital	Father.....		II	A —
			Mother.....		I	— —
			Ruth.....		II	A —
9	Block.....	Mount Sinai Hospital	Father.....		I	— —
			Mother.....		II	A —
			Mamie.....		II	A —
10	Piermont....	Mount Sinai Hospital	Father.....		I	— —
			Mother.....		II	A —
			August.....		I	— —
15	Cohen.....	Mount Sinai Hospital	Father.....		II	A —
			Mother.....		I	— —
			Harry.....		II	A —
20	Millner.....	Acquaint- ance	Father.....		II	A —
			Mother.....		I	— —
			Selma.....	11 yrs.	II	A —
			Toby.....	9 yrs.	II	A —
21	Rudd.....	St. Luke's Hospital	Father.....		II	A —
			Mother.....		I	— —
			Child.....		I	— —
27	Gambieri....	Presbyterian Hospital	Father.....		I	— —
			Mother.....		II	A —
			Maud.....	14 yrs.	II	A —
28	Pauli.....	Presbyterian Hospital	Father.....		II	A —
			Mother.....		I	— —
			Daughter.....		II	A —
			Daughter.....		II	A —
			Daughter.....		I	— —
			Daughter.....		I	— —
30	Adler.....	Acquaint- ance	Father.....		II	A —
			Mother.....		I	— —
			Daughter.....		II	A —
			Daughter.....		I	— —
29	Respoli.....	Vanderbilt Clinic	Father.....		I	— —
			Mother.....		II	A —
			Irene.....	14 yrs.	I	— —
			Amelio.....	12 yrs.	II	A —
			Concetta.....	10 yrs.	II	A —
			James.....	7 yrs.	I	— —
			Susan.....	3 yrs.	I	— —
			Son.....		I	— —
35	Silverson....	Acquaint- ance	Father.....		I	— —
			Mother.....		II	A —
			Daughter.....	12 yrs.	I	— —
			Son.....	8 yrs.	I	— —
47	Dreliak.....	Acquaint- ance (Grandchild, see No. 48, Table 5)	Father.....		II	A —
			Mother.....		I	— —
			Frieda.....	15 yrs.	I	— —
			Lillian.....	15 yrs.	I	— —
			Rebecca.....	17 yrs.	II	A —
			Sadie.....	23 yrs.	I	— —
			Mrs. Blumberg.....	27 yrs.	I	— —
64	Kornreich....	Acquaint- ance (Grandchildren, see No. 65, Table 6)	Father.....		I	— —
			Mother.....		II	A —
			Martin.....	16 yrs.	II	A —
			Lena.....	25 yrs.	I	— —
66	May.....	Personal	Mrs. F. Siegel.....	28 yrs.	II	A —
			Father.....		II	A —
			Mother.....		I	— —
			Marjorie.....	15 yrs.	I	— —
67	S. A. ....	Personal (Paternal grandparents of No. 37, Table 5)	Betty.....	10 yrs.	II	A —
			James.....	7 yrs.	I	— —
			Father.....		II	A —
			Mother.....		I	— —
			Herbert.....		I	— —

scientific theory, i. e., its ability to foretell as yet unascertained facts, could be put to a trial. I visited and tested the mother and the three youngest children in the morning, and on finding that the mother was in Group I (no A or B) and the children either in Group III (substance B) or in Group II (substance



A), was able to say definitely that the father must be in Group IV (A B), because, as the mother had neither of the two dominant substances present in the children, the father must have both of them. The blood of the father was obtained the evening of the same day and the prediction verified. Analogous predictions could have been made under suitable circumstances in many of the families.

TABLE 5.—OBSERVATIONS OF FAMILIES IN WHICH PARENTS WERE IN GROUPS I AND III

Fam- ily No.	Name	Source	Individuals	Age of Child	Group	Agglutin- able Sub- stances
5	Hearn.....	Vanderbilt Clinic	Father.....	....	III	— B
			Mother.....	....	I	— —
			Fred.....	8 yrs.	III	— B
			Vincent.....	3½ yrs.	III	— B
			Maynard.....	2½ yrs.	I	— —
11	Fuehs.....	Mount Sinai Hospital	Charles.....	1 yr.	I	— —
			Father.....	....	III	— B
			Mother.....	....	I	— —
			Jacob.....	....	I	— —
18	Dubrow.....	Mount Sinai Hospital	Father.....	....	I	— —
			Mother.....	....	III	— B
			Sidney.....	....	I	— —
23	W.B. ....	Dr. N. Rosen- thal	Father.....	....	III	— B
			Mother.....	....	I	— —
			Daughter.....	....	III	— B
			Daughter.....	....	III	— B
24	Schmitt.....	Presbyterian Hospital	Father.....	....	III	— B
			Mother.....	....	I	— —
			Child.....	....	I	— —
36	Mikulet.....	Aequaint- ance	Father.....	....	I	— —
			Mother.....	....	III	— B
			William.....	11 yrs.	I	— —
37	Dr. J. .... (Paternal grandparents No. 67, Table 4)	Personal	Maternal grandfather	....	I	— —
			Maternal grandmother	....	III	— B
			Mother, Dorothy A. (= Mrs. A.).....	....	III	— B
			Father, Herbert A.	....	I	— —
			George.....	....	I	— —
			Amy.....	3 yrs.	III	— B
38	Dr. L. S. ....	Aequaint- ance	Father.....	....	III	— B
			Mother.....	....	I	— —
			Abraham.....	3 yrs.	III	— B
48	Blumberg....	Aequaintance (Grandparents; see No. 47, Table 4 and No. 49, Table 6)	Father.....	....	III	— B
			Mother.....	....	I	— —
			Ruth.....	3 yrs.	III	— B
54	Siegel.....	Personal (Grandchildren, see No. 63, Table 6)	Father.....	....	I	— —
			Mother.....	....	III	— B
			Fred.....	30 yrs.	III	— B
			Louis.....	23 yrs.	III	— B
56	Ash.....	Personal (Daughter = mother of No. 56, Table 1)	Paternal grandfather	....	I	— —
			Paternal grandmother	....	III	— B
			Alma, daughter...	....	I	— —
			Edward, their son	....	III	— B
			Mrs. A., his wife..	....	I	— —
			Mark.....	3 yrs.	III	— B

No fact has at any time been observed by me which fails to conform to the theory of von Dungern and Hirschfeld or to the conclusions of my previous papers. It is worth pointing out that for medicolegal purposes it is not necessary to employ or even to understand the mendelian theory. One can simply state the accumulated evidence at present available (consisting of 603 persons in 139 families), thus: Substance A, which is nothing but susceptibility of the red blood corpuscles to agglutination by any Group III serum, and Substance B (susceptibility to Group II serum) never appear in a child unless present in one of the parents. From this all the inferences presented in my previous paper may be derived.

Unless Buchanan publishes his data, it will not be possible to consider his opinions critically. It is, however, necessary to discuss his paper because of the importance of correcting any mistaken impression which it may have conveyed.

Buchanan's difficulties arise primarily from omission to consider the work of previous investigators. He says:

Moss demonstrated in 1909 that three agglutinins and three agglutinogens are necessary to permit the existence of four

blood groups. The work of Moss remains uncontradicted. . . . In my investigation of the inheritance of the blood groups I have discarded the use of *a* and *b* and *A* and *B*.

As a matter of fact, the existence of *a*, *β*, *A* and *B*, first postulated by Landsteiner, the discoverer of the blood groups in 1901, has been recognized by practically all of the large number of workers in the field except Moss. The three agglutinin idea was never put forward by Moss as a fully developed theory but only as a suggestion. The facts presented by Moss in 1909 in no way contradict Landsteiner's theory, and exact confirmation of the actual existence of the two agglutinins with two corresponding agglutinogens was published in 1902 by Descatello and Sturli, in 1920 by Koeckert, in 1921 by Schutze, in 1920 by Unger, and in 1921 by Hooker and Anderson.<sup>9</sup> Indeed, the demonstration of these substances is so easy that for years it has been a class exercise in the course on immunology in the College of Physicians and Surgeons, New York, in which course I have had the pleasure of acting as assistant.

TABLE 6.—OBSERVATIONS OF FAMILIES IN WHICH THERE WERE UNIONS CONTAINING A MEMBER OF GROUP IV, OR UNIONS OF GROUPS II AND III

Fam- ily No.	Name	Source	Individuals	Age of Child	Group	Agglutin- able Sub- stances
Parents of Groups I and IV						
7	Garfola.....	Vanderbilt Clinic	Father.....	....	IV	A B
			Mother.....	....	I	— —
			Julia.....	17 yrs.	III	— B
			Daniel.....	13 yrs.	III	— B
			Michael.....	8 yrs.	III	— B
			Tony.....	6 yrs.	III	— B
			Salvator.....	5 yrs.	II	A —
			Charles.....	3 yrs.	II	A —
46	Dr. A. M. ....	Personal	Father.....	....	I	— —
			Mother.....	....	IV	A B
			Phillip.....	20 yrs.	III	— B
			Sarah.....	24 yrs.	II	A —
			Dorothy.....	22 yrs.	II	A —
			Abraham.....	26 yrs.	II	A —
			Parents of Groups II and III			
31	George.....	Vanderbilt Clinic	Father.....	....	II	A —
			Mother.....	....	III	— B
			Ormond.....	6 yrs.	IV	A B
			Lillian.....	2 yrs.	III	— B
			Herbert.....	2 mos.	I	— —
49	Blumberg....	Acquaintance (Grandchild, No. 48, Table 5)	Father.....	....	III	— B
			Mother.....	....	II	A —
			Son.....	33 yrs.	III	— B
65	Siegel.....	Acquaintance (Grandparents, No. 54, Table 5 and No. 64, Table 4)	Father (Fred)....	....	III	— B
			Mother (née Korn- reich).....	....	II	A —
			Betty.....	6 yrs.	III	— B
			Erwin.....	3 yrs.	I	— —
Parents of Groups II and IV						
2	Wisler.....	Personal	Paternal grandmother	....	III	— B
			Father.....	....	IV	A B
			Mother.....	....	II	A —
			Son.....	6 yrs.	II	A —
			Son.....	3 yrs.	IV	A B
13	Wolfson.....	Mount Sinai Hospital	Father.....	....	II	A —
			Mother.....	....	IV	A B
			Lilly.....	....	II	A —
44	Leichterman	Nursery and Child's Hos- pital	Father.....	....	II	A —
			Mother.....	....	IV	A B
			Child.....	....	IV	A B
45	Lapidus.....	Mount Sinai Hospital	Father.....	....	IV	A B
			Mother.....	....	II	A —
			Dorothy.....	....	II	A —
60	Schaap.....	Acquaint- ance	Father.....	....	II	A —
			Mother.....	....	IV	A B
			Daughter.....	9 yrs.	II	A —
			Parents of Groups III and IV			
1	Hinchliffe....	Personal	Father.....	....	IV	A B
			Mother.....	....	III	— B
			Joseph.....	4 yrs.	IV	A B

Buchanan's opinions can only be explained as due to a misinterpretation of the work of von Dungern and Hirschfeld. Neither they nor I ever implied that "the blood group of the child must be evident in

9. Hooker and Anderson: J. Immunol. 6:419 (Nov.) 1921; an experimental study so complete that it will probably remain the con-  
clusive word on the subject.



the parents." On the contrary, their explanation exactly and completely accounts for those instances (of which they present a number and of which seventeen others occur in my table) in which the child's group is different from that of either parent. Inspection of Buchanan's charts (his Figures 1 and 8), on the basis of which he claims that a child would have been falsely declared illegitimate, shows that such would not have been the case; his instances definitely belong, according to the observations of von Dungern and Hirschfeld as tabulated by me, among those in which no conclusions as to legitimacy can be made.

Students of genetics do not agree with him that the character of inheritance can never be ascertained without a study of three generations. In the investigations in which the mechanism of inheritance was originally discovered by Mendel, it was necessary to observe three generations. But since the nature of mendelian dominance and recessiveness has been understood there have been numerous instances in which two generations have given all the possible combinations, and it has been easy to identify the mendelian nature of an inherited character by inspection.<sup>10</sup> However, a number of three generation families are presented herewith, and all bear out the previous conclusions, which had been based principally on two generation data.

#### CONCLUSION

The facts submitted fully support von Dungern and Hirschfeld's conception of the heredity of the blood groups, and its medicolegal application.

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## QUINIDIN IN THE TREATMENT OF THE CARDIAC IRREGULARITIES \*

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Since Frey<sup>1</sup> discovered the remarkable action of quinidin on auricular fibrillation in 1918, more than 300 reported cases have been treated by this drug. According to the available literature, 241 cases have been reported in foreign journals, and ninety-two in this country. In slightly more than 50 per cent., the sinus rhythm has been restored. In most instances, the normal auricular mechanism was of short duration. So far, the action of quinidin on the other types of cardiac irregularities has apparently received very little attention. Von Bergmann<sup>2</sup> and others observed that auricular premature contractions frequently appeared following the establishment of the sinus rhythm by quinidin. The former believed that further administration of quinidin eliminated or decreased the frequency of the premature contractions. Boden and Neukirk<sup>3</sup> reported encouraging results in the treatment of premature contractions and simple paroxysmal tachycardia with quinidin. White, Marvin and Burwell<sup>4</sup> have recently mentioned one instance of ven-

tricular premature contraction in which the irregularity disappeared following the administration of small doses of quinidin and recurred soon after the medication was stopped. These observations were apparently repeated several times with the same results.

The present report is based on the treatment of fifteen cases of auricular fibrillations, twenty of premature contractions and two of simple paroxysmal tachycardia with quinidin sulphate. An initial dose of 0.2 gm. (3 grains) was given to determine whether or not there was susceptibility to the drug. In the twelve instances of well established auricular fibrillation, the dose was increased to 0.4 gm. (6 grains), three times a day. In three, a few doses of 0.5 gm. (7½ grains) were given. In the six patients in whom the sinus rhythm was restored, the medication was stopped in three and decreased to 0.2 gm. twice a day in the remaining three. The quinidin was discontinued in those who were apparently refractory to the treatment after a period of from five to seven days. In two, toxic symptoms appeared on the fifth and seventh days, respectively. The three patients with paroxysmal auricular fibrillation, those with premature contractions and the two with simple paroxysmal tachycardia received in the beginning 0.2 gm., three times a day. This was afterward reduced to twice a day and was later discontinued in some instances for intervals of from ten days to three weeks.

#### AURICULAR FIBRILLATION

In the twelve with the well established auricular fibrillation, the heart was well compensated. Each patient had had one or more attacks of cardiac failure. One had recently recovered from a cardiac upset. All had been taking digitalis. Seven had mitral stenosis and regurgitation. One had, in addition, hyperthyroidism. In three of these, the transverse diameter of the heart was markedly increased. One patient came to the hospital because of exophthalmic goiter. In five, the basic pathologic condition was apparently arteriosclerosis. Three of these had hypertension. In none of these five was the heart much increased in size. The duration of the auricular fibrillation was known in four instances to be one and one-half years, and six, four and two months, respectively. Three of these patients had paroxysms of auricular fibrillation before the condition became permanently established. One had attacks at irregular intervals over a period of three years, and one attack was observed to last five days.

In six, the sinus rhythm was restored. One of these had exophthalmic goiter and was operated on six weeks after the normal auricular mechanism was restored. This patient maintained a sinus rhythm for more than eight months. Recently the absolute irregularity appeared again. Quinidin was administered in 5 grain (0.3 gm.) doses after meals, and the heart became regular again on the second day. In another the heart had remained regular on 0.2 gm. doses once and twice a day. At one time the medication was discontinued for about two weeks. One patient passed from observation ten days after the sinus rhythm was restored. In the remaining three the duration of the sinus rhythm was only a few days, even though in two the quinidin was continued in 0.2 gm. doses twice a day. Three of those that were apparently refractory to quinidin had very large hearts. One of these was observed to have a sinus rhythm for a period of about twenty-four hours while on digitalis. It was this observation that encouraged the use of quinidin in this instance. One of the other patients that failed to

10. The only combination of parents absent from the data of von Dungern and Hirschfeld and myself is IV IV, the rarest of all possible combinations.

\* From the Medical Department of Rush Medical College and the Presbyterian Hospital.

1. Frey, W.: Berl. klin. Wehnschr. 55: 417, 450, 1918; Deutsch. Arch. f. klin. Med. 136: 70, 1921.

2. Von Bergmann, G.: München. med. Wehnschr. 66: 705, 1919.

3. Boden and Neukirk: Deutsch. Arch. f. klin. Med. 136: 181 (June) 1921.

4. White, P. D.; Marvin, H. M., and Burwell, C. S.: Action of Quinidin Sulphate in Heart Disease to Abolish Circus Movement of Auricular Flutter and Fibrillation, Boston M. & S. J. 185: 647 (Dec. 1) 1921.



respond to quinidin had had an irregular heart only four months. The heart was not large, and compensation was apparently well established. The medication was continued until toxic symptoms appeared without much electrocardiographic change in the auricular mechanism.

Two patients seemed to be definitely improved by the quinidin treatment. One of these was a very nervous individual who worried a great deal about the irregular action of the heart. She described in detail the sensation of comfort that appeared with the onset of the sinus rhythm. The other four were apparently not very much impressed with the return of the regular action of the heart. In one of these the sinus rhythm was restored on three different occasions. In one the symptoms of cardiac failure developed. The quinidin was discontinued and the compensation was restored by digitalis. This was the only instance in which the quinidin was definitely harmful to the patient. In those in whom there were toxic manifestations, as a feeling of fulness in the head and ringing in the ears, the symptoms disappeared soon after the drug was stopped.

#### PAROXYSMAL AURICULAR FIBRILLATION

The three patients with paroxysmal auricular fibrillation had no other symptoms of cardiac disease. Two of these were more than 60 years old. In one the attacks had appeared at irregular intervals over a period of about eight years. The last few years they occurred on the average of three or four times a month, and lasted from one-half hour to twenty-four hours. In the other, the attack of irregular heart action was first noticed three years before. She had had as many as three attacks a week, and had been free at times for more than a month. The youngest of the three was 38 years old. His trouble began four months before, and prior to the beginning of the quinidin treatment he had had four attacks within two weeks. The last two had no further trouble since they began taking quinidin. One is now getting 0.2 gm. twice a day, and the other the same dose after the evening meal. The first was given 0.2 gm. three times a day over a period of several weeks without apparently any influence on the frequency of the attacks.

#### PAROXYSMAL TACHYCARDIA

The two patients with paroxysmal tachycardia were 10 and 30 years of age. The former was a blue baby and had a very definite congenital defect of the heart. She is, however, a well developed child and apparently has a good cardiac reserve. The attacks of rapid regular heart action were first noticed by the mother four years ago. They return at one and two month intervals. She has taken  $1\frac{1}{2}$  grains (0.1 gm.) of quinidin once a day for the last six weeks and has been free from attacks. In this instance there has hardly been sufficient time to determine the value of the treatment. In the second patient the paroxysmal tachycardia began when she was 11 years old. In later years the trouble has returned as often as two or three times a month, and each time incapacitates her for several days. She has had one recurrence of the condition in the last seven months, and this was after she had discontinued the quinidin for almost three weeks.

#### PREMATURE CONTRACTIONS

The twenty patients with premature contractions sought medical aid because of the irregular action of the heart. The duration of the trouble varied from

a few months to three years. During this time the cardiac disturbance was in the majority a daily occurrence. During the examination of these patients it was particularly noticed that they were conscious of the appearance of every premature contraction. In only one instance was there definite evidence of organic heart disease, and this patient had no symptoms of cardiac weakness. In the sixteen in which we were able to determine the type of premature contraction, twelve were ventricular and four auricular.

After the initial examination, these patients were instructed to take 0.2 gm. of quinidin after each meal and return in one week. All except three were definitely sure that they were very much improved by the medicine. Ten reported that the heart had been regular for the first time in months. Seven had an occasional premature contraction but much less disturbance than they had had during any week since the onset of the trouble. Prior to the treatment with quinidin, three were disturbed during the night by the skipping of the heart. One had been awakened fairly regularly at 2 and 3 o'clock in the morning. In another, the loss of sleep had been so great that the general health was impaired. These patients are now able to sleep the night through. One girl had numerous ventricular premature contractions. They would frequently replace every second normal contraction for periods of two to three minutes. She was apparently conscious of the onset of the quinidin action. She stated that, about two hours after she took the medicine, the heart became regular and remained so for from five to six hours. In the further treatment the dose has been varied to suit the individual. In most instances the number of doses has been reduced to two a day, and in some to one a day. In each, the capsule has been given as far as possible a couple of hours before the anticipated time for the appearance of the greatest number of skipped beats. In some, the premature beats occurred fairly regularly after meals, in others after retiring for the night, while in others they might appear any time during the day. Sufficient time has not elapsed to determine the ultimate outcome in these patients. In one instance the number of doses had been reduced to two a day and later one a day, and finally was withdrawn for a period of ten days. At this time he carried a package weighing about 75 pounds (34 kg.) a mile (1.6 kilometers). At his destination he was very tired and nervous, and noticed a return of the irregular action of the heart. Prior to this upset the patient had in a large measure recovered from his former nervousness and had gained 11 pounds (5 kg.) in weight. The premature contractions were again eliminated by the quinidin. Another patient had gone along nicely for four weeks on two doses a day, and thought he was cured. He became greatly excited one day, and the heart skipped at frequent intervals for two periods of about an hour. He became nervous again and did not sleep for two nights. He has, however, since reported that he is getting along well. Further observations will be made to determine if possible the limitations of the treatment of premature contractions with quinidin. It is to be recalled that this type of irregularity is especially apt to be a transient condition, and any such study must be made in carefully selected cases.

#### COMMENT

The scope of the quinidin treatment of auricular fibrillation has not been determined. So far, however,



only a very small percentage of the patients have apparently been benefited. According to the available literature, 321 patients have been treated. In 48 per cent., the sinus rhythm was not restored. The condition of these could hardly have been improved, and some were actually harmed by the appearance of the symptoms and signs of cardiac failure. In the remaining 52 per cent. in which the sinus rhythm was restored, the normal auricular mechanism was transient in most instances. It would thus seem that even in this group the end results from the standpoint of the patient were, on the whole, unsatisfactory. The results will perhaps be better as more is known in regard to the limitation of the action of quinidin. It may be advisable to continue the medication in small doses after the sinus rhythm is restored. This method was advised by Frey,<sup>1</sup> and apparently has been employed successfully by Wolferth.<sup>5</sup> This would seem to be the logical procedure, since quinidin, according to Weichman,<sup>6</sup> is eliminated rapidly and auricular fibrillation is known to be a recurring condition. The success in maintaining a sinus rhythm, even though the quinidin is continued in small doses, will perhaps depend on the functional condition of the heart. Quinidin has a depressing action on the cardiac musculature, and thus any improvement in the general condition of the heart is apparently due to the elimination of the extra load imposed by the abnormal auricular action. This may be sufficient in some to permit the heart to regain a satisfactory working capacity. In others, however, cardiac failure will be easily produced which will in turn favor the return of the auricular fibrillation. It would thus seem that the results might be improved by the employment coincidentally with the quinidin of some drug that would act favorably on the cardiac musculature. Frey advised against the use of digitalis. He concluded that it possibly promoted auricular fibrillation. Later investigators have in general apparently followed his recommendation. Schott<sup>7</sup> noted that quinidin produced heart block in the experimental animal, and suggested that digitalis should not be employed with the former because of the similar action of these two drugs on the conduction system. Hewlitt and Sweeney<sup>8</sup> observed the Stokes-Adams syndrome in one of their patients who was taking digitalis and quinidin. Frey has advised the use of caffeine and possibly strychnin. It would seem that these drugs should be more generally employed until their value in this connection has been determined.

The results of the quinidin treatment of auricular fibrillation will undoubtedly be further improved by a more careful selection of the patients. So far, all types have been treated. It is apparently generally agreed by the various workers that those with long standing auricular fibrillation in whom the condition is associated with advanced cardiac pathologic changes are unfavorable subjects. Isolated instances of this type have been reported in which good results were obtained. Von Bergmann's case has frequently been cited in this connection. In a vast majority, however, the sinus rhythm has not been restored. While the prospects for the restoration and maintenance of a sinus rhythm are far better in those in whom the

absolute irregularity is of recent origin and associated with a good cardiac musculature, the results even in this class cannot always be predicted. It will be recalled that in one of our patients in whom the duration of the auricular fibrillation was only three months, with compensation well established and very little demonstrable increase in the cardiac dulness, the quinidin was given until toxic symptoms appeared without much electrocardiographic change in the auricular mechanism. In another, the frequency of paroxysmal auricular fibrillation was not diminished by the administration of 0.2 gm. of quinidin three times a day. Lewis<sup>9</sup> has apparently satisfactorily explained why the normal auricular mechanism is not restored in some. He points out that the most striking action of quinidin is a prolongation of the refractory period. This shortens the gap between the crest and the wake of the circus movement of the auricles, and thereby finally terminates the abnormal auricular action. He further states that quinidin, in addition to prolonging the refractory period, delays the conduction period. The latter action opposes the former from the standpoint of terminating the auricular fibrillation. Thus, in those in whom the action on the conduction period predominates, it is impossible to restore the sinus rhythm.

The daily occurrence of premature contractions over a long period of time frequently becomes a serious matter to the patient. Some become highly nervous, lose their appetite and have difficulty in sleeping. This may progress to the point at which the general health becomes impaired. The treatment of this disorder has in many been very unsatisfactory. The majority of our patients had tried various remedies without relief. The regulation of habits, the correction of gastrointestinal conditions and the reduction or elimination of tobacco have been successful in some instances. No drugs, however, have apparently influenced the prevalence of this irregularity. Quinidin promises to be a valuable remedy. In ten of our twenty patients, the irregularity was eliminated by quinidin. In seven, the frequency was diminished. Boden and Neukirk<sup>3</sup> reported favorable results in eighteen of the twenty-two patients treated. White, Marvin and Burwell<sup>4</sup> have recently mentioned one instance in which ventricular premature contractions disappeared following the administration of quinidin. The question may be raised that the premature beat is likely to be a transient condition, and thus the value of any therapeutic measure difficult to estimate. This possible objection was considered in selecting our cases. It will be recalled that these people had in most instances a daily recurrence of the irregularity over periods varying from three months to three years. There has not been sufficient time to determine the ultimate results in our patients. In some, the condition will probably return after the quinidin is discontinued. These will, however, profit by the treatment in that they will perhaps have been tided over a nervous period.

The mechanism of premature contraction and that of simple paroxysmal tachycardia are similar. Any medication that acts favorably on the former might thus be of value in the latter. Boden and Neukirk<sup>3</sup> reported encouraging results in four of six patients. In one of our two, the frequency of the attacks was definitely diminished. The treatment of this condi-

5. Wolferth, C. C.: Observations on the Treatment of Auricular Fibrillation by Quinidin Sulphate, *Am. J. M. Sc.* **142**: 812 (Dec.) 1921.

6. Weichman, quoted by Wolferth (Footnote 5).

7. Schott: *Deutsch. Arch. f. klin. Med.* **134**: 208, 1920.

8. Hewlitt, A. W., and Sweeney, J. P.: The Quinidin Treatment of Auricular Fibrillation, *J. A. M. A.* **77**: 1793 (Dec. 3) 1921.

9. Lewis, Drury, Iliescu and Weed: The Manner in Which Quinidin Acts in Auricular Fibrillation, *Brit. M. J.* **2**: 514 (Oct. 1) 1921.



tion by other methods has been so unsatisfactory that quinidin deserves further investigation.

## SUMMARY

1. Twelve patients with permanently established auricular fibrillation were treated with quinidin sulphate. In six, the sinus rhythm was restored. In three, the duration of the normal auricular mechanism was transient. One passed from observation ten days after the cardiac rhythm became normal. The remaining two have maintained a sinus rhythm two and one-half and eight months, respectively. The former has taken 0.2 gm. doses of quinidin once and twice a day most of the time. The latter had an exophthalmic goiter, and was operated on about six weeks after the sinus rhythm was restored. The goiter no doubt aggravated the cardiac condition, and the removal of this exciting factor was perhaps partially responsible for the success of the quinidin.

2. Three patients with paroxysmal auricular fibrillation were treated with quinidin. Two of these have had no further attacks. The remaining one took 0.2 gm. of quinidin after meals over a period of several weeks without apparently influencing the frequency of the condition.

3. The treatment was most successful in those in whom the auricular fibrillation was of short duration and associated with a good cardiac musculature. In this group, however, the results could not always be predicted.

4. The results of the quinidin treatment of auricular fibrillation from the standpoint of improving the general cardiac condition of the patient have, on the whole, been unsatisfactory. The results will undoubtedly be more satisfactory in carefully selected patients. They will perhaps be better as more is known in regard to the limitations of the action of quinidin. It would also seem that the results might further be improved by the employment of drugs that have a favorable action on the cardiac musculature, provided the former does not counteract the action of the latter in maintaining a sinus rhythm.

5. Twenty patients with premature contractions were treated with quinidin. Seventeen reported that they were markedly improved by the treatment. In ten, the irregularity was apparently eliminated. In seven, the frequency of the condition was diminished.

6. Two patients with simple paroxysmal tachycardia were treated with quinidin. One of these was definitely improved.

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## ACUTE CONDITIONS IN THE ABDOMEN\*

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By the term "acute conditions in the abdomen," often incorrectly referred to as "acute abdomen," is meant the acute expression, or manifestation, of a chronic pathologic condition within the abdomen which requires the immediate consideration of the physician and the intervention of the surgeon, and usually prompt operation. It results from a variety of diseased conditions with which surgeons are, doubtless, familiar.

The most common causes are acute infections of the appendix and gallbladder; perforation of duodenal, gastric, peptic and typhoid ulcers; intestinal obstruction before and after operation, and acute dilatation of the stomach following operation.

In any view of the subject, diagnosis is essential and of the first importance. Superficial investigation of histories and records, indifferent examination of patients, and the exclusive pursuit of the routine procedures of the operating room do not, of themselves, stimulate the scientific spirit, diagnostic inquiry and individual initiative. The art of diagnosis is not the product of the laboratory, but of the sickroom.

Anamnesis seems to have become a lost art as the instruments for a more scientific and accurate solution of the problems which confront and embarrass us have been developed and come to occupy such a deservedly conspicuous place in the study and evolution of disease—not that I underestimate the value of any equipment that is so necessary to the perfection of our work; but I also realize the dangers in any specialism which is both narrow and exclusive and hinders the free exercise of the faculty of observation in the clinician.

These acute conditions are common, and in many of the cases with which the surgeon has to deal the history is not satisfactory. Quick decision and intervention are necessary to the patient's welfare. The physician or surgeon who is in the habit of investigating histories and analyzing the signs and symptoms which differentiate disease, and who makes a careful examination of the present condition of the patient, will more certainly adjust his conclusion to the facts and his procedure to the best interest of the patient, than the one who rushes to the laboratory and roentgen-ray establishments and expects these accomplished students in scientific specialism not only to make the diagnosis but also to direct the treatment. I agree with those who consider the laboratory of little or no value in the diagnosis and treatment of these acute abdominal conditions.

The differential diagnosis is of such importance as to demand immediate consideration of all obtainable facts in the clinical history.

Death is due to septic peritonitis, the prevention and treatment of which depend on prompt operation.

We appreciate that bile secretions and those of the stomach and duodenum contain no pathogenic bacteria in health, but the pathologic condition resulting in gangrene and perforation leads rapidly to local and diffuse septic peritonitis.

There are two conditions in abdominal surgery which admit of no operative delay even in the presence of shock; these are hemorrhage and perforation. The condition and environment of each patient will, as a

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**Child Welfare Campaign.**—The Children's Bureau, Washington, D. C., recently inaugurated a campaign in Porto Rico for weighing and measuring of babies and teaching proper nutrition, and establishing prenatal and baby clinics, Little Mothers' Leagues and other child welfare activities, in connection with a committee, consisting of the managing director and secretary of the National Committee for the Prevention of Blindness, who studied conditions and made recommendations looking to the prevention of blindness and deterioration of sight, and to the education of blind children and those of seriously defective sight. Dr. Fernós Isern, president of the Porto Rico Association for the Blind, formed committees all over the island to take charge of local arrangements, with the assistance of Dr. W. F. Lippitt, insular commissioner of health. Conferences were held with the leading citizens of each community regarding the problem of sight saving; meetings were held in the moving picture houses, with addresses in both Spanish and English, and films were shown presenting the various activities of the work.



rule, determine the operative procedure and the form and extent of anesthesia. The symptoms of perforation are pain, rapid pulse, some degree of shock, muscle rigidity, abdominal distention and vomiting. With marked and persistent distention, muscular rigidity disappears, and consequently ceases to be of value in the diagnosis. It is just such cases, when seen for the first time, that give added interest and value to the clinical history.

Surgeons may differ as to the best time for operation in certain acute and delayed cases. Impressed with the idea that starvation and the salt water rectal drip will hold in abeyance the progress of the disease, they counsel delay, in the hope that a more auspicious hour will arrive when operation will promise a better result. That hour frequently does not arrive. This procedure was, if it is not still, a popular fad with some physicians and surgeons, which to my mind admits of no satisfactory defense. In my opinion, the delay increases the mortality. In general septic peritonitis, death is inevitable without operation; to delay it insures additional complications, and makes operation more difficult and recovery more doubtful.

The method of choice is to operate at the earliest opportunity in one or more dependent positions, if necessary irrigate with warm salt solution or any mild antiseptic, and drain. Adhesions and encapsulation prevent irrigation and drainage of the peritoneal cavity, usually for more than thirty-six hours. Many reported recoveries in diffuse peritonitis are in reality only localized, or are encapsulated abscesses.

Only in exceptional cases should there be any doubt as to the importance and advisability of excising the focus of infection. In septic peritonitis, leukocytosis cannot usually be depended on to combat the evil successfully. Drainage is necessary, and if the primary source of infection is not removed, convalescence is delayed, drainage prolonged, and recovery rendered more doubtful.

Some surgeons still use the gauze pack in severe localized infections; under such conditions, porous material that will not adhere to the tissues should underlie the gauze. This form of drainage is justifiable only in bad cases due to the too long delay of an urgent operation. The gauze should be removed in twenty-four or thirty-six hours, and usually should not be reapplied. After saturation, gauze does not drain, and it then becomes a source of infection. In mild cases of localized infection, with seropus, a wick drain for from twenty-four to thirty-six hours is adequate and often renders reopening of the wound unnecessary; but in severer infections the rubber tube or glass drain answers the purpose better. It should be insisted that the tube should be changed often and discarded as soon as possible, for it becomes a source of infection when retained too long.

Gangrenous gallbladders and usually those of long standing infection should be removed. If the walls are elastic and not seriously or much involved, drainage will be efficient. If there are stones in the ducts it may be more desirable to do a cholecystotomy and drain. Many small stones are not infrequently overlooked and, should cystectomy be performed, the changed topography and adhesions increase the difficulties of a secondary operation. Besides, drainage has an immediately good effect on the cholemia and condition of the liver, and improves the pancreatic condition, this organ being so commonly diseased through primary infection of gallbladder and ducts. Observations

recently made show that when the gallbladder has been removed the ducts enlarge to such an extent as to make a reservoir undoubtedly for the storage of bile. This would show that bile, like the chyle and gastric juices, is chiefly discharged only during digestion, and its storage is a necessary and wise physiologic provision.

Unless the pathologic condition of the bladder is such as to require, without question, its removal, we should use more circumspection and discrimination in the matter, even if this is not in accord with the fashion of the day.

Recently, Muller and Ravidin<sup>1</sup> reported fifteen cases of perforation of gastric and duodenal ulcers, with favorable results from prompt operation, and noted as interesting that four of the cases elicited no history of ulceration previous to the perforation, especially in the absence of pain. These are designated atypical cases, there being a sensible diminution instead of increase of the hydrochloric acid. My credulity is not easily reconciled to the statement that long standing ulcers progress to perforation without any previous evidence of disease. It reminds one of the many cases of acute appendicitis in which the patient professes no knowledge of any previous illness, and yet careful investigation reveals evidence which was unappreciated by the patient, but which was conclusive to the physician.

The subject should not be dismissed without brief consideration of intestinal obstruction—dynamic and adynamic—the former due chiefly to adhesions, volvulus and the pressure of tumors, usually carcinomas of the large bowel. Ordinary mechanical obstruction is attended with pain and vigorous peristalsis above the seat of obstruction, increased pulse rate but no elevation of temperature, and with vomiting which becomes fecal. The history of these cases is absolutely necessary to an intelligent opinion. Immediate operation gives relief. If operation is delayed, complications will soon ensue and enterostomy or resection and anastomosis may be necessary as a final life saving measure.

In septic ileus there is intestinal paralysis; increased, though at times subnormal temperature; fast pulse; vomiting, not fecal, and muscular rigidity. Persistent distention in this condition should be regarded as an unfavorable omen. Ileus, before operation, suggests delay that may or may not have been avoidable. In these aggravated cases it would, in my opinion, be a wise precautionary measure to include enterostomy in the primary operation. It is perhaps unnecessary to state that in some cases the condition seems so hopeless that it would be useless to undertake a serious operation; yet one occasionally records a recovery from a desperate situation by operation. There are also conditions, especially of the heart, lungs and kidneys, in which operation is contraindicated.

I have refrained from any attempted exposition of technic or operative details, feeling assured that every good surgeon's duty and inclination is to meet the indications in individual cases in accordance with his own judgment and the recognized principles of modern surgery.

When in grave doubt as to the condition and the procedure to adopt in a given case, we feel compelled to explore the abdomen, which may be of great service in some cases and of no value in others. With increas-

1. Muller and Ravidin: *Ann. Surg.*, September, 1921.



ing knowledge and a greater degree of perfection in diagnostic acumen, the exploratory operation will not frequently be deemed a necessity.

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## URTICARIA FROM HABITUAL USE OF PHENOLPHTHALEIN

REPORT OF A CASE \*

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AND

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The popularity and general employment of phenolphthalein as a laxative, both frankly prescribed as such by physicians and incorporated in numerous proprietary remedies, determines it to be a chemical which has at one time or another been used in a great number of cases. It would seem remarkable, therefore, if there were not occasionally individuals who, through some idiosyncrasy, react strongly toward it and develop dermatoses. As constipation is frequently a chronic derangement, and as phenolphthalein possesses only a transient laxative effect, it may be assumed that in many of these cases the drug has been taken habitually over long periods—in the vast majority of instances with satisfactory results. From time to time, we have been apprised, in conversing with other dermatologists, of eczematoïd eruptions ascribed to the ingestion of phenolphthalein, but have not observed any outbreak known to be from such a cause. A routine study of such cases from this standpoint has not been made, however.

The literature on the subject is scanty and does not bear out the oral communications referred to. An eruption nearly uniform in type occurred in the cases of Abramowitz,<sup>1</sup> Fox,<sup>2</sup> Wise,<sup>3</sup> Scheer<sup>4</sup> and Ayres.<sup>5</sup> The lesions were of a sort most closely resembling erythema perstans—wheal-like, but existing unchanged for weeks or months and associated with annoying itching. Scheer's case paralleled ours in one particular, as it had its inception following the administration of a biologic product—in that instance diphtheria antitoxin. Rosen's<sup>6</sup> case exhibited a vesiculopapular eruption involving the entire front of the chest and abdomen. Ormsby<sup>7</sup> states that phenolphthalein occasionally produces erythematous plaques followed by pigmentation. Silberstein<sup>8</sup> took a single dose of a phenolphthalein purgative, and plaques developed on his tongue suggesting cancer. A year later another dose caused a painful stomatitis and herpes on the genitals. A woman consulted him for lassitude, anorexia and conjunctival ecchymosis, the result of taking seven tablets of a phenolphthalein preparation in three days. Rosenstein<sup>9</sup> stated that a woman patient of his had been

taking a proprietary pill as an antiflat remedy for several weeks. She lost weight at the expense of her health, could not get rid of a diarrhea, and was finally discovered to have a severe hemorrhagic nephritis. The pills in question contained phenolphthalein, although this ingredient was not mentioned on the label. No reference to a skin eruption was made. After a week's illness she completely recovered.

The last two references are somewhat unconvincing. The implication of phenolphthalein is not clearly proved.

Macleod,<sup>10</sup> Stelwagon and Gaskill<sup>11</sup> and other recent authors do not mention the drug as a cause of dermatitis medicamentosa.

It seems unnecessary to review the formula and history of the drug, its pharmacology and therapeutic effect. One may be referred to Ayres' article in which those subjects, together with pertinent cases, are well set forth. His own case was carefully studied. In that writer's list of numerous proprietaries containing phenolphthalein, some forty-four in all, we do not find the preparation known as carbolax with cocoa, used by our patient. The formula was not known by the American Medical Association, and we did not have the preparation analyzed. The label on the bottle bore the inscription "Phenolphthalein 1 gr. Cocoa q. s."

In the case which we report, constantly recurring attacks of hives were noted. These occurred after the ingestion of phenolphthalein; but the condition, until the history was more carefully reviewed, was thought to be a chronic urticaria from some undetermined food factor. This form of lesion has been reported as the result of administration of potassium iodid, chloral, quinin, santonin, copaiba, sodium salicylate, turpentine, opium, alcohol, belladonna, other coal-tar derivatives, and a number of less important drugs to susceptible individuals; but, so far as can be ascertained, phenolphthalein has never been included among their number. Recognition of the fact that it can cause such an outbreak may, with pointed questioning, clear up the etiology of other cases of presumably chronic urticaria of unknown origin.

### REPORT OF CASE

Miss H. C. L., a private patient, a highly intelligent white woman of 40, first seen by us, Oct. 29, 1921, had been chronically constipated since childhood. No outbreak had ever been present on her skin with the exception of six or eight attacks of urticaria which were invariably traceable to one source—cantaloup. The last occurrence of hives from this factor was a number of years ago, as she learned to avoid the cause. Her previous medical history was unenlightening. After trying many different laxatives over a period of years without finding one that was entirely satisfactory to her, in 1918 she began the employment of a proprietary tablet with excellent effect in every way. For two years she took one of these tablets virtually every night. About this time the patient received three typhoid inoculations at weekly intervals without any reaction, cutaneous or otherwise, noted from them. In 1920 she again received typhoid prophylactic injections. Following the third inoculation, wheals broke out. The arms and neck were favorite sites, but no region was exempt. These persisted for one year, appearing anew almost every day. They were nearly always large, frequently double-palm sized or larger. Individual lesions never lasted over twenty-four hours and disappeared without leaving a trace. They were rounded in outline, frequently irregular in shape, and invariably with a rose-colored or reddish margin to the elevated whitish plaque. In other words, they were typical wheals, often of the giant variety. Itching was very disturb-

\* From the Department of Dermatology, Jefferson Medical College.

1. Abramowitz, E. W.: *J. Cutan. Dis.* **36**: 11 (Jan.) 1918.

2. Fox, Howard: *J. Cutan. Dis.* **36**: 252 (April) 1918. (Same case as the preceding.)

3. Wise, Fred: Phenolphthalein Eruption, *Arch. Dermat. & Syph.* **3**: 200 (Feb.) 1921.

4. Scheer: Dermatitis Medicamentosa, *Arch. Dermat. & Syph.* **3**: 704 (May) 1921.

5. Ayres, Samuel, Jr.: Phenolphthalein Dermatitis, *J. A. M. A.* **77**: 1722 (Nov. 26) 1921.

6. Rosen, I.: Dermatitis Medicamentosa, *Arch. Dermat. & Syph.* **1**: 355 (March) 1920.

7. Ormsby, Oliver: *Diseases of the Skin*, Philadelphia, Lea & Febiger, 1921.

8. Silberstein, L.: By-Effects of Phenolphthalein, *Therap. Monatsh.* **34**: 306 (June 1) 1920.

9. Rosenstein, P.: The Abuse of Phenolphthalein, *München. med. Wchenschr.* **67**: 263 (Feb. 27) 1920.

10. Macleod, J. M. H.: *Diseases of the Skin*, New York, P. B. Hoeber, 1921.

11. Stelwagon, H. W., and Gaskill, H. K.: *Diseases of the Skin*, Philadelphia, W. B. Saunders Company, 1921.



ing. The eruption did not come on immediately after taking the drug, as in Abramowitz' case. The tablet was taken at night, and the wheals were present the next morning. No medicine but the tablets referred to was regularly taken during this time, but the laxative was continued throughout this third year. A general physical examination revealed nothing abnormal. The urine was negative. Food tests by the intradermal method, injections into the skin of the proteins of seventeen foods commonly used by the patient, were of little diagnostic value. Beef + was noted, wheat + and lamb and cheese  $\pm$ . An eruption corresponding to the foregoing description was noted on the neck, chest and arms. There was no scale on the surface, and no traces of former outbreaks were seen.

On our advice the laxative tablets were discontinued, and the hives gradually disappeared, the last being noted about ten days after cessation of the drug. Two months afterward, at our request, the tablets were recommenced with reappearance of the wheals. Following the second withdrawal of the drug, the eruption disappeared within twenty-four hours. As we knew nothing about the actual composition of the tablets other than the formula on the label, after a lapse of several weeks the patient was given capsules, each containing 1 grain (0.065 gm.) of phenolphthalein. One of these taken at bedtime had the same effect on the bowels as one of the tablets evoked, and produced in addition a number of small wheals on the neck. Two capsules the following evening brought out the next morning an urticarial patch which involved one forearm from the elbow to the wrist. This was gone in twenty-four hours. No more phenolphthalein was taken, and in the ensuing interval no recurrence of the skin condition has occurred.

#### SUMMARY

This case is an addition to the few instances in which phenolphthalein has been noted to produce a skin eruption.

Differing from previously reported cases, our patient had an outbreak clinically indistinguishable from the common type of urticaria.

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## DENTAL INFECTION SECONDARY TO ACUTE MAXILLARY SINUSITIS

### REPORT OF THREE CASES

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The etiology of maxillary sinusitis includes the extension of infection from the teeth as one of the principal sources. The method of infection may be through direct continuity from a manifest or a hidden dental caries, a dead tooth, a periostitis, an osteitis of the alveolar process, a rupture of an infected dentigerous cyst, or through the circulation. Hajek, who is probably the most conservative in this particular, reports the dental origin at about 8 per cent. Lermoyer and Luc place it at about 50 per cent. Tilley, going to the opposite extreme, estimates it at about 100 per cent. However, the general opinion is that the incidence of the dental etiology is from 20 to 25 per cent. Though all of these percentages are subject to much dispute, they are sufficiently strong to convince one that dental infection is an established and important cause of antrum disease. However guilty the teeth may be, there are occasions when they are not only innocent, but actually the victims of a primary infection of the maxillary sinus.

When dental caries or a periostitis is present, or an osteitis of the alveolar process, or a dentigerous cyst, the transference of the infection through direct continuity of the surface can be readily understood. However, in order fully to understand the conveyance of an infection through the circulation it is necessary to refer to the blood supply of the structures involved. Strubell found, on injecting the posterior alveolar arteries, three distinct groups of vessels; the first in the mucous membrane of the antrum (the periosteal layer), the second in the spongy bone of the maxilla, and the third in the covering of the alveolus and the roots of the teeth. These vascular groups, though showing individual characteristics, had so many connections and were so intimately anastomosed with one another that the three groups could be considered as really one system. It was thus shown that the blood supply of the antrum, the maxilla and the teeth was the same. Knowing the intimate communication of these three vascular groups, it is now easy to understand how the infection from the antrum can travel by way of the circulation to the teeth.

#### REPORT OF CASES

This condition, wherein the dental infection is secondary to a maxillary sinusitis, is illustrated by the cases here reported:

CASE 1.—Agnes B., aged 40, complained of a severe neuralgic pain over the superior maxillary region and orbit on the left side. The pain was very acute, shooting in character and intermittent in type, and occurred every few minutes. The patient had not been able to sleep for three nights, and had been very restless during the daytime, continually applying hot poultices. This resulted in a marked swelling of the cheek and eyelids, but no relief of the pain.

Her dentist found nothing the matter with the teeth and referred her for a sinus examination. Rhinoscopy disclosed a hyperemia of the naris on the affected side, a hypertrophied mucous membrane, no septum deviation, no hypertrophied turbinates and no secretion. The patient was placed on conservative treatment consisting of hot nasal irrigations, hot tincture of benzoin compound inhalations, intestinal catharsis and an antipyretic potion, and referred for roentgenography. The roentgenograms revealed a definite shadow over the antrum, but no diseased condition of the teeth on the affected side.

The anterior end of the inferior turbinate and adjacent structures were anesthetized with 10 per cent. cocaine, and a needle puncture was made. Injection of physiologic sodium chlorid solution resulted in the evacuation of pus, which was mixed with the solution and emitted a fetid odor. About a quart of the solution was used until the return flow was clear. The patient felt much relieved and was told to return the following day, which, however, she did not do. She returned a month later complaining of similar symptoms, only milder in character. Rhinoscopy on this occasion revealed a condition similar to the one previously found. As a routine procedure the teeth were examined again, and this time tenderness was elicited over the second bicuspid. A roentgenogram revealed an abscess at the root, which had positively not been there on the previous examination. The tooth was extracted, and the patient made an uneventful recovery.

CASE 2.—James H., aged 28, was referred by the family physician with a diagnosis of a probable pansinusitis with an acute maxillary antrum exacerbation. The patient complained of headache intensified by stooping, coughing or any jarring. The pain was general over the whole forehead, and was particularly severe over the left eye and left cheek bone. He gave a history of headache, nasal obstruction, and susceptibility to colds extending over a period of three years. This acute attack was of four days' duration.

Examination of the teeth detected no tenderness or manifest caries. Rhinoscopy revealed a septum moderately deviated to the left, a hypertrophied mucous membrane, and a polypoid



middle turbinate on the left side. There was a thick secretion between the septum and the middle turbinate, and also between the turbinate and the lateral nasal wall. The diagnosis of pansinusitis of the left side was sustained, but because of the acuteness of the present condition, radical measures were postponed. The maxillary sinus was punctured and irrigated, and pus was evacuated. Relief from the excruciating pain was almost instantaneous. The patient was then referred for roentgenography. The roentgen-ray findings were negative as far as the teeth were concerned, but showed shadows over the left frontal, the left ethmoid and the left maxillary sinus. The patient, who was a traveling salesman, had to leave and did not return for about three months, at which time he presented another exacerbation of the antrum infection. In addition, at this time the examination of his teeth disclosed an apical abscess of the first molar which had not been there previously. The antrum was punctured and irrigated, and at a later time the polypoid middle turbinate was removed, the ethmoid cells were exenterated, and the sphenoid sinus given a wide opening. The sinusitis was cleared up and the patient was referred to his dentist for the dental infection.

CASE 3.—Henry G., aged 32, came to the office complaining of a throbbing pain over the right side of the face. In addition he had a temperature of 101 F. The pain radiated over the cheek and the teeth to his ears and to his neck. He had first noticed this about three days before. Believing it to be a toothache, he went to his dentist, who removed a bridge from that side of the mouth, but found no focus of infection in the teeth and pronounced the teeth in good, healthy condition.

On further questioning it was ascertained that the patient was subject to frequent "colds in the head," and that at one time the trouble had been diagnosed as antral; but the symptoms had been so mild that he did not care to have any operation performed.

Rhinoscopy disclosed a hypertrophic rhinitis, but no secretion. The inferior turbinate and the adjacent structures were anesthetized. Pus was evacuated, and the washing with the physiologic sodium chlorid solution was continued until the return flow was clear. The patient was under treatment for two weeks. The acute symptoms subsided, but at each washing pus still showed. The secretion was thick, tenacious and foul and the needle opening was insufficient, it being blocked by the hypertrophied inferior turbinate. Removal of the anterior tip of the turbinate and enlargement of the opening were suggested, but as the patient was relieved of his subjective symptoms, he refused any further intervention.

He did not appear again until six months later, when he came, in great distress, the pain being even more severe than during the previous attack. The rhinoscopic picture was unchanged. As a routine procedure the teeth were examined, and this time tenderness was elicited over the second bicuspid and the first molar. Irrigation of the antrum revealed pus. As soon as the acute condition subsided, the anterior end of the enlarged turbinate was pushed away from the nasal wall and fractured. A better field being obtained, the antrum opening was well enlarged and free drainage was established. At the same time the patient was referred to his dentist, who this time reported abscesses of both the second bicuspid and the first molar teeth. The maxillary sinusitis was cleared up intranasally. At my final examination of him, he reported as still under the care of his dentist for the dental infection.

#### COMMENT

When these patients first appeared, all had sound teeth. This was satisfactorily demonstrated by the combined findings of three different men: the dentist, the roentgenologist and the rhinologist. Each of the patients had a definitely diagnosed acute maxillary sinusitis, which was conclusively proved by pus being obtained from every one of the antrums. In addition, one patient had a pansinusitis of the affected side. Each neglected the proper treatment of the antrum and developed another acute attack, at which time a recently developed dental infection was discovered in addition to the antrum infection already present. In view of the close anatomic relationship of the antrum

of Highmore and the teeth involved in each case, it is reasonable and logical to conclude that the dental infection was due to the pus finding its way from the antrum to the teeth, and makes one believe that, if the proper attention had been given to the sinusitis at the right time, these teeth would in all probability have been saved.

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## RELATION OF CONSTIPATION TO INTESTINAL INTOXICATION

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Constipation is a symptom indicating a disturbance of the function of the colon. Around this common, chronic disorder have been built more than one elaborate speculation, the foundation stone of all being a toxemia resulting from the retention of decomposing material. The large bowel has, in truth, been the theorist's playground, and the ideas of intestinal intoxication, or toxemia, or autointoxication have come to be linked with every sluggish colon.

That some patients are morbidly depressed by the suggested possibility and are loath to forsake their gloomy fancies, even when order is restored, is recognized by every practicing physician.

Clinical observations have led many physicians to doubt that in the increasingly common case of ordinary constipation with a delay of forty-eight, sixty, seventy-two, a hundred hours or perhaps longer, it is attended by the absorption of toxins. In other words, that the symptoms of so-called autointoxication complained of and seen in a large number of these cases are caused by a polluted blood is questioned.

I believe that investigation shows that (1) the symptoms presented by those seeking relief from constipation cannot be taken as unquestioned evidence of the absorption of toxins; (2) in cases of ordinary constipation, toxic substances are not necessarily absorbed into the blood, and (3) in these cases, toxic substances may not be present in the fecal mass in sufficient amounts to produce symptoms if absorbed.

#### ORIGIN OF SYMPTOMS IN CONSTIPATION

The typical symptoms of so-called autointoxication may be primarily explained on a mechanical basis, that is, distention and irritation of the lower bowel by fecal masses. The nervous system is the distributing agency, all tissues sharing in the disquietful state. As one result, we note a tendency to endocrine unbalance, this in itself being of sufficient import to be causative of certain symptoms and ultimate effects. It is my contention that this explains the pronounced symptomatology of the nervous system, involving the mental, the sensory, the motor and the sympathetic systems, and which Satterlee and Eldridge<sup>1</sup> assign to the selective affinity of toxins.

#### EXPERIMENTAL OBSERVATIONS

Five normal men were selected, four medical students and one physician. Two of the five were in the habit of having two bowel movements each twenty-four hours, and each of the remaining three, one. Three of the men were specifically interested in the

1. Satterlee, G. R., and Eldridge, W. W.: Symptomatology of the Nervous System in Chronic Intestinal Toxemia, J. A. M. A. 69: 1414 (Oct. 27) 1917.



problem, having worked on it more or less intensively in the preparation of a thesis. The other two were sufficiently interested to volunteer their services. The preconceived notion of all of the men was that the toxemia theory was correct; thus, if they allowed any prejudice to influence their actions and their reports of subjective symptoms, it was not at all favorable to the actual findings.

For one week, control observations were made, covering (1) reaction time for sight, touch and hearing; (2) basal metabolism; (3) neuromuscular fatigue; (4) blood chemistry—urea, uric acid, nonprotein nitrogen, sugar; (5) blood viscosity; (6) indicanuria; (7) roentgen-ray findings of the gastro-intestinal tract; (8) blood pressure and pulse, and (9) subjective symptoms—coated tongue, foul breath, mental acuity, appetite, digestion, pain or discomfort, emotions, sleep, restful or otherwise, and nervous manifestations.

The normal consists of an average of from three to seven observations made on each of the nine points listed. The laboratory work was done by technicians, expert in their field.

This was followed by a period of voluntary constipation lasting nearly four days—ninety hours, no drugs being employed. Aside from the use of boiled milk to serve as a constipating agent, the dietary remained the same as during the control period, namely, a liberal lacto-ovovegetarian regimen. The very distressing call to stool abated after the first twenty-four hours, the normal alarm being quieted, as expected, by refusal to respond.

In each case the typical symptoms of "auto-intoxication" developed. All but one presented a coated tongue within sixty hours. The breath was markedly foul in one case, and corresponded to the degree of tongue coating in the other three. One man developed canker sores. The appetite was impaired in every case, and all but one complained of some gas. No gastric distress was noted in four; one complained of periodic attacks of nausea after forty-eight hours. The development of mental sluggishness and an increasing deficiency in the power of attention was a marked symptom in each subject. They were uniformly depressed, restless and irritable. In all but one, the night's rest was declared to be unrefreshing. A sense of heaviness in the pelvis and the dull "toxic" headache was noted in each case. The headache was a pronounced symptom within forty-eight hours, and continued throughout the period. Every man expressed himself as feeling generally "rotten." In every way their symptoms compared favorably with the general malaise complained of by the constipated.

The sluggishness of the nervous system was also indicated by the increase in reaction time. The normal average for sight, touch, and hearing being 0.184, 0.146 and 0.149 seconds, respectively. The average of four observations taken during the constipation period was 0.221, 0.165 and 0.162, respectively. This shows an increase of 0.037 for sight, 0.019 for touch, and 0.013 for hearing.

A study of the basal metabolism on four subjects indicated a pronounced increase in each case, one showing a jump from a normal average of 2.09 plus to 18.1 plus per cent. The others showed an average increase of about 6 plus per cent. This is in keeping with our blood sugar findings.

The average blood sugar for the control was 97 mg. per hundred cubic centimeters. Examination of blood

taken on the morning of the fourth day revealed an average content of 124 mg. per hundred cubic centimeters, indicating an average increase of 27 mg., or 28 per cent. of the normal. From Cannon's work we know that this glycemia points to suprarenal stimulation, and that the resulting increase in endocrine activity can be justifiably expected to account for the alteration in metabolic rate.<sup>2</sup> The blood urea, non-protein nitrogen and uric acid showed no alterations.

Ergographic determinations indicated the more rapid onset of fatigue, an average of 64,000 gram-centimeters less work being done in the seventy second interval than under the conditions of the control.

The viscosity of the blood remained the same throughout the entire period of observation.

The test for indicanuria was limited to four of the men, and brought indifferent results. The urine of three of the subjects contained a slight trace of indican before the period of constipation, and two of these revealed no more at the end of the period than before. The urine of the third man gave evidence of a slight increase. The urine of the fourth man, clear on the control, contained a trace at the close of the period. According to Hewlett, the amount of indican in the urine may be normal, diminished or increased in chronic constipation; hence, the findings do not mean much.<sup>3</sup> Large numbers of cases reported as chronic intestinal toxemia show no indicanuria.<sup>1</sup>

Barium was mixed with the breakfast every other morning for a week before the constipation period, and careful estimate was made of the motility of the tract. All of the men were found to be in excellent condition mechanically. Toward the close of the constipation period they were again observed with the specific object of determining the possibility of an ileac stasis. Reasoning from the gradient theory of Alvarez, we were prepared to find not only an ileac but possibly a duodenal stasis. In this we were happily disappointed. Every ileum was clear, well inside the twelve hour limit.<sup>4</sup> An examination of the records of the Loma Linda Sanitarium and Hospital reveals the fact that, save in those cases in which there was a pathologic condition of the intestinal tract, chronically constipated persons give no evidence of ileac stasis. If they did, this story might be different; for it is pretty generally agreed that stasis in the small bowel probably does give rise to a toxemia.

At the close of the ninety hour period of constipation, the men were instructed to take a cleansing enema and to report to the laboratory for further tests. Four of the men did so; the fifth, apparently adverse to the injection, succeeded in arranging a bowel movement in some other way. All appeared at the laboratory within sixty minutes of the time that operations for the relief of their condition were begun. Quizzed individually, they were unanimous in their opinion that they felt decidedly different, and their general attitude stamped their statement as the truth. In all cases the sense of oppression and marked mental depression was gone. The headache was gone in four subjects, one man complaining of the evidence of a leave-over, which, however, was entirely gone within the period of another two hours. Every man expressed himself as feeling a degree of mental alertness and

2. Cannon, W. B.: *Bodily Changes in Pain, Fear, Hunger and Rage*, New York, D. Appleton & Co., 1920.

3. Hewlett: *Pathological Physiology of Internal Diseases*, 1917, p. 199.

4. Alvarez, W. C.: *The Motor Functions of the Intestine from a New Point of View*, J. A. M. A. 65:388 (July 31) 1915.



physical fitness foreign to him for several days past.

The proof of the trustworthiness of their statements lay in the laboratory tests that were made. The reaction time for sight, touch and hearing was cut from one to four-hundredths second—in other words, back to the control readings. Three of the five were tested for neuromuscular fatigue, and in each case did more work by several thousand gram-centimeters than was done one hour before.

The blood sugar determination which, one hour before, gave an average for the men of 124 mg. per hundred cubic centimeters now gave an average of 92 mg. per hundred cubic centimeters—back to the normal figure.

The marked termination of the classical symptoms of "autointoxication," with laboratory findings indicating a cessation of the activities of causative agencies within a period of time prohibitive of the complete elimination of toxins if present as causative agents, can lead us to but one conclusion, namely: that these symptoms cannot be taken as evidence of the absorption of poisons.

I feel that my position in this matter is reinforced by the subsequent finding, by roentgen-ray examination, that the man who failed to take an enema had a large mass of fecal material still present, the entire sigmoid and large bowel back to the midportion of the transverse colon being filled. He said that he had passed a great quantity of material and supposed that the bowel was clear. The colon of each of the other men was empty. The one man still had enough material remaining to supply the system with toxins in plenty, if that were the *modus operandi* in these cases. The fact is that he eliminated enough to relieve the irritation and hence the abatement of symptoms.

That the same syndrome may be produced by the introduction of an inert substance into the rectum has been observed by Alvarez in his work with patients.<sup>5</sup> To substantiate the point experimentally, we packed the rectum of four of the men with cotton pledgets soaked in petroleum and dusted with barium. This was done two days after the other work was completed. Roentgen-ray observation indicated that the rectum was comfortably filled in each case. The packing was retained for three hours. The men were then quizzed, and each testified to the return of the typical symptoms previously recited. Again laboratory findings substantiated the statements. Reaction time was again prolonged, and neuromuscular fatigue again earlier in its onset. Blood sugar, although within the normal limits, showed an average drop of 6 mg. per hundred cubic centimeters after evacuation, a control having been taken just before the rectum was packed.

The effect of rectal plugging on blood pressure was determined on a dog prepared for a blood pressure tracing. A gradual rise was noted from 122 to 138 mm. of mercury in four minutes. This high level was maintained without alteration till the close of the observation, some fifteen minutes later.

#### IN CASES OF ORDINARY CONSTIPATION, TOXIC SUBSTANCES ARE NOT ABSORBED INTO THE BLOOD

In studying this phase of the problem, dogs were used. A sample of feces from a constipated patient was obtained, several types of bacteria isolated, and

cultures grown in suitable broth. Two healthy dogs were selected, Dogs A and B. Dog A was starved for half a day and given an ounce of castor oil. The next morning, Dog A was anesthetized, the abdomen opened, and the large bowel clamped at its proximal and distal ends. The portal and femoral veins were isolated. Dog B was prepared for blood pressure tracings, and the femoral vein exposed. Ten cubic centimeters of blood from the femoral vein of Dog A was drawn, citrated, and injected into Dog B. The injection was repeated, using portal blood from Dog A. The curve obtained was precisely the same in the two cases—a slight rise amounting to 4 mm. of mercury. These curves were taken as a control. Sixty cubic centimeters of the prepared broth was then introduced by syringe into the closed large bowel of Dog A, an amount easily accommodated without tension. Allowing twenty minutes for absorption, 10 c.c. of blood was again withdrawn from both portal and femoral veins of Dog A and injected into Dog B. A marked rise in pressure resulted in each case. The curve for the portal blood showed a rise that was quicker in onset, and which reached a maximum 20 mm. of mercury above the normal. The femoral blood produced a slightly lower curve, 18 mm. of mercury, with a slower rise. A repetition of the injection twenty minutes later produced the same type of curve.

This experiment indicated that the large bowel may absorb certain toxic substances, and that if absorbed they apparently reached the systemic circulation in large part, the liver not being entirely effectual in retarding the advance.

Although the possibility of the absorption of toxin is thus proved, it is quite evident that the conditions of the experiment do not at all parallel the findings in the constipated bowel. The fecal mass in an inactive bowel presents an altogether different proposition than liquid poison, developed *in vitro*, introduced into the empty intestine by a syringe. In order to place the experiment on an analogous basis, three healthy dogs, Dogs 1, 2 and 3, were chosen, and 10 c.c. of blood was drawn from each and citrated. Dog 4 was prepared for blood pressure tracings, and the bloods from Dogs 1, 2 and 3 were injected intravenously, the results to serve as a control. No alteration in blood pressure was noted, and it was considered that the blood of Dogs 1, 2 and 3, under normal conditions, contained no pressor or depressor substances. A fecal specimen was secured from Dog 1, extracted with ether, and the residue taken up in saline solution.<sup>6</sup>

Dogs 1, 2 and 3 were anesthetized, and a condition of constipation induced by the surgical procedure of closing the anus. Quinin and urea hydrochlorid was injected around the site of the wound in Dog 1, and 2 per cent. cocain ointment frequently applied in the case of Dogs 2 and 3. There was no evidence of any suffering in any of the three dogs during the period of the observation. The diet consisted of cooked meat, boiled milk and bread; and, although the appetite appeared to be a bit impaired, the dogs seemed to be in fair spirits, Dogs 1 and 2 remaining in good condition throughout. Dog 3 had a little infection about the anus.

Ten cubic centimeters of blood was drawn from Dog 1 at the end of ninety-six hours, and from

5. Alvarez, W. C.: Origin of the So-Called Autointoxication Symptoms, *J. A. M. A.* 72: 8 (Jan. 4) 1919.

6. Ground with sand in distilled water; rendered alkaline with sodium carbonate; extracted with ether; washed with water and evaporated at room temperature; residue taken up in physiologic sodium chlorid solution.



Dog 2 at the end of seventy-two hours. The rectum was opened, an enema given, and the stool secured. It was extracted according to the technic followed by Whipple.<sup>7</sup>

Ten cubic centimeters of blood from Dog 3 was drawn at the end of fifty-five hours. No fecal material was secured.

The blood from Dogs 1 and 2 was injected intravenously into Dog 5, prepared for a blood pressure tracing. No evidence of the presence of pressor or depressor substances resulted from either injection. The blood from Dog 3 was given intravenously to Dog 6, prepared for the securing of a blood pressure tracing. Again no alteration in the curve indicated an absence of toxic elements.

We are thus in the possession of evidence that leads us to believe that toxic substances may be absorbed under certain conditions and that, if absorbed, their presence may be demonstrated by an alteration in the blood pressure curve, which in our work resembled an epinephrin curve. The evidence also shows that a retention, with meat as a part of the dietary, of fifty-five, seventy-two and ninety-six hours, respectively, is not attended by an accumulation of poisons in the blood stream, at least to a sufficient degree to make their presence known by physiologic methods. This finding is in harmony with Mutch's<sup>8</sup> forced admission that, if toxins are absorbed from the colon, they are in such minute quantities that pharmacologic activities are probably so very slight as to be negligible. By just what method Mutch arrived at this conclusion is not reported.

#### TOXIC SUBSTANCES NOT PRESENT IN FECAL MASS

Ten cubic centimeters of the watery extract from the normal feces of Dog 1 was injected intravenously into Dog 5, with no alteration in the curve to indicate the presence of toxic substances.

Twenty-five cubic centimeters of watery extract from the stool secured from the same dog by enema, after ninety-six hours of retention, was injected intravenously into Dog 6. The blood pressure was not altered.

Ten cubic centimeters of watery extract from stool secured from Dog 2—seventy-two hours retention—was injected into Dog 5 and gave a like result.

We are led to conclude from this that the stool is not necessarily charged with the morbidic exhalations with which it is credited, and that retention in the colon is a possibility without the accumulation of toxic substances in the fecal mass, at least in sufficient amounts to produce symptoms if absorbed.

There are two suggested explanations for this finding. First, as we approach the splenic flexure, we find that the conditions for the maintenance of bacterial life grow decidedly unfavorable; in fact, in the descending colon very little evidence of putrefaction is detectable. The more exsiccated the feces becomes as a result of retention, the less favorable it is as a habitat for germs. Secondly, those that have studied the bacterial activities of the alimentary tract tell us that the small bowel is specialized for the aseptic absorption of food, while to the large bowel is delegated the bacterial destruction of the residue.<sup>8</sup> It is reasonable to believe that the flora engaged in this work of destruction operates in relays, the interme-

diary products which may be toxic being seized on by another line of organisms and so on, until the final innocuous bodies are formed. For example, Mellanby<sup>9</sup> found that beta-iminazo, which Mutch reported as a depressor substance provided by bacterial action on histidin, could be obtained only with a pure culture of a certain strain. With other organisms present, it was rendered inert as rapidly as formed.

In his work on the toxemia of intestinal obstruction, Whipple demonstrated that a closed, unwashed loop of colon, including 3 inches (7.5 cm.) of ileum, is not incompatible with perfect health. Whipple locked up bacteria, fecal remnants, intestinal mucus and cell debris, all highly putrescible substances, in the healthy colon of a large dog for ten months without the slightest evidence of toxemia. When the animal was killed, a mass weighing 250 gm. (8½ ounces), having the appearance of feces, and containing bacteria and cellular debris, was found. It was extracted and tested by intravenous injection, on three pups with evidence of a very slight intoxication on only one, following a very large dose. Whipple<sup>7</sup> states that this may indicate a trace of toxic material in this closed loop.

These facts lead me to consider that delay in the colon does not necessarily produce such a desperately toxic mess as some people would have us believe.

#### COMMENT

I have no disposition to deny that cases of auto-intoxication of intestinal origin do exist. Bainbridge<sup>10</sup> enunciates his belief that this is particularly true in those suffering from a persistent diarrhea. Alvarez is of the same opinion. But I believe that of the constipated an exceedingly small percentage are of this type. Of this one thing, however, I am positive: In the constipated who are relieved of the classical symptoms of "auto-intoxication" immediately after eliminative processes, there is no intoxication, no blood pollution, no toxic stool. I furthermore believe that the forty-eight hour stasis which is the average revelation of the carmin test in sanatorium guests does not necessarily mean a subtle poisoning that calls for the application of colon massage and *Bacillus acidophilus* therapy.

An announcement of a stasis introduces an element of fear that brings the hapless victim to the point at which the colon dominates his mental processes. He fears that harm is being done to his body. Much of the colon therapy that is being advocated today is aimed at a condition that does not exist—auto-intoxication—and its value is limited to the possible aid in the establishment of temporary regularity, and in relieving the mental pressure induced by a false doctrine, together with the implantation of a new type of flora that will last not longer than ten days after the patient has returned to his home dietary.<sup>11</sup> Those patients whose fault in this respect, and there are many, is accidentally discovered in the course of a routine examination, and who have no complaint referable to the bowels, might better be passed along without the scare that is usually administered.

Those who complain definitely of constipation and who admit of temporary relief after an enema should

9. Mellanby, E.: *Quart. J. Med.* **9**: 165 (April) 1916.

10. Bainbridge: *Illinois M. J.* **38**: 1 (Jan.) 1922.

7. Whipple: *Toxemia in Intestinal Obstruction*, Collected Reprints of the Hooper Foundation **5**, 1920.

8. Mutch, N.: *Brit. J. Surg.* **2**: 608 (April) 1915.

11. Rettger, L. F., and Cheplin, H. A.: *A Treatise on the Transformation of the Intestinal Flora*, New Haven, Conn., Yale University Press, 1921.



be treated to correct the constipation, not the auto-intoxication. We believe that the mechanical theory may account for those definite endocrine symptoms seen in many of these cases of long standing constipation and attributed to poisons in the blood. Continued nerve strain is accredited with the power of ultimate endocrine depletion with its attendant physical decay. The type of case with which we are concerned may exhibit just such a drain on the nervous system, and is in the same way capable of bringing about degenerative changes.

## APLASTIC ANEMIA FOLLOWING NEO-ARSPHENAMIN

### REPORT OF CASE

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CHICAGO

*History.*—Mrs. L. M., a Swedish woman, aged 46, was admitted to the medical service of Dr. Frederick Tice at the Cook County Hospital, Feb. 13, 1921, with the following history, which was obtained from her daughter: In the summer of 1919 she was told by her family physician that she had syphilis of the liver. She began treatment for it, which, up to the summer of 1920, consisted of iodids and mercurials, and from then to January, 1921, she received twenty-six injections of neo-arsphenamin. The physician in charge of the treatment states that, except for slight jaundice on several occasions, no reactions followed the injections.

In the beginning of January, 1921, she had a severe sore throat, which persisted. Shortly afterward she had severe epistaxis, for which she was treated at a hospital, without any improvement. At the same time it was noticed that the patient had become extremely pale and was getting rapidly weaker and weaker. Bleeding from the gums, rectum and vagina followed. There is no record of a blood examination at this time. Her condition became progressively worse, but she was discharged from the hospital, February 8, because of lack of funds; she came to the Cook County Hospital, February 13.

Her history was negative for any anemia or any physical incapability. She had always been a hard-working woman and had always been in good health; she had not known of any syphilitic infection at any time. She had five children, who are all well. There had been a miscarriage several years before. Her father died of carcinoma of the stomach; the family history was otherwise negative.

*Physical Examination.*—The patient was fairly well developed, weighing about 125 pounds (56.7 kg.). Delirium was present on admission. The temperature was 100.5; the pulse, 96, of fair volume and regular; the respiratory rate, 20. The skin was markedly pale, and there was a slight subicteric hue of the skin and sclera. Evidence of recent epistaxis was present. The buccal mucosa and gums showed a marked pallor. There were numerous hemorrhages beneath the mucosa, varying from punctate petechiae to hemorrhagic areas about 1 cm. ( $\frac{3}{8}$  inch) in diameter. The gums were bleeding freely, and a fetid odor was present from the mouth. The liver was palpable about 1 finger's breadth below the costal margin; the spleen could not be palpated. The urinary bladder was considerably distended. Several subcutaneous hemorrhages were present over the extremities. There was profuse and persistent uterine hemorrhage. All other findings were negative.

*Laboratory Findings.*—The urine was normal in all respects, and contained no blood or urobilin. The stools contained considerable blood, both chemically and microscopically. The blood Wassermann reaction was negative. The blood was very pale, with a coagulation time of twenty minutes; hemoglobin, 15 per cent.; erythrocytes, 880,000, and leukocytes, 1,600 per cubic millimeter. The stained blood showed 70 per cent. lymphocytes, chiefly of the small variety. No abnormal white cells were found. The red blood cells were very little different from those found in normal blood, there being no nucleated cells, no basophilic degeneration, and very slight variation in

size or shape. An exact blood platelet count was not made, but it was noticed that platelets were almost entirely absent.

*Course.*—The condition of the patient continued to become aggravated. The temperature dropped to 98 on the 14th, but began to rise on the 16th, reaching its peak of 103 on the 19th, and then dropping to subnormal. Involuntary bowel movements and obstinate urinary retention were present throughout the entire course. Two blood transfusions were done, on the 15th and 19th, respectively, with very little improvement; and the patient died, February 23.

*Necropsy Findings.*—Petechial hemorrhages were numerous and widespread, involving the upper and the lower extremities, leptomeninges, pleura, epicardium, myocardium, kidneys and endometrium. There was a large blood clot in the vagina; there were two hemorrhagic cysts in the right ovary. There was marked anemia of the myocardium, liver, kidneys and spleen. The spleen was not enlarged, and, except for pallor, it was normal in all respects. Cholelithiasis was present, and the liver reached 1 finger's breadth below the costal margin, but was otherwise normal. There were no signs of syphilis in any of the organs. The marrow taken from a rib was yellowish-brown, with only small areolas of red marrow.

Microscopic examination of the bone marrow revealed a marked diminution of erythroblasts and myelocytes. Megakaryocytes were also diminished. The preponderating cells were small lymphocytes.

### COMMENT

Thus far there have been only two or three causes definitely connected with the etiology of secondary aplastic anemia. It has been shown by Frank<sup>1</sup> and others that intensive roentgen-ray exposure will cause atrophy of the bone marrow, and Frank and Grünberg<sup>2</sup> report a case of myelogenous leukemia which, by intensive roentgen-ray treatment, was turned into an aplastic anemia. Sautesson<sup>3</sup> and Selling<sup>4</sup> have shown that severe benzene (benzol) poisoning will sometimes cause an aplastic anemia. That arsphenamin has a distinct effect on the hematopoietic organs is shown by its beneficial effect in small doses on pernicious anemia.<sup>5</sup> Destructive results have also been reported by Rumpel<sup>6</sup> and Leede.<sup>7</sup> Hemorrhagic spots following arsphenamin treatment have been reported by Hutmel;<sup>8</sup> and Lerredde<sup>9</sup> reports subcutaneous hemorrhages in a young man, and bleeding from the gums and nose in a young woman.

Goerke<sup>10</sup> of the University of Breslau has recently reported two cases of aplastic anemia following administration of neo-arsphenamin, which seem to be identical with the case described above. A similar case was reported recently by Moore and Keidel.<sup>11</sup>

The case described in this paper is evidently one of aplastic anemia secondary to neo-arsphenamin administration. This case is reported because of its rarity in the literature and because it points out one of the possible complications of neo-arsphenamin, which has thus far been chiefly overlooked.

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1. Frank, E.: Berlin. klin. Wchnschr. **37**: 41, 1915.
2. Frank and Grünberg: Inaug. Diss., Breslau, 1916.
3. Sautesson: Arch. f. Hyg. **37**.
4. Selling: Bull. Johns Hopkins Hosp. **21**: 33 (Feb.) 1910.
5. Bramwell: Clinical Studies of Edinburgh, 1906, 1907, 1913.
6. Rumpel: Med. Klin. **12**: 1228, 1916.
7. Rumpel: Deutsch. med. Wchnschr. **36**: 2286, 1910.
8. Leede: München. med. Wchnschr. **58**: 1184, 1911.
9. Hutmel: Jahrb. f. Kinderh., 1916.
10. Lerredde: Rev. gen. d. Clin. et Theráp. **33**: 33, 1919.
11. Goerke: München. med. Wchnschr. **67**: 1226 (Oct.) 1920.
12. Moore, J. E., and Keidel, Albert: Stomatitis and Aplastic Anemia Due to Neo-Arsphenamin, Arch. Dermat. & Syph. **4**: 169 (Aug.) 1921.

**Morbid Doubt.**—There is a morbid kind of doubt, which resembles a weak stomach. Everything is swallowed, but nothing retained; everything is received, but nothing digested. The consequence is emaciation, exhaustion, consumption, and premature death.—Strindberg, "Zones of the Spirit."



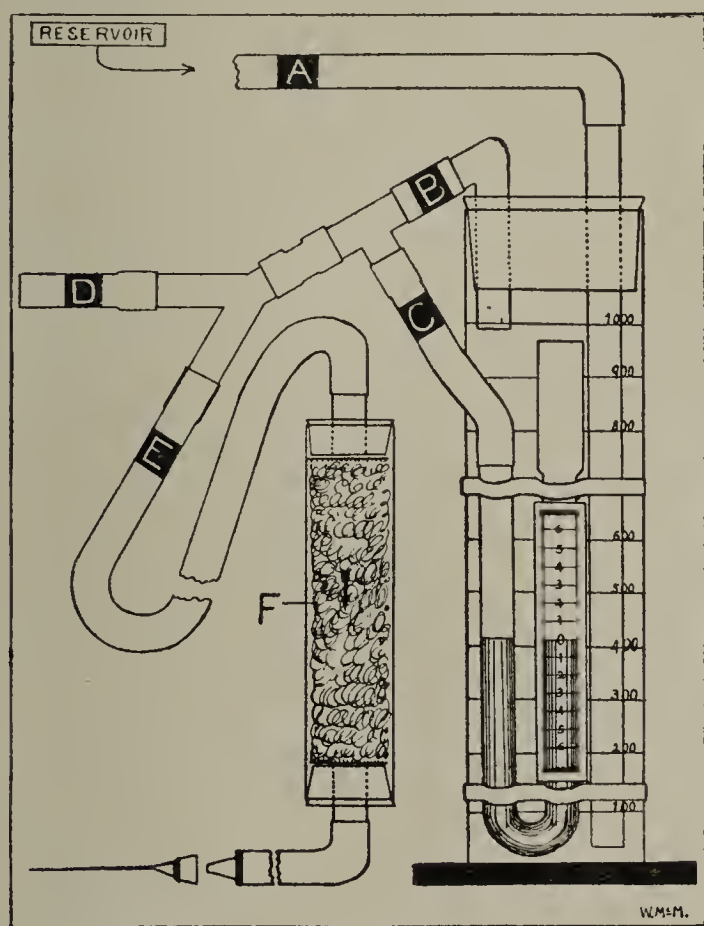
## Clinical Notes, Suggestions, and New Instruments

### A SIMPLE INFLATION APPARATUS

WRIGHT MACMILLAN, M.D., PASSAIC, N. J.

Since apparatus on the market for inducing pneumothorax seemed to be unnecessarily complicated and expensive, the arrangement illustrated in the accompanying diagram was devised and found practicable in use. The principle is the same as that illustrated in DaCosta's "Modern Surgery" as Brauer and Spengler's modification of Murphy's apparatus, but the details are much simplified and the materials are readily accessible.

The requirements for successful inflation are met in the following ways: (1) The pressure of the injected gas can be delicately graded and gaged by raising or lowering the water reservoir. (2) Measurement of the amount of gas injected can be determined by lowering the reservoir to bring the



Inflation apparatus: The "reservoir" is an irrigation can. *A*, *B*, *C* and *D* are clamps. The tube from Clamp *D* is extended to a gas tank if air is not used.

remaining gas in the cylinder under atmospheric pressure and reading the amount of water in the cylinder. (3) Pressure in the cavity being injected is read quickly at any time during the operation by closing Clamp *B* and opening *C*. (4) If hot water is used in the reservoir, the gas will be warmed and moistened. (5) Experience shows that air infection is rare, but from a knowledge of the properties of bacteria we must confess that it is possible. This chance of infection is eliminated by the strainer of sterile cotton, *F*.

The materials used in making the apparatus are rubber tubing with glass tubing to fit; a U-tube with a 6 mm. lumen for the manometer; a liter cylinder graduate fitted with a two-holed rubber stopper; a strainer, consisting of a glass tube 25 cm. long and 4 cm. in diameter. This is packed fully but not tightly with cotton held in by two small wads of gauze, and fitted with two one-holed rubber stoppers. Other materials are tube clamps, adhesive plaster to attach the manometer, and an adapter for the needle. Before use, the strainer with the distally attached tubing is autoclaved and dried. All joints must be made positively air tight with rubber cement, and the clamps must be such that their imperviousness when

closed can be relied on. These materials are assembled as shown in the diagram.

For inducing pneumothorax, information on the precautions in selecting the patient, and the surgical details are easily accessible elsewhere. In using the apparatus, the cylinder is placed on a table by the patient's bed and the reservoir hung on a hook at a height of about 6 feet. The cylinder is empty, and Clamp *B* and Clamp *D*, the air inlet, are closed. *A* is always open in ordinary use. *C* and *E* are open, connecting the needle through the strainer only with the manometer. An assistant watches the manometer intently as the needle pierces the chest wall. Just as the pleural cavity is entered, there is a slight fluctuation of the water in the manometer with a sudden stop due to pressure of the visceral pleura over the needle opening. No movement in the manometer ever occurs until the pleura is punctured, and occasionally is absent then, owing to clogging of the needle or immediate pressure against the visceral layer. When the pleural sac is entered the manometer is shut off at once by closing Clamp *C*, and *B* is opened, allowing air to pass. The inflow should be stopped frequently and the intrathoracic pressure noted. If only a small amount of air has entered and the pressure is positive, adhesions are present and the inflation should be stopped. The intrathoracic pressure should not exceed 5 cm. of water at any time. At the first injection the lung should be left under 1 or 2 cm. of negative pressure except in the case of hemorrhage when complete collapse is desired. To refill the cylinder with air or gas, the reservoir is lowered to siphon out the water, is opened to allow the inflow of air or gas, *B* and *D* are opened, *C* and *E* closed. If nitrogen or oxygen is used, the tube from Clamp *D* leads to the gas tank instead of being open.

This apparatus was devised by me in 1918, and has been used since that time at the Davidson County Tuberculosis Hospital, Nashville, Tenn. Here I used it only with air for inducing pneumothorax in the treatment of tuberculosis, to arrest pulmonary hemorrhage, and in acute dry pleurisy without adhesions to separate the layers of the pleura. The effect of this treatment on the pain of pleurisy was remarkable in some cases.

Other uses for which the apparatus is suited are: (1) the induction of pneumoperitoneum for roentgenography and the treatment of tuberculous peritonitis; (2) perflation of the uterine tubes; (3) the induction of perirenal emphysema; (4) inflation of the intestine for intussusception; (5) distention of the bladder for cystoscopy, and (6) injection of gas into the ventricles of the brain for roentgenography.

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### INFECTED EXTRA-UTERINE PREGNANCY RUPTURING INTO BLADDER AFTER THIRTEEN YEARS, WITH DISCHARGE OF FETAL BONES THROUGH URETHRA

MAURICE KAHN, M.D., LOS ANGELES

Mrs. K., an Austrian, aged 57, multipara, widowed fourteen years, whose early history was unimportant, three months prior to her husband's death was curetted for irregular bleeding considered due to a miscarriage, after which time she suffered from right pelvic pain. Eight years before I saw her the menopause occurred, and she looked hopefully forward for a cessation of her pelvic distress; but the condition persisted, and a year and a half ago it was complicated by the development of a severe dysuria which grew steadily worse until six months ago when incontinence occurred, and this continued uninterruptedly. During the period of incontinence she would occasionally pass a small bone from the urethra, attended with excruciating pain.

The woman was greatly emaciated and in extremely poor condition. Several superficial decubital ulcers appeared on the buttocks. Vaginitis was present, and a markedly red and pouting meatus was noted. On account of great tenderness, the examination was unsatisfactory, though a mass in the culdesac and right pelvis could be made out. A stone was felt in the upper urethra. Decomposed and purulent urine dribbled from the patient, and her condition was pitiful, precluding any extensive operation. On account of her great pain and miserable plight, however, it was decided to remove



the urethral stone and make an effort to improve her condition so that she might withstand an operation.

A day later, under local anesthesia, and with a finger in the vagina pressing up behind the stone to prevent its being forced into the bladder in attempts to grasp it with forceps, the stone, the size of a hazelnut, was easily removed. A few fetal ribs and two fetal femora were removed at the same time from the bladder through the urethra. These bones were calcified and of stony hardness, and when dropped on the tiled floor sounded like nails. The woman died on the following day.

A partial necropsy revealed the small intestine adherent to a sac in the right pelvis about the size of the bladder, with which it communicated by an opening admitting two fingers. Both the bladder and the sac contained more bones, including ribs and pieces of the skull, all calcified as were the others.

Usually I am not overcredulous of a woman's statement, if the conditions found are at variance with the history; but in the present case the symptoms all date back fourteen years, to the time of the curettage. Moreover, the menopause occurred eight years ago, after which time we may at least assume that a pregnancy had not taken place. As it requires no greater stretch of imagination to assume that the extra-uterine pregnancy occurred fourteen years previously, the time from which all symptoms date, than it does to assume that it happened, say, just prior to the menopause eight years ago, I am inclined to believe that it actually took place fourteen years ago. So we have the following outline of the case:

- Fourteen years ago, rupture of an extra-uterine pregnancy.
- Eight years ago, menopause.
- One and a half years ago, rupture of extra-uterine sac into the bladder.
- Six months ago, first passage of encrusted fetal bones through the urethra.
- Death.
- 1111 Brockman Building.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1921  
TENTH ANNUAL REPORT

THE JOURNAL presents its tenth annual survey<sup>1</sup> of typhoid fever mortality in the cities of the United States having more than 100,000 population. The corrected statistics of the fourteenth census are now available, and the grouping of cities according to population has been revised to correspond with the latest enumeration.<sup>2</sup>

There are now sixty-nine cities with a population of more than 100,000. These may be conveniently considered for our purpose in six groups. More than one fourth of the population of the United States lives in these cities, and nearly one sixth lives in the twelve cities with more than 500,000 population.

As was the case in 1920, every one of the twelve largest cities (Group 1, more than 500,000 population) had a typhoid death rate under 10, and as in 1920 also, all but two had a rate under 5. It could hardly be expected, however, that the rapid decline of the last few years would continue uniformly without a check. In this group (Table 2) we find that seven of the twelve cities showed a slight typhoid increase in 1921, three showed a decrease, and two maintained the same rate. The decrease in Philadelphia and Buffalo is especially noteworthy, the rate in the former city being remarkably low.

TABLE 1.—CLASSIFICATION OF CITIES

	Population	Number of Cities
Group 1.	More than 500,000.....	12
Group 2.	From 300,000 to 500,000.....	9
Group 3.	From 200,000 to 300,000.....	12
Group 4.	From 150,000 to 200,000.....	10
Group 5.	From 125,000 to 150,000.....	9
Group 6.	From 100,000 to 125,000.....	17

The New York City Health Department continues to publish the most complete typhoid record of any of the large cities. In 1921 there were only 899 verified cases of typhoid reported, and only 124 deaths. The percentage of cases in which the probable mode of infection was traced rose to 40, as compared with 35.6 in the preceding year. Out-of-town infection stood highest in the list, as many as 238 cases (26 per cent.) being traced to this source. Ninety-seven cases were traced to contact infection, and an almost negligible number to flies (three) and shell fish (five). No single case was attributed to milk contamination. More than 60 per cent. of the patients were treated in hospitals. Immunization was given to a number of persons exposed to typhoid cases, but relatively few persons

TABLE 2.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 1 (MORE THAN 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Chicago.....	1.1	1.1	2.4	8.2	15.8
New York.....	2.1	2.4	3.2	8.0	13.5
Philadelphia.....	2.3	3.3	4.9	11.2	41.7
Los Angeles.....	2.6	2.6	3.6	10.7	19.0
Boston.....	3.1	1.5	2.5	8.0	16.0
Cleveland.....	3.4	3.2	4.0	10.0	15.7
St. Louis.....	3.8	2.7	6.5	12.1	14.7
Pittsburgh.....	4.1	2.7	7.7	15.9	65.0
San Francisco.....	4.2	3.1	4.6	13.6	27.3
Buffalo.....	4.2	5.1	8.1	15.4	22.8
Baltimore.....	5.4	4.7	11.8	23.7	35.1
Detroit*.....	5.8	5.1	8.1	15.4	22.8

\* The Detroit rate for 1921 is based not on the U. S. Census estimate, but on the board of education census of May, 1921, which is believed to be more accurate.

in the general civilian population voluntarily sought immunization. This annual analysis of typhoid cases by the New York City Health Department not only constitutes a valuable record, but is a distinct incentive to the detailed study of cases and the detection of sources of infection.

Detroit is another city in which careful study has been made of the typhoid situation. During June, July, August and September, 247 cases of typhoid were

1. The preceding articles were published May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920, p. 672, and March 26, 1921, p. 860.  
2. The number of typhoid deaths has been sent us by the local officer of health, and the rates have been calculated in most cases on the basis of the midyear 1921 population estimates made by the U. S. Census Bureau. In a few instances indicated in the text other estimates have been employed. It may perhaps be noted that the figures kindly furnished us by the municipal officials include all typhoid deaths that have occurred within the city limits, nonresidents as well as residents. In some instances this undoubtedly gives an exaggerated impression of the amount of typhoid fever in a community, but at present statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality" (Bureau of the Census, Mortality Statistics, 1912, p. 13). No attempt has been made to revise the averages of preceding years, since in most cases the figures would be changed but slightly.



investigated by the Detroit Department of Health. A much smaller proportion of the total number was traced to out-of-town infection than was the case in New York City, only sixteen, or about 8.3 per cent., being regarded as surely coming from this source. Thirty-five additional cases were regarded as possibly infected in out-of-town localities. Bathing in polluted water was considered an important source of trouble; forty-three persons apparently received infection in this way. It was believed that the very hot weather of the summer of 1921 led to an unusual amount of bathing, which in turn caused an excessive amount of typhoid due to this factor.

A thorough study of typhoid fever in Cleveland for the years prior to 1921 is now available.<sup>3</sup> The cases attributed to out-of-town infection in 1920 amounted to 27 per cent. of those reported. Not a single case was traced to milk contamination. An outbreak among the guests at a country club luncheon included forty cases and two deaths, and was due to a carrier among the caterer's assistants.

It is very clear that detailed studies of this sort will facilitate comparison between conditions in these cities, and will serve to point out typhoid sources and the proper means of prevention.

Nearly all the cities in Group 1 have satisfactory water supplies. Indeed, if this were not the case, rates so low as those here recorded could hardly be hoped for. Several cities, however, in this group depend altogether or chiefly on chlorination. Cleveland, which relied solely on chlorination for some years, now has in operation a well constructed filter supplying the larger part of the city. Detroit is looking forward to the completion of a filtering project. Buffalo, however, where local conditions of the water supply are not highly satisfactory, still depends entirely on chlorination. It is the opinion of some sanitarians<sup>4</sup> that Buffalo should provide its citizens with filtered water both for safety and for general cleanliness.

TABLE 3.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 2 (FROM 300,000 TO 500,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Minneapolis.....	1.2	2.6	5.0	10.6	32.1
Milwaukee.....	1.9	2.2	6.5	13.6	27.0
Seattle*.....	2.2	1.9	2.9	5.7	25.2
Newark.....	2.8	1.9	3.3	6.8	14.6
Cincinnati.....	3.4	3.0	3.4	7.8	30.1
Washington*.....	6.6	6.5	9.5	17.2	36.7
Indianapolis.....	7.3	3.8	10.3	20.5	30.4
New Orleans.....	9.3	7.4	17.5	20.9	35.6
Kansas City, Mo. ....	11.0	7.6	10.6	16.2	35.6

\* Enumerated population, Jan. 1, 1920.

The cities of Group 2 (from 300,000 to 500,000 population) show the same tendency to higher rates as was observed in the cities in Group 1, only two of the nine (Minneapolis and Milwaukee) experiencing a typhoid decrease in 1921 as compared with 1920 (Table 3). The increases are not large, however, except in Indianapolis and in Kansas City, Mo., the

changes in the Seattle, Cincinnati and Washington rates being very slight.

New Orleans again shows a relatively low rate. It is thought by the local health authorities that the number of imported cases, which doubtless swell the typhoid rate more or less in every large city, is excessively high in New Orleans, owing to the fact that there are no other large cities within twelve hours' travel and to other local factors. At all events, con-

TABLE 4.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 3 (FROM 200,000 TO 300,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Oakland.....	1.3	5.5	3.8	8.7	21.5
Providence.....	2.5	3.8	4.4	10.2	14.3
Portland, Ore. ....	3.0	3.5	4.5	10.8	23.2
Rochester.....	3.2	1.0	2.9	9.6	12.8
Jersey City.....	3.5	6.7	4.5	7.2	12.6
Columbus, Ohio.....	4.0	2.5	7.1	15.8	40.0
Denver.....	4.5	5.0	5.8	12.0	37.5
Louisville.....	5.5	5.5	9.7	19.7	52.7
Akron.....	5.7	3.7	....	....	....
St. Paul.....	7.1	2.1	3.1	9.2	12.8
Toledo.....	8.6	7.3	10.6	31.4	37.5
Atlanta.....	11.0	12.8	14.2	31.4	58.4

sidering the large negro population, the semitropical climate and other conditions, the typhoid figures in New Orleans for the last three years cannot be regarded as other than highly creditable.

Minneapolis, which had a particularly low typhoid death rate in 1921, suffered in March from an explosive outbreak of typhoid among the students in the University of Minnesota. Approximately 100 cases were reported from this source, and it was said that typhoid was carried into distant parts of the state by students returning to their homes during the Easter vacation. The cause was traced to a woman employee in the kitchen of the university cafeteria. Apparently this woman, while suffering from a mild case of typhoid, kept about her work, and it was presumed that contamination of the milk served in the cafeteria occurred through her agency. The death rate in this outbreak does not seem to have been very high, but the lesson was a sharp one. It seems strange that closer supervision was not exercised by the university authorities over those persons engaged in the handling and distribution of food, especially since a number of American universities have been using definite precautions for some years to protect their students against just such a happening.

Milwaukee maintains a surprisingly low typhoid rate by the application of water chlorination, as has been pointed out previously. The dangerously contaminated condition of the Milwaukee water supply necessitates unceasing vigilance in chlorination. The efficiency with which this procedure seems to be carried out constitutes a notable achievement in sanitation.

Kansas City, Mo., is at the bottom of the list in 1921, as it was in 1920. The water supply of this city has long been a source of concern to the city officials. A comprehensive report by a body of experts on the water-works situation was published during the year. The Missouri River is recommended as the most eco-

3. Perkins, R. G.: Typhoid Fever in Cleveland, Ohio, for the Years 1918, 1919, 1920, Pub. Health Rep. 36: 1095 (May 20) 1921.

4. Engineering News-Record, March 24, 1921.



nomical and feasible source. Analyses indicated that such pollution as exists would be easily removable by filtration. The consulting engineers advise pushing construction with all possible haste.

The cities of the third group (from 200,000 to 300,000 population) show less proportional increase than the

TABLE 5.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 4 (FROM 150,000 TO 200,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Worcester.....	3.2	1.7	3.5	5.0	11.8
Syracuse.....	3.9	4.0	7.7	12.3	15.6
Omaha.....	4.0	7.8	5.7	14.9	40.7
New Haven.....	4.7	6.1	6.8	18.2	30.8
Dayton*.....	5.2	7.1	9.3	14.8	22.5
Richmond.....	5.6	6.4	9.7	15.7	34.0
Memphis.....	9.0	8.0	27.7	42.5	35.3
Dallas.....	12.7	14.3	17.2	....	....
San Antonio.....	16.6	9.9	23.3	29.5	....
Birmingham.....	17.0	14.4	31.5	....	....

\* Enumerated population, Jan. 1, 1920.

larger cities (Table 4). In fact, the cities in this group showing an increase are in the minority. Louisville ties its low record of 1920, a sanitary achievement of note. Three Northern cities, Akron, St. Paul and Toledo, all had higher rates than Louisville in 1921. The increase in St. Paul (from 2.1 to 7.1) has received no explanation. At the time of the epidemic among the students of the University of Minnesota, St. Paul was virtually free from typhoid. Toledo continues to maintain a high rate for a Northern city. The average Toledo rate for the last five years is an indication that some of the conditions in that city need to be remedied. Atlanta has lowered its rate, compared with 1920. The rate of 11.0 in that city in 1921 would have been regarded a decade ago as a very low rate for any community, and as extraordinarily low for a Southern city.

Group 4 (from 150,000 to 200,000 population) shows a decline in six of the ten cities (Table 5). Five cities are in the Southern states, and all of these have higher rates than the five Northern cities, although

TABLE 6.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 5 (FROM 125,000 TO 150,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
Des Moines.....	1.4	....	....	....	....
Bridgeport, Conn.*.....	2.7	1.4	4.8	5.0	10.3
Grand Rapids.....	2.8	2.2	9.1	25.5	29.7
Springfield, Mass. ....	4.4	4.6	4.4	17.6	....
Paterson, N. J. ....	5.8	1.5	4.1	9.1	19.3
Seranton, Pa. ....	6.5	1.5	3.8	9.3	31.5
Hartford, Conn. ....	7.2	2.9	6.0	15.9	19.0
Houston, Texas.....	11.7	....	....	....	....
Youngstown, Ohio.....	15.0	6.7	....	....	....

\* Enumerated population, Jan. 1, 1920.

showing marked improvement over the rates of a decade ago. Memphis, for the second year in succession, has a very low rate, indicating continued success with water chlorination. It will be remembered that this method of treatment was introduced in Memphis after the serious 1919 water-borne outbreak, which

increased the rate to over 58. Richmond, in this group, is a close competitor with Louisville in Group 3 for the honor of the lowest rate among Southern cities; 1921 was the fifth consecutive year in which Richmond has had a typhoid death rate under 10.0, and the rate for 1921 was the lowest ever recorded, with the exception of 1919.

Syracuse maintains for 1921 a rate substantially the same as that reported in 1920, in spite of the fact that a milk-borne outbreak occurred in August and September, in which it is stated that there were as many as seventy-five cases on a single milk route. The mortality in this epidemic, however, does not seem to have been high. An important practical result of this outbreak was the passage of an ordinance requiring general milk pasteurization. It is safe to predict that proper enforcement of this regulation will result in still less typhoid in Syracuse in the future. It is unfortunate that a sharp lesson in the form of an explosive typhoid outbreak is often necessary before public opinion will support compulsory pasteurization. As such milk-borne outbreaks become more rare all over the country, each occurrence will attract greater

TABLE 7.—DEATH RATES FROM TYPHOID IN CITIES OF GROUP 6 (FROM 100,000 TO 125,000 POPULATION)

	Deaths from Typhoid per 100,000 Population				
	1921	1920	Average 1916-1920	Average 1911-1915	Average 1906-1910
New Bedford.....	2.3	10.6	6.0	15.0	16.1
Fall River.....	2.4	5.0	8.5	13.4	13.5
Yonkers.....	2.9	0.0	4.8	5.0	10.3
Tacoma.....	3.0	1.5	2.9	10.4	19.0
Norfolk.....	4.1	3.4	....	....	....
Albany.....	4.3	3.5	8.0	18.6	17.4
Wilmington.....	4.4	....	....	....	....
Spokane.....	4.7	6.7	4.9	17.1	50.3
Kansas City, Kan. ....	4.8	2.9	9.4	....	....
Lowell.....	5.2	2.7	5.2	10.2	13.9
Salt Lake City.....	5.7	5.9	9.3	13.2	....
Camden.....	6.6	3.4	4.9	4.5	....
Trenton.....	8.9	8.3	8.6	22.3	....
Fort Worth.....	10.7	....	....	....	....
Cambridge.....	10.8	2.7	2.5	4.0	9.8
Reading.....	11.7	5.6	10.0	31.9	42.0
Nashville.....	20.4	9.3	20.7	40.2	61.2

attention and will affect public opinion with more and more dramatic force. It is to be hoped that the swift retribution of negligence need not be too often repeated, and that other cities learning of the experience at Syracuse will take the lesson to heart for themselves.

The low death rate in New Haven (4.7) is typical of the change that has taken place in the last two decades in nearly all reasonably clean, well-administered American cities. Ten years ago the typhoid rate in New Haven was 23.44, and fifteen years ago it was 52.5. At present, certain causal factors that a few years since would have been overlooked or regarded as relatively negligible are now matters of concern. A considerable proportion of the typhoid in New Haven is said to occur among boys who have indulged in swimming in the polluted water of the harbor.

Group 5 (from 125,000 to 150,000 population) and Group 6 (from 100,000 to 125,000 population) show greater irregularities in their typhoid rates from year to year than do the larger cities (Tables 6 and 7). This would be expected on statistical grounds. Four



cities (Des Moines, Wilmington, Houston and Fort Worth) appear for the first time in our tables. The two Southern cities have higher rates than the Northern cities, but their relative position is by no means discouraging. Des Moines, on its first appearance, broke gloriously into the honor class, with one of the lowest typhoid rates in the country. The cities in these two groups (especially Group 6) are probably best compared by their five year averages. New Bedford, which had a relatively high rate in 1920, has the lowest rate in its group in 1921. Cambridge, Mass., had in 1921 the highest rate for many years, higher, indeed, than any five-year average since 1906. Is anything wrong with the water supply? Nashville, after a splendidly low rate in 1920, recorded a rate above 20 in 1921.

There is no doubt that 1921 was, relatively speaking, a "typhoid year." Not only did the majority of cities experience an increase—although generally slight—over the typhoid rate of the previous year, but the Honor Roll, including cities with a rate under 2.0, numbered only five, as against ten in 1920 and eight in 1919. Cities with a rate over 10.0 increased in number from five in 1920 to eleven in 1921. The average death

TABLE 8.—DEATH RATES FROM TYPHOID IN 1921

Honor Roll from (0.0 to 2.0)			
Chicago.....	1.1	Des Moines.....	1.4
Minneapolis.....	1.2	Milwaukee.....	1.9
Oakland.....	1.3		
First Rank (from 2.0 to 5.0)			
New York.....	2.1	Cincinnati.....	3.4
Seattle.....	2.2	Jersey City.....	3.5
Philadelphia.....	2.3	St. Louis.....	3.8
New Bedford.....	2.3	Syracuse.....	3.9
Fall River.....	2.4	Omaha.....	4.0
Providence.....	2.5	Columbus, Ohio.....	4.0
Los Angeles.....	2.6	Norfolk.....	4.1
Bridgeport, Conn. ....	2.7	Pittsburgh.....	4.1
Grand Rapids.....	2.8	San Francisco.....	4.2
Newark.....	2.8	Buffalo.....	4.2
Yonkers.....	2.9	Albany.....	4.3
Tacoma.....	3.0	Springfield, Mass. ....	4.4
Portland, Ore. ....	3.1	Wilmington.....	4.4
Boston.....	3.1	Denver.....	4.5
Rochester.....	3.2	New Haven.....	4.7
Worcester.....	3.2	Spokane.....	4.7
Cleveland.....	3.4	Kansas City, Kan. ....	4.8
Second Rank (from 5.0 to 10.0)			
Dayton.....	5.2	Camden.....	6.6
Lowell.....	5.2	Washington.....	6.6
Baltimore.....	5.4	St. Paul.....	7.1
Louisville.....	5.5	Hartford.....	7.2
Richmond.....	5.6	Indianapolis.....	7.3
Akron.....	5.7	Toledo.....	8.6
Salt Lake City.....	5.7	Trenton.....	8.9
Detroit.....	5.8	Memphis.....	9.0
Paterson, N. J. ....	5.8	New Orleans.....	9.3
Seranton.....	6.5		
Third Rank (from 10 to 20)			
Fort Worth.....	10.7	Reading.....	11.7
Cambridge.....	10.8	Dallas.....	12.7
Kansas City, Mo. ....	11.0	Youngstown, Ohio.....	15.0
Atlanta.....	11.0	San Antonio.....	16.6
Houston.....	11.7	Birmingham.....	17.0
Over 20			
Nashville.....	20.4		

rates by groups (Table 9) also indicate that the typhoid increase was widespread. The actual rate increase for the whole group of sixty-nine cities with a population of 28,291,435 is, however, not matter for serious concern. The 1921 typhoid rate for all these large cities combined was the lowest on record, with the single

exception of 1920 (Table 9), and was less than half the rate for 1916. Once before in the course of these annual typhoid calculations (1913, Table 10) a slight increase over the rate of the preceding year has occurred. This was followed the next year by a substantial decrease. There is no reason to conclude that

TABLE 9.—AVERAGE DEATHS FROM TYPHOID PER HUNDRED THOUSAND IN EACH GROUP, 1916, 1917, 1918, 1919, 1920 and 1921

Group	Year	No. of Cities	Total Population	No. of Typhoid Deaths	Av. Deaths per 100,000
1	1916	9	13,743,746	854	6.2
1	1917	9	14,027,263	774	5.5
1	1918	9	13,809,901	598	4.3
1	1919	9	15,019,516	463	3.1
1	1920	12	16,526,740	460	2.8
1	1921	12	16,851,750	460	2.7
2	1916	10	4,053,281	344	8.5
2	1917	10	4,150,099	329	7.9
2	1918	10	4,372,088	298	6.8
2	1919	10	4,511,181	204	4.5
2	1920	9	3,463,760	141	4.1
2	1921	9	3,498,783	174	4.9
3	1916	10	2,635,983	248	9.4
3	1917	10	2,701,029	173	6.4
3	1918	10	2,773,716	193	6.9
3	1919	10	2,839,092	134	4.7
3	1920	12	2,951,373	142	4.8
3	1921	12	2,990,971	148	4.9
4	1916	14	2,250,991	330	14.7
4	1917	14	2,310,372	307	13.3
4	1918	14	2,449,736	331	13.5
4	1919	14	3,564,860	210	8.2
4	1920	10	1,707,624	135	7.9
4	1921	10	1,740,300	143	8.2
5	1916	17	1,983,918	235	11.8
5	1917	17	2,031,313	229	11.3
5	1918	17	2,053,215	240	11.7
5	1919	17	2,103,710	115	5.5
5	1920	7	962,436	46	4.8
5	1921	8	1,123,181	70	6.2
6	1920	15	1,718,166	83	4.8
6	1921	17	1,948,414	132	6.7
Total...	1916	60	25,667,919	2,011	8.1
Total...	1917	60	25,220,076	1,812	7.2
Total...	1918	60	25,458,656	1,660	6.5
Total...	1919	60	27,028,359	1,126	4.2
Total...	1920	65	27,330,099	1,007	3.7
Total...	1921	69	28,291,435	1,138	4.0

TABLE 10.—TOTAL AVERAGE TYPHOID DEATH RATE (1910-1921)

	Total Population (57 Cities)* Estimated by the U. S. Census Bureau Methods	Typhoid Deaths	Typhoid Death Rate per 100,000
1910.....	20,996,035	4,114	19.59
1911.....	21,545,014	3,391	15.74
1912.....	22,093,993	2,775	12.56
1913.....	22,642,972	2,892	12.77
1914.....	23,191,951	2,408	10.38
1915.....	23,740,930	2,068	8.71
1916.....	24,205,359	1,842	7.61
1917.....	24,740,068	1,647	6.65
1918.....	24,971,278	1,557	6.23
1919.....	25,526,186	987	3.87
1920.....	26,154,013	921	3.52
1921.....	26,561,469	978	3.68

\* Eleven cities are omitted from this summary because data for the full period are not available.

the end of typhoid reduction has yet been reached. Even now, 1,138 deaths from typhoid in a population of more than 28,000,000 must be regarded as too many.

**The Highest Wisdom.**—The mass of people believe that all which is difficult to understand is deep, but it is not so. What is difficult to understand is immature, vague, and often false. The highest wisdom is simple, clear and goes through the brain straight into the heart.—Strindberg, "Zones of the Spirit."



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SATURDAY, MARCH 25, 1922

## TYPHOID FEVER IN THE CITIES OF THE UNITED STATES

THE JOURNAL's tenth annual survey of typhoid fever in the large cities of the United States, printed elsewhere in this issue,<sup>1</sup> is marked by the first break in the decline that until now has been noted each year since 1913. The increase, however, is so slight as to be almost negligible from the public health point of view. Not all cities have shared in this increase, and in some a definite typhoid diminution has been observed. There is no doubt, however, that 1921 was in many localities what used to be termed "a typhoid year." This is shown not only by the distinct, if slight, reversal of the typhoid curve of the cities under consideration, and by the frequent comment, made by many health departments, about excessive typhoid in the summer of 1921, but also by the reported case rates<sup>2</sup> for the first eleven months of 1921. These case rates, although open to many and obvious sources of error, indicate an excessive prevalence of typhoid, especially in the months of July and August, as compared with the same months of 1920.

An absolutely uninterrupted decline in city typhoid rates is hardly to be expected under any conditions, but it is interesting to speculate about the factors that may have led to the typhoid excess in 1921 over 1920. The suggestion that sanitary precautions were being relaxed may be quite readily dismissed, since there is no evidence whatever that the campaign against typhoid by municipal authorities has lessened in thoroughness and vigilance. All *a priori* reasoning is also against this view. The opinion has been expressed that the effect of typhoid vaccination was wearing off so that the number of susceptible individuals in the community was increasing. Such meager facts as we have do not support this opinion, but rather favor the assumption that a considerable proportion of the recruits who were vaccinated in the army camps still possess a measure of immunity to typhoid.

The excessively hot weather of the summer of 1921 in many parts of the United States may, on the other

hand, have been a factor in raising the frequency of typhoid occurrence, either indirectly by increasing the amount of bathing in polluted waters—as conjectured to be the case in many localities—or directly, by increasing human susceptibility to typhoid infection. We must move cautiously in attributing much importance to the latter factor, but it is to be reckoned a possibility. The relatively high typhoid case rates in July and August, 1921, point in this direction. It is tempting to conclude that the abnormally hot summer was in large part responsible for the higher typhoid rates in certain localities, but a dogmatic assertion is hardly warranted.

From the returns received and other information gathered, there can be no doubt that the number of typhoid deaths in the large cities is much greater than the number that should be properly debited to infection contracted within the cities themselves. Hundreds of patients contracting infection in neighboring towns and villages are brought into the city hospitals, and many city residents themselves acquire infection while traveling. It might be fairly estimated that not more than two thirds or possibly one half of the typhoid deaths occurring in the larger American cities at the present time are due to infection acquired within the cities themselves.

The outlook for continued typhoid reduction is still promising. City water supplies in the larger cities of the United States, thanks to filtration and chlorination, have virtually ceased to be bearers of typhoid infection. Milk supplies, likewise, particularly in the larger cities where general pasteurization is in force, are relatively rarely the cause of typhoid outbreaks. Wherever it is true that typhoid carriers are at present the chief agent in keeping alive typhoid infection, the outlook is distinctly encouraging. Elimination of the major sources of typhoid will sooner or later operate to lessen the number of carriers, so that carrier infection will become less frequent and more easily detected. If we may venture a prediction, it is that the year 1922, or, at all events 1923, will have a lower typhoid rate than 1920, the lowest record heretofore reached.

## FACTORS IN THE RESISTANCE TO TUBERCULOSIS

Bearing in mind the widespread existence of infection with the bacillus of tuberculosis, one cannot avoid the conviction that important natural devices which confer at least a relative immunity to the fatal encroachment of the disease must occur and operate quite effectively; otherwise, it is not easy to explain the escape of so many of those early infected from the more untoward consequences of bacterial invasion. These defenses, whether natural or acquired, have been sought with great concern by investigators; for an understanding of them might lead to a more successful attack on the tuberculosis problem. Following Metch-

1. Typhoid in the Large Cities of the United States in 1921, this issue, p. 890.

2. Typhoid Fever in the United States, Pub. Health Rep. 37:349 (Feb. 17) 1922.



nikoff's epoch-making discovery of phagocytosis as a protective device of the body, attention was directed to the rôle of the leukocytes in the combat against tuberculosis. However, recent writers in *THE JOURNAL*<sup>1</sup> have not hesitated to state that, in the light of the latest evidence, "the lymphocyte has outlived its day of importance."

It cannot be denied that the vascular endothelium may play a part in the resistance of the body tissues to tuberculosis. Precisely how significant this function, the importance of which has recently been emphasized by several investigators,<sup>2</sup> may be remains to be ascertained. In addition to such cellular types of immunity, attention has also been directed to so-called "humoral" means of defense which are usually represented by characteristic antibody formation. The outlook in this direction likewise has not been very encouraging. Specific bactericidal products comparable with the immune substances developed in many other forms of infection have not yet been demonstrated to attain any striking importance in the development of resistance. Hence both the humoral and the cellular mechanisms of resistance "leave much to be explained."

Recently, however, Corper<sup>3</sup> and his associates in the Research Department of the National Jewish Hospital for Consumptives, at Denver, have directed attention to a purely chemical factor that may be active in the determination of the individual resistance to tuberculosis. They have observed that 3 per cent. of carbon dioxid causes some inhibition of the growth of the tubercle bacillus in the test tube, and that 15 per cent. is tuberculocidal. Tubercle bacilli will not grow in a carbon dioxid-free atmosphere. Cultures of tubercle bacilli buried in the tissues of animals and permitted to acquire the carbon dioxid concentration of the body are definitely inhibited in their growth, while other cultures similarly buried, except that ingress of atmospheric air is permitted, show no inhibition. When viable tubercle bacilli are placed in a closed system, their growth becomes inhibited as the carbon dioxid which the organisms elaborate approaches a concentration of approximately 5.5 per cent., at which concentration respiration of these micro-organisms is also reduced to a minimum. In a closed system the end-products of metabolism automatically inhibit the growth of the organisms that give rise to them.

As a concentration of carbon dioxid, namely, 5.5 per cent., sufficient to inhibit the growth of the tubercle bacillus definitely may occur under normal conditions in the body, it is perhaps not too visionary to assume that this product of metabolism may be of no little

importance in relation to tuberculosis. It has been said<sup>1</sup> that this finding reopens the consideration of the influence of fatigue, exhaustion, exposure, metabolic diseases, etc., as probable etiologic factors in the causation of tuberculosis in view of their ability to alter the carbon dioxid content of the body. Experience warns us against undue enthusiasm or false steps in a field in which so many hopes of scientific progress have been shattered in the past generation. Nevertheless, all new findings, as those gained by Corper, deserve a respectful consideration.

Physicians often express wonder that the students of chemotherapy have not yet discovered a way to attack the tubercle bacillus by the use of pharmaceutical chemicals. The analogy of the spirochetes, trypanosomes and malarial parasites, on which comparisons are so often based, is somewhat misleading. Wells<sup>4</sup> has pointed out that the remoteness of the tubercle bacillus from the circulating blood stream, the avascularity of the tubercle, and the immediate juxtaposition of necrotic cells stand in the way of direct chemical attack. The introduction of potent drugs to places difficult of access in the tissues represents an undertaking to tax the intelligence and resourcefulness of more than one student of tuberculosis in the near future.<sup>5</sup>

#### DOES FATIGUE CONTRIBUTE TO SUSCEPTIBILITY TO DISEASE?

During the late war, considerable study was devoted to the factors contributing to bodily fatigue, because this condition results in decreased efficiency. Whatever the attitude may be toward laxity of effort in the every-day life of peace times, it becomes a matter of public concern that there shall be no human slackers in periods of national peril. Recently a distinction has been proposed between the "fatigue that is a natural result of exertion, from which there is quick recovery, and overfatigue," which makes the return to health more difficult. This habitual overfatigue has of late been held responsible in particular for much of the malnutrition of children.<sup>6</sup> Fatigue is also charged with rendering the body more susceptible to infection. Thus, a popular treatise on personal hygiene states conspicuously and with apparent assurance that "avoiding undue fatigue will help greatly in preventing colds."<sup>7</sup>

One of the functions of experimental science is to ascertain whether our personal prejudices and theoretical dogmas square with the evidence furnished by rigorous test and unrelenting critical analysis. It tends to impede rather than facilitate progress in any

1. Corper, H. J.; Gauss, Harry, and Rensch, O. B.: Resistance to Tuberculosis, *J. A. M. A.* **76**: 1216 (April 30) 1921.

2. Foot, N. C.: *J. M. Res.* **40**: 353 (Sept.) 1919; *J. Exper. Med.* **32**: 513, 533 (Nov.) 1920; **33**: 271 (Feb.) 1921. Permar, H. H.: *J. M. Res.* **42**: 9 (Sept.) 1920. Karsner, H. T., and Swanbeck, C. E.: *Ibid.* **42**: 91 (July-Sept.) 1920.

3. Corper, H. J.; Gauss, Harry, and Rensch, O. B.: Studies on the Influence of Carbon Dioxide on Resistance to Tuberculosis, the Effect of Carbon Dioxide on the Tubercle Bacillus, *Am. Rev. Tuberc.* **5**: 562 (Sept.) 1921.

4. Wells, H. G.: *Interstate M. J.* **21**: 221, 1914.

5. Gauss, Harry: The Chemotherapy of Tuberculosis, *Colorado Med.* **18**: 79 (April) 1921.

6. Emerson, W. R. P.: Nutrition and Growth in Children, New York, D. Appleton & Co., 1922, p. 80.

7. Fisher, Irving, and Fisk, E. L.: How to Live, Ed. 15, New York, Funk and Wagnalls, 1919, p. 370.



field of human endeavor, whether it be in social welfare or hygienic prophylaxis, to preach unwarranted doctrines. Hence the observations of Oppenheimer and Spaeth<sup>8</sup> at the School of Hygiene and Public Health at Johns Hopkins University, bearing on the popular medical belief that a fatigued individual is more susceptible to disease than is one not fatigued, are worthy of mention. In their studies of rats the Baltimore investigators found that fatigue, by which was meant a condition of temporary exhaustion produced by excessive muscular exertion, did not markedly alter the susceptibility of these animals to toxins or infectious agents. If anything, there was a slight tendency to increased resistance to tetanus toxin given to fatigued rats; and they also showed a greater resistance to experimental infection with pneumococci.

It goes without saying that a few tests of this sort do not warrant any extravagant statement on the possible interrelations of fatigue or overfatigue and susceptibility to disease.<sup>9</sup> They do warn, however, against the practical exploitation of theories that are far from being demonstrated. Progress is never well served by insistence on what we hope or wish, rather than what we know to be true.

## Current Comment

### SOME MODES OF TRANSMISSION OF TULAREMIA

In a recent editorial, attention was directed to the specific infectious disease to which Francis of the U. S. Public Health Service has given the name tularemia. Subsequent reports by Francis and Lake<sup>10</sup> add further interesting chapters to the possibilities of transmission which form a necessarily important consideration in the study of the problems of any disease of infectious character. It is now proved that the common bedbug, *Cimex lectularius*, is capable of transmitting tularemia from an infected to a healthy white mouse. The offending micro-organism, *Bacterium tularense*, suffers no apparent diminution of virulence by reason of long residence in bedbugs. For example, the feces of insects infested four months previously proved fatal to experimentally inoculated animals. Such facts serve to indicate the possibilities of keeping alive the agencies of infection over long periods of time, not only through the presence of infected rodents, but also through the survival in blood-sucking insects. This is further substantiated by the new demonstration that the mouse louse (*Polyplax serratus*) and likewise blood-sucking mites of the species *Liponyssus isabellinus* removed from an infected white mouse may act as a potent

infection carrier.<sup>11</sup> Thus, the evident persistence of *Bacterium tularense* in a considerable variety of parasitic hosts lends a somewhat unusual danger to the infective micro-organism by giving to it chances of survival shared by comparatively few of its competitors among the bacterial enemies of man.

### A PIONEER EXPONENT OF SPECIFICNESS IN INFECTION AND IMMUNITY

There exists for every infection a specific germ, but it can produce disease only in animals which have specific receptors for it. The lack of receptors accounts for natural immunity. The acquired immunity is of the same athreptic nature resulting from exhaustion of the specific receptors.

The first two of these sentences would not be out of place in a modern textbook. The last phrase, which is not quite up to date, would arouse the suspicion that the author had been asleep for thirty years. The author, however, has been sleeping for 200 years, and the theory given is merely a translation of the words of Thomas Fuller into our modern nomenclature. Recently Dr. Ludvig Hektoen<sup>12</sup> has presented a study of Fuller (1654-1734), his interest in this almost unknown English practitioner having been stimulated on reading:

The pestilence can never breed the Small-Pox, nor the Small-Pox the Measles, nor they the Crystals or Chicken-Pox, any more than a Hen can breed a Duck, a Wolf a Sheep, or a Thistle Figs; and consequently, one Sort cannot be the Preservation against any other Sort.

The study of Fuller's work revealed other extremely interesting notions. He did not know the term immunity, and instead of receptors he spoke of receptacles or more often of different inborn ovula (or: "something equivalent to ovula"), which can be impregnated by the venoms of the different diseases, so that a more exact translation would be: cells with specific receptors. There is no difference, save in terminology, between his views and those which inaugurated the new era of bacteriology and immunology in the last century. His theory about the ovula serves to remind us of Claude Bernard's postulate of a physiologic basis of the exanthems, a problem that remains as yet unsolved. The famous lock and key simile is anticipated surprisingly well by Fuller:

When they (i. e., the venomous effluvia) cluster together, they turn into such Composite, as the Pores and Receptacles of our bodies are fit to receive into them; *even as a Mortice is fitted to a Tennant*. Hence may some Reason be excogitated, why particular Animals are affected by peculiar poisons.

The ideas of Thomas Fuller were not fully appreciated—in his own time or afterward—but they returned. Even Fuller had his predecessors, but none of them, so far as we know, comes so near to our modern conceptions of immunity. To the observation and speculation of long ago, the last century added methods of investigation and securing relatively exact facts. The history of medicine makes us proud of the progress achieved in our times, but the clear insight of many

8. Oppenheimer, Ella H., and Spaeth, R. A.: The Relation Between Fatigue and the Susceptibility of Rats Toward a Toxin and Infection, *Am. J. Hyg.* **2**: 51 (Jan.) 1922.

9. Other negative evidence is given by Abbott, A. C., and Gildersleeve, N.: The Influence of Muscular Fatigue and of Alcohol upon Certain of the Normal Defenses, *Univ. Pennsylvania M. Bull.* **23**: 169, 1910.

10. Francis, Edward, and Lake, G. C.: Tularemia Francis 1921, IV, Transmission of Tularemia by the Bedbug, *Cimex Lectularius*, *Pub. Health Rep.* **37**: 83 (Jan. 20) 1922.

11. Francis, Edward, and Lake, G. C.: Tularemia Francis 1921, V, Transmission of Tularemia by the Mouse Louse *Polyplax Serratus* (Burm.), *Pub. Health Rep.* **37**: 96 (Jan. 20) 1922.

12. Hektoen, Ludvig: Thomas Fuller, Country Physician and Pioneer Exponent of Specificness in Infection and Immunity, *Bull. Soc. Hist. of Med.*, Chicago, 1921.



old authors warns us that while we may be accumulating facts that will remain, we are doing it on the basis of old ideas that return. Facts remain, but ideas return.

#### SMALLPOX IN THE UNITED STATES

Since the beginning of the annual compilations in 1900, the highest death rate from smallpox in the registration area was 6.6 per hundred thousand population in 1902. In 1904 the rate was 2.1, and since that time it has never reached 1.0 per hundred thousand population. The Bureau of the Census has just issued its report of the deaths from smallpox in the registration area for the period from 1916 to 1920. From time to time, outbreaks of smallpox occur in small sections of the population, indicating that the danger of smallpox in an unvaccinated group of persons must not be overlooked. The epidemic at Poteau, Okla., described in this issue, is a typical example. Another example of the same type is the general death rate in Louisiana. In 1920, there were 167 deaths from smallpox in that state, and the rate was 9.2, contrasted with a rate of 9.8 in 1919 and of 1.0 in 1918. In this connection, it is interesting to compare the colored with the white rate for Louisiana. The colored rate for 1920 was 15.4, as compared with 5.3 for the white race, and the colored rate for 1919 was 21.2, as compared with 2.4 for the white race. Normally, the rates for the two races in Louisiana are approximately the same, i. e., averaging 2.0 for 1916, 1917 and 1918.

#### VACCINATION AGAIN DEMONSTRATED AN EFFICIENT PROTECTION

For many years, as pointed out by the Bureau of the Census in a recent report, such outbreaks of smallpox as have occurred in this country have been limited to small sections of the population. Typical of such local outbreaks was an epidemic at Poteau, Okla.,<sup>1</sup> in December, 1921. December 5, a prisoner in the county jail at Poteau was taken sick. He had been in Kansas City, Mo., from November 16 to 27, during which time an epidemic of smallpox of a virulent type was present in that city. This man had been vaccinated forty-four years previously, but not since. The case was reported to the city health officer, December 18, thirteen days after the man was taken sick. In the meantime he had been in contact with thirty other prisoners and with the county officials. December 19, some of the other prisoners, *who desired it* (italics ours), were vaccinated, and from Dec. 21, 1921, to Jan. 5, 1922, eighteen cases appeared among the other prisoners. Although the original patient recovered, nine of the prisoners in whom the disease developed died during the period January 3 to 13. Every prisoner in the jail who had not been vaccinated contracted the disease. Ten prisoners who had been successfully vaccinated within the three preceding years in the army did not contract the disease, although they had been in intimate contact with virulent cases. January 5, five prisoners broke jail and were not apprehended. One was reported to have died

in Alabama. In addition to the eighteen cases occurring in the jail, nineteen cases occurred in the general community, fourteen in Poteau and five elsewhere in the county. Of the fourteen smallpox patients in Poteau, twelve died during the period January 1 to 18, and, of the five outside Poteau, three died. There resulted, therefore, from the original source of infection at the county jail, thirty-eight cases with twenty-four deaths. The state health commissioner assumed charge of the epidemic, January 15, and immediately instituted control measures. All persons who refused to be vaccinated were placed under quarantine, and all the small towns in the vicinity of Poteau were quarantined against that city. The epidemic has now subsided. The effects of this epidemic again emphasize what has been known for more than a hundred years—that smallpox is a preventable disease, and that vaccination protects efficiently.

#### LAY WRITERS ON SCIENTIFIC MEDICINE

From time to time lay writers erupt in the popular magazines with sensational discussions of medical subjects on which they are usually none too well informed. The appearance of such essays is invariably followed by the receipt at this office of protests from physicians who feel that *THE JOURNAL* should expose such misrepresentations of medical science. As one correspondent expresses it:

I feel that this conglomerate mass of alleged logic is a direct insult to every physician, and that a just criticism in the name of the profession as a whole should be laid before the editor of this magazine.

In this particular instance, the article referred to is entitled "Overcoming the Objection to Being Human," its author being one Fred C. Kelly, and its place of publication the current issue of the *Cosmopolitan*. The editor of the magazine very well characterizes Mr. Kelly's scientific importance in his introductory note: "Fred C. Kelly," he says, "is a writer who is not afraid to add two and two together and get five—if he thinks five is the proper answer." Mr. Kelly's article contains much that is true with unscientific interpretation, and a little that is untrue and therefore not susceptible of scientific interpretation. The article is featured by an illustration, under which is the caption: "When the medical profession hit on the germ theory it was only natural to give germs credit for a host of ills." A safe rule for either a scientific physician or a trusting layman to follow would be: As soon as an author discusses germs and their causation of disease as a theory, he exhibits his ignorance of scientific medicine.

#### THE APOTHEOSIS OF THE OFFICE GIRL

One of the recent developments in the business side of medical practice is the so-called "editorial secretary," or, as she sometimes signs herself, "Secretary to Dr. Smith." The idea is splendid. It carries to the recipient of letters, so signed, the suggestion that the doctor is so busy with his practice and that he is such a prolific and important contributor to medical literature that he has not sufficient time to dictate a letter

1. Account of Smallpox Outbreak at Poteau, Oklahoma, Pub. Health Rep. 37: 486 (March 3) 1922.



or to go over his manuscripts when he submits them for publication. The editor receiving such a contribution must naturally wonder whether the doctor actually had time to write it. Certainly, this innovation is an improvement on that old rubber stamp, "Dictated, but not read."

## Association News

### ANNUAL CONGRESS ON MEDICAL EDUCATION, LICENSURE, PUBLIC HEALTH AND HOSPITALS

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#### ORGANIZATION OF THE PUBLIC FOR COOP- ERATION WITH THE MEDICAL PROFESSION

THURSDAY, MARCH 9—MORNING

##### The Medical Profession and the Public

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: There has never been a time when the laity, both individually and collectively, has been so appreciative of the medical profession and of its work as at present. Wealthy persons are giving money in large sums to the medical schools, to medical research institutions and to special medical investigations, such as those connected with tuberculosis and cancer. Congress is apparently willing to vote millions on a fifty to fifty proposition to aid states in taking care of the physical needs of the people. There seems to be no limit to the sums demanded for the ex-soldier, both the physically disabled and those in sound health. State legislatures are supporting their medical schools with a liberality hitherto unknown. In a spirit of great generosity they are caring for the physical needs of the unfortunate of every class. State boards of health are receiving liberal appropriations and are being given wide authority.

The Council believes it is of prime importance that the public in general should be instructed in all matters of both preventive and curative medicine which are not strictly technical and professional. In its most modest form, this instruction should be given in the primary grades of the public schools and should continue, with such enlargements and modifications as the intellectual advancement of the child may indicate, through the secondary schools and into the universities. Long ago a wise German said: "Permit me to educate two generations, and I will change the world." Teach the child what it is able to comprehend concerning the nature and transmission of communicable diseases, making more specific and particular this instruction as the child advances intellectually, and within a few generations there will not be enough ignorant of these matters to keep alive any superstitious or unscientific cult. The Council has been so sure of the wisdom of this procedure that it has drafted a model bill for introduction into the legislature of states which do not already provide for such instruction.

Along the line of information to the public, the Council has urged the Board of Trustees to publish for the laity a journal which should not only cover sanitation and epidemiology, but should also include discussions on health and diseases in all their aspects, as far as the layman can understand. The time has come when the medical profession, having demonstrated its usefulness to the public so fully and so convincingly, can no longer stand apart from intelligent laymen, but must combine with them and act together. The Council believes that such a journal will be an investment which will bring a large return and carry the medical profession a long way toward its goal.

Much is being said, both inside and outside the medical profession, about "state medicine." Already medicine is largely regulated and controlled by the state. The state boards of medical licensure fix the requirements for admission to medical schools, have authority to pass upon the curriculum, determine what schools are, in their opinion,

reputable, admit to their examinations graduates of only those schools of which they approve, and finally, test by examination every individual who applies to the board for a license. In all state university medical schools the education of medical students, as well as of those in all other departments, is provided by the state. The state determines the fitness of every individual who desires to practice medicine within its boundaries. To this extent, medicine is already under state control.

I am thoroughly convinced that the greatest need in our endeavors to carry the benefits of scientific medicine to all our citizens lies in lack of facilities within the reach of most physicians to practice scientific medicine.

The following are basic facts, a recognition of which is essential in any move to carry the benefits of scientific medicine to all the people:

1. Every legally qualified physician in the United States should, so far as possible, have at his service every scientific facility essential to make a correct diagnosis and to provide the best possible treatment, medical or surgical, as the case may be, for his patient.

2. He needs a hospital properly equipped with chemical, bacteriologic, roentgen-ray, and other facilities. He also needs this hospital where he can treat his emergency and other serious cases with everything at hand which he may need.

After having studied this matter for quite two years, your Council has, individually and collectively, come to the conclusion that the community hospital, as provided for in the Iowa law, should be encouraged.

##### Lessons of the Past

DR. FREDERICK R. GREEN, Chicago: The development of our health laws and health enforcement machinery has been mainly inspired and promoted by physicians. Physicians are not a body of supermen or of superlatively wise advisers. We are simply a body of men with special training, experience and qualifications in the knowledge of the causes and the methods of preventing human diseases, and in their diagnosis and treatment.

The protection of the public against disease is a public and not a professional function. The enactment and enforcement of health laws are functions of the state, just as are the enactment and enforcement of laws for the protection of property. When we attempt to draft laws, we generally fail. Whenever an attempt is made to assume functions for which we are not trained and to perform activities for which we are not fitted, we confuse our attitude to the public, and misunderstanding and confusion result.

No effective cooperation can possibly take place between two groups until the functions and relative responsibilities of each are clearly defined and understood. We must agree on a definite policy and must clearly define our own functions before we ask the public to cooperate with us. It is the duty of physicians to furnish facts. It is the duty of the people and the legislatures to make the decisions. In those few cases in which the personal rights or privileges of physicians are involved, we should take a frank and open stand for the protection of our own interests without subterfuge or concealment.

The situation today may be thus summarized: 1. The prevailing system of separate independent health organizations is not leading to any effective organization of the public for health work. 2. There is no prospect that this method will ever result in the effective organization of the public on account of the comparatively small number of people interested in each organization and the impossibility of uniting these organizations into a common body. 3. The various organizations in the field have not common plans of campaign, and consequently operation is very expensive, resulting in duplication of officers and equipment, with decreased efficiency. 4. The multiplication of organizations and the constant appeals to the public being made by each body are confusing and irritating, rather than educating the public. Witness the number of tag dags and drives that have become a nuisance in most of our cities. 5. The competition between these organizations results in the promotion of half-baked and ill-considered public health policies, or of sensational schemes to catch public attention. 6. The separate organizations are each so absorbed in promoting and administering their own



organization that no time, energy or money is available for investigation or for the development of a unified public health program.

Summing up the present situation, the following propositions may be assumed: 1. The present organization situation in the public health field is not satisfactory or effective. 2. The public health movement is rapidly passing out of the propaganda stage and is entering a period in which constructive effort should predominate. 3. The public health movement can no longer be confined to one class or profession. 4. The public health movement has passed the charitable and philanthropic stage. Any plans for the future must consider health as a public function and must include the entire public, not as beneficiaries, but as participants.

If these assumptions are sound, then there are two tasks that must be accomplished if the medical profession wishes to maintain its leadership. These are, first, our medical organizations must be made effective working machines instead of paper organizations, and second, there must be devised some plan by which the public can be effectively organized as allies of the medical profession.

#### Protecting the Public Health by Legislation

DR. HOLMAN TAYLOR, Fort Worth, Texas: The state medical association must continue in operation its legislative machinery. It must see to it, as heretofore, that legislators are elected who are at least fair-minded, intelligent and to the greatest extent possible informed on the medical problems likely to be legislated upon. It is not necessary or even best that these gentlemen be unequivocally pledged to the ideas of the medical profession. Such a demand as that lays the predicate for the subsequent charge by those who are not basically in sympathy with our contentions, that legislation by coercion is being practiced. While it is a fact that legislation by coercion is the accepted procedure, and while it appears that it is apparently the only successful way of securing laws on controversial subjects, at the same time the charge does not sound good, and it is wrong to secure the passage of laws in any such manner. The important thing is to establish ourselves in the estimation of the prospective legislature as worthy of credence and as informed on the subjects involved, and as actuated by broad-minded and unselfish interest in the public welfare.

The medical profession, collectively and individually, must be informed and thoroughly educated on the whole problem of medical and public health legislation, and on the individual subproblems likely to be considered in the near future.

The lay public must in a like manner, if through more devious ways, be educated with regard to the medical and public health requirements of the present and the possibilities of the future.

It occurs to me that the most feasible plan is to unite those members of county medical societies who are willing to study the problems of medical legislation with that portion of the lay public which is at the same time intelligent and level-headed, and which may be induced through a consideration of the seriousness of the situation to give the time and study necessary to get results. In the formation of organizations of this character, it would seem wise to retain for the medical profession effective, if advisory, control over the type of individuals to be included.

#### DISCUSSION

DR. ALEXANDER C. ABBOTT, Philadelphia: For the last few years, the statement has been made more and more frequently that, if the medical profession does not take the leadership in this movement, the layman is going to do so. I have been impressed by the argument that the medical profession has before it an obligation as an advisory body; that, so far as legislation is concerned, it can best be left in the hands of an educated public, and we are rapidly getting an educated public. Our attitude to the public should be: Here is what we believe to be the best course to pursue for your good. If an educated public will get busy, aside from any professional interference, and go to the legislatures, and say we are convinced that the information given to us on this subject is sound and to the best interests of the community at large, and we want favorable legislation, the result will be that appropriations infinitely larger will be placed in the

hands of those exacting that legislation than would otherwise be the case.

DR. CHARLES E. HUMISTON, Chicago: I am impressed with one thing which has been mentioned in this discussion so far, that the medical profession and its representatives on the scientific side have developed remarkably in the last fifty years. Our knowledge of disease is comprehensive. With my knowledge and study of the *modus operandi* of the enactment of medical laws and of politicians and the personnel of the legislature, I should say that the medical profession is just beginning to understand its problems. We are too optimistic altogether. The education of the public is slow of accomplishment. Public opinion has not changed much fundamentally since the days of Pericles. Medical science, however, has advanced by leaps and bounds in the last fifty years, but human nature has not changed. To expect the public to rise to an emergency is to expect something that will not come to pass. The ordinary member of our law-making body is concerned largely with holding his job, and if we overlook that point we overlook something that is effective. We must influence legislation through the education of the public, and our work must be more effective than simply expressions of the advisability of doing this thing or that thing. I am in favor of certain measures of coercion; I am not at all in favor of leaving the general public to suffer until the general public is aroused. I would be sorry to see outside associations aroused to the necessity of organization for something the American Medical Association can do. We can do it best, and let us get together and devise means and conduct an active campaign of education which will be effective and can be applied to the individual in the law-making body.

DR. GEORGE W. SWIFT, Seattle: We feel that the poorest doctor of medicine is better than the best quack that comes to the state of Washington. We are generous with the cults. We have laws for every type of cult that exists. We organized the Washington Public Health League within the profession, selecting men who are leaders in our profession. We organized for the purpose of finding out where we were. We organized this league so that we could go to the public if we had to. Election came on and labor lost, and if labor had not lost we should have lost. Every small hospital in the state is going to be standardized, and a movement is on foot for that purpose. We are going to train physicians on time; we are going to get them into the county societies, and have them practice honest medicine. There is no argument about "state medicine." There is no argument about the cults. They will die a natural death because they cannot deliver the goods.

DR. JOHN A. FERRELL, New York: I had occasion about a year ago to visit three hospitals in Iowa, and I was very favorably impressed by the work they were doing and with the interest the taxpayers have shown in providing funds necessary for their maintenance. These hospitals will be instrumental in providing better facilities for the people of the rural communities and avoid the necessity of those in favorable financial circumstances to go to distant cities for the right kind of medical education. The average age of physicians in the rural communities has been steadily climbing, until now it has passed the meridian. These rural communities, in addition to providing better clinical facilities, will serve as a basis from which may radiate activities directed toward the conservation of the health of the people.

REV. CHARLES B. MOULINIER, Milwaukee: There has been aroused in the faculties of medical schools a divine discontent which is urging them to better teaching, and that is the basis of better scientific medicine. The movement for better hospitals is strong all over the country. In these two movements there is a better heart and a better conscience of the medical profession. In view of what medical knowledge has developed in the last ten or twenty years, and in view of the serious obligation that the medical profession has, we are appreciating it more keenly today than ever before.

DR. JOHN J. MULLOWNEY, Nashville, Tenn.: We have today in this country no less than twelve million negroes. Where are the colored graduates to get their training as interns so that they may become more efficient medical men? I was engaged in public health work for four years in the state of



Pennsylvania under Dr. Samuel Dixon. We cannot have efficient public health if we neglect four tenths of the population and not give them well trained public officials and well trained sanitarians and medical men.

DR. RACHELLE S. YARROS, Chicago: I am going to make a plea for the public. The public is far more ready to listen to the legitimate medical profession than the medical profession in its pessimistic moments seems to feel. The public is being educated, and the physicians are educating it. In our medical schools we are taught to deal with our patients, and our students are not taught yet to deal with communities.

DR. H. E. DEARHOLT, Milwaukee: The question resolves itself into this: The public and the medical profession should take this leadership from those who are not best calculated to assume it.

DR. C. A. HARPER, Madison, Wis.: I have watched the medical profession pretty closely for twenty-five years, and its attitude toward medical legislation and health legislation for eighteen years, and yet it has been an extremely difficult problem to get any united cooperation on either medical legislation or health legislation. We must not hope to accomplish much if it is going to take fifty years to educate the people as it has taken fifty years to educate the medical men to this appreciation. I believe that the medical profession must get together and have a little more consideration one for the other, to take the powder away from the enemy. I do not believe that the medical profession should simply say: Here we have the knowledge; if you want it, call on us. If you do not want it, go your way. I do not believe that that will ever solve the problem. The medical profession, having the knowledge, should go to work and apply it to members of the legislature and to the people as a whole.

DR. SAMUEL W. WELCH, Montgomery, Ala.: My distinguished predecessor in 1873 thought out and planned a medical organization which I do not believe has been equaled by any other state in the Union. The medical society assumed the leadership of medical and public health thought in Alabama at that time. Our medical organization, through its leaders, provided the quarantine laws of the state, and I am happy to say that much of the virtue of these quarantine laws came from the advice of the distinguished chairman (Dr. Vaughan) of this organization. In establishing the health unit in Alabama, which consists of a minimum personnel of three (we recommend four), the first step taken in the organization of a unit is for the state health officer to get in touch with the medical society of that county through its board of censors. The board of censors gets in touch with all civic organizations of that county, and then with the backing of the citizenship of that county we go before the appropriating bodies and demand an appropriation. With that backing, with the medical profession as leaders of thought and the public backing the movement, we seldom fail in obtaining an appropriation commensurate with the needs of our health organization.

THURSDAY, MARCH 9—AFTERNOON

#### Public Health from a Layman's Standpoint

MR. WALTER A. JESSUP, Iowa City: Iowa has maintained an aggressive board of health; a college of medicine; an extension service in public health education in the university; state-wide laws favorable to the care of the indigent sick, who are provided an opportunity for being transported to the university hospital at public expense, and epidemiologic laboratories including provisions for bacteriologic service. The state board of health has assumed full responsibility for the enforcement of all statutory regulations, the gathering of vital statistics, etc., in its own specific organization located in the capitol. The scientific epidemiologic and bacteriologic service is provided at the university in connection with the college of medicine. The state-wide remedial service for indigents, with the exception of the venereal patients, has been handled primarily through the county units, dealing directly with the university hospital. The state has come to rely heavily on the university for the dissemination of health information through the organized extension service. Highly developed research work in the field of infant welfare has been located in the child welfare research station

at the university. Thus, it may be said that the state of Iowa has come to more or less sharply differentiate responsibility in the field of public health so as to provide for the administration of public health legislation by the state board of health. The educational, scientific and service ends of public health have come to be provided at the university.

Iowa has placed every program having to do with the administration of health legislation at the capitol under the state board of health along with the regulations having to do with agriculture, banking, national guard and other state functions. The state has enacted also very favorable legislation for the erection and maintenance of county hospitals through the control of county boards of supervisors. A number of counties have already taken advantage of this law, and others will follow. Quite naturally, the more spectacular needs of the community have been emphasized first so that in a few cases these hospitals have been directed almost wholly to the care of tuberculous patients. The law is so drawn, however, as to make it favorable to operate first-class open hospitals with freedom to care for private as well as public patients. These hospitals have been successful in the degree that the leadership has been aggressive and intelligent. The scope of these hospitals will vary on the basis not only of leadership and community interest but also in proportion to the density of population. In counties having a small population, it will be impossible to provide as wide a range of service as in the more populous centers.

#### Organizing the Public with Physicians as Leaders

DR. F. E. SAMPSON, Creston, Iowa: If the medical profession is to lead the public, and it should in certain lines, we must have leaders. Not that there is a dearth of physicians who are willing to lead, but most of us insist on being generals. What we need is a generation of good soldiers, good corporals and sergeants, community engineering squad leaders; men who, instead of sticking around the training camps and scheming to get a shavetail commission on the headquarters staff, will go into the field and do the work that needs to be done instead of leaving it to nondescript doctoroids from the cult mills.

The propositions which I shall endeavor to substantiate are that: 1. Neither the public nor the medical profession is languishing for lack of organizations suitable to meeting all present needs for intelligent cooperation between the public and the profession. 2. The initiative is clearly for the medical organizations and the institutions concerned with preparation of men and women for the practice of medicine. 3. Essentially prerequisite to our undertaking to organize and lead the multitude is that we activate and develop sustained functioning efficiency of our own state and county medical societies. 4. Competent leadership of our own organizations includes participation in and leadership of lay activities so far as such is conducive to better distribution and delivery of standard medical service. 5. More calamitous to the cause of scientific medicine than invasion by any cult is a medical school that saturates the student with scientific detail to the exclusion of cultivating creative ideals and constructive social attitudes. 6. One of the most urgent needs is for established intelligent working relations between the medical schools and the field of medical practice. 7. Full-time, competent executive secretaries for our state medical societies and development of field activities, in sustained cooperation with lay activities and with state institutions and departments, offers the most promising solution for our most urgent medical problems. 8. Finally, any plans or program worth while will take a long while to put over and require the exercise of patient perseverance and all the virtues that inspire men and women to keep on keeping on.

The great need is for distribution of service. The solution of these problems lies in medical leadership that will lead practitioners to work together where they are, and then to coordinate their own local group with other local forces, to inspire as well as to instruct the medical student; to cultivate his social sense as well as scientific skill. Let us remember that leadership which snatches laurels within the season is open to suspicion. Even so great a leader as the famous sanitarian Moses had no end of bother in organizing and



leading the multitude; and even with the assistance of frequent interventions of Jehovah to help through in the pinches, it took him forty years to even get a glimpse of his destination.

### Organizing Our State Societies for the Protection of Public Health

DR. J. H. J. UPHAM, Columbus, Ohio: The task of protecting the public health is essentially the duty of the state, and the maximum results may be expected when its trained agencies, guided by and working with the organized medical profession, systematically attack the problem.

I believe that the best way to organize our state societies for the protection of the public health is not to initiate health propaganda, as has been done in the past—that has served its purpose in arousing the very wide interest apparent in recent years—nor to foster or organize more private health bodies, that will merely duplicate work and waste effort, but rather to concentrate our efforts on the activities of the state health service; to make a firm contact and endeavor with it to formulate a policy which shall define the character and scope of the state program, such as to insure the hearty cooperation of the medical profession.

In Ohio we believe that we have established a working solution of the problem for the present, a *modus vivendi*, as it were. The problem is not a fixed one, and doubtless different conditions will arise and readjustments will be necessary from time to time. In the present and in the future, the recognition of certain fundamental principles involved will be of great assistance in bringing about a satisfactory settlement.

The first is the necessity of the proper recognition by the members of the medical profession and the public of their reciprocal individual and collective obligations.

The second principle, a very important one, is a sympathetic comprehension on the part of the state health officials of the problems of medical practice as well as those of the public health service. This is their obligation to the medical profession. Occasionally one meets a health official who seems to have forgotten the origin of his service; who seems to feel that state sanitation has sprung "full panoplied from the brow of Jove," rather than the evolved product of medical practice that it really is. One such individual, perhaps otherwise very efficient, can do more harm to harmonious health work in a state and more to disorganize systematic public health activities than can be overcome in a long time. We believe ourselves very fortunate in Ohio in having had, in the past, and particularly at the present, a health service, the officials of which are keenly alive to the importance of these phases as well as skilled in the technical side of their work.

The third principle is the necessity of having a common meeting ground of understanding of all parties concerned, and it is the lack of this that is causing most of the trouble today. I believe that in all the states a large majority of the members of our profession appreciate and recognize the responsibilities and obligations of the medical profession, just as most of the health officials earnestly and honestly desire to cooperate with the medical profession and to respect the rights and privileges of its members; but unless there is this common meeting ground, a mutual merging of interests and recognition by all of the reciprocal obligations, there arise misunderstandings and cross purposes.

We feel that we have established this in Ohio by the adoption of a policy by our state health commissioner as the result of conferences with our Committee on Public Policy and Legislation, which indicates the position of our state officials as to "the proper activities of the state in medicine"; and so far this has met with hearty cooperation and approval from our association members.

Our state association endeavors to keep in touch with the various private health organizations, many of our members participating unofficially in their activities; but we feel that the regular systematic work carried out by the state agencies, according to the policy expressed above, with the hearty cooperation of our members, will be very effectual and render the maximum results.

### Periodic Health Examinations the Physician's Opportunity and Obligation

DR. HAVEN EMERSON, New York: To supplement what Dr. Upham has said, I should like to call attention to modern health efforts and how we have now reached the point at which we need the entire cooperation of the individual. The state health department, like the national department of health, began by doing things for the community; that is, it protected the people of the community against certain obvious risks of insanitation; it provided them with a pure water supply and a clean milk supply. After that their function was largely doing things for the people individually. They gave them vaccination; they provided them with diagnostic services; they did various other things of that kind which the public should do for themselves, and if you will run over with me briefly the activities which consist essentially of diagnostic services in the interest of preventive medicine, you will see how far ahead this part of medical practice has gone in the interest of the public.

At present the leading institutions follow their maternity cases with a certain amount of supervision through five or six months before confinement. This is done rarely except among specialists in obstetrics because of the economic limitations of the people and the unwillingness of the physician for what he is paid to give the amount of service necessary to protect the mothers in the prenatal period. Out of a group of 10,000 mothers watched through the prenatal period, occasionally by private agencies, through the services of physicians and assistant nurses, the death rate among mothers has dropped 50 per cent. as compared to the pregnancies as a whole, and among these 10,000 cases the number of stillbirths dropped to about one half of what it formerly was in cities. Also, there has been a decided drop in infant mortality. That has been accomplished by periodic medical examinations and the supervision of the pregnant mothers. About one third of all babies born in the city are subjected to some kind of supervision for the first two or three years of their lives, with the result that the death rate is down to 71 per cent., as compared with a much higher death rate formerly. This constitutes the first type of periodic examinations for the expectant mother, which is carried out once a month from the fifth or sixth month on.

Before children can go into an industry in many cities they have to undergo an examination at the age of 14 or 16 before they can undertake the hazard of self-support. Every employer of labor knows that if he is going to get competent labor and protect the labor he has, he has to provide an examination at the time of employment, and preferably an annual examination thereafter to see that those who are in his employ are not becoming liabilities to him and are not becoming sickened and unnecessarily prematurely aged or diseased by the process of their work.

In the thirty-one tuberculosis clinics in New York in the last fifteen years, one million people have been examined. Sixty-six per cent. of the people in the year 1921 who went through these examinations were found to be nontuberculous. The percentage has arisen from 20 per cent. to 66 per cent., a million of the population having passed through this examination sieve. At present we have as many patients under observation in our special cardiac clinics as we have tuberculous patients. We are already developing an increasing number who come to find out whether or not they have heart disease, and not how they may be cared for when they have cardiac disease. There are stations in the cities and rural communities for the examination of the mental capacity of persons of different ages. There has been set up by the Academy of Medicine in New York a series of examining stations. These stations are not clinics; they are not dispensaries in connection with hospitals; they have no facilities for the treatment of disease, but are places where physicians on a salary examine people who are presumably healthy. These people realize that by consulting physicians they can recognize the evidence of sickness long before the nonmedical person can do so.

### DISCUSSION

MR. W. B. OWEN, President, Chicago Normal College; Member of Committee on Health, National Educational Association, Chicago: I find that physicians really have as much difficulty in determining what they are going to do in



medicine as we have in trying to do things in education. Elementary education is being made over at a tremendous rate. The whole aims and purposes of our public school work are being made over, reconstituted by the inauguration of a new system of technic, and there is no modern profession whose superstructure, intellectually, scientifically and professionally, is undergoing such a rapid change as that of education, unless it be modern medicine.

The first thing you physicians have to do, if you are going to educate the teacher, is to make her intelligent about health. The teacher who was taught under our old system was no more intelligent about health than the average member of the public, yet she had control over many children every day, and they remained all these years in a mystery as to disease.

The first great proposition before the educational profession is to make ourselves intelligent about health, so that we may know what health standards are, and there are significant features in the protection of health. We have become enormously interested in the problem of health, because we have come in contact with the school physician. The average teacher now in all training schools is taught the more prominent symptoms that require attention and how to detect children who are suffering from eye troubles, troubles with the nose, adenoids, etc. Every teacher now talks about adenoids as if she was always used to it.

The outstanding fact of what we are trying to do in the public school at present is trying to make children conscious of social organization, of institutional life, and how they can attach themselves to these institutions. We are trying to make them understand what the community about them is, how it is organized, how to get into that community and make use of its resources. We are putting before the children as they develop, the whole problem of community life. We can help to adapt your program to the schools and we can put it over. We want a health program, and I believe that all our children ought to have a definite, practical knowledge as they come up through the grades increasingly of what we may call health controls, rules and regulations for health, couched in language children can understand, backed by your professional authority.

DR. JOHN M. DODSON, Chicago: One of the best and brightest things the American Medical Association ever did was to send a committee at its session in Los Angeles in 1911 to the meeting of the National Educational Association meeting in San Francisco the following week to convey greetings and to suggest more earnest attention to health problems in education. No one who has been in touch with this movement, as I have been fortunate enough to be since its beginning, could have been other than intensely gratified at the immediate, effective but continued response of the most enthusiastic sort on the part of the great leaders in education, like Mr. Owen. If we accomplish no other thing than bringing about a state of affairs whereby the committee of this great national teachers' organization should have made health the fundamental first standard in the school program, we shall have more than justified our existence.

DR. MERRITTE W. IRELAND, Washington, D. C.: I have been interested in Dr. Emerson's paper on periodic examinations of the population. We have been carrying on such examinations with the officers for fifteen years, and they have been of immense value to the officers' personnel and to the government. Previous to that time unenlisted men were examined when they came into the service, and if anything was found wrong, corrective measures were taken to put them in good physical condition. They were also examined when they went out of service and given advice. Fifteen years ago, President Roosevelt took up the question of periodic examinations of the officers' personnel. When that was begun we found a number of officers who were physically unfit, and they were eliminated from the service. Later these examinations were made annually. At present there is passing through the Surgeon General's Office a great public health program of examining 14,000 officers in the United States Army. These examinations will tell us exactly what is wrong and corrective measures will be taken. I am a firm believer in periodic examinations of the civic population. They have been of immense value in the army, and they will be of great value to our local communities.

(To be continued)

## Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

### ALABAMA

**Gorgas Memorial Meeting.**—A meeting was held at Birmingham, March 3, to initiate the Gorgas Memorial. Sir Auckland Geddes, British ambassador, and J. E. Lefevre, chargé d'affaires of the Panamanian legation, Washington, D. C., delivered addresses. Solicitations for the fund for the memorial were conducted, February 20-27, which was known as "Gorgas Week," throughout the state.

### CALIFORNIA

**Free Public Lectures.**—The fifth lecture in the series of popular medical lectures at the Leland Stanford Junior University School of Medicine, San Francisco, was given, March 3, by Ernest H. Baynes on "The Truth About Vivisection."

**Annual Meeting.**—In order that delegates, or members of their families, attending the annual session of the American Medical Association in St. Louis, May 22-28, may also attend the California Medical Association Convention at Yosemite, May 15-18, the Southern Pacific Company has announced that stop-over privileges will be allowed at Merced.

**Physical Education Day.**—The assistant state health superintendent of physical instruction, Stockton, recently directed an experimental physical education day. Schools were dismissed so that the teachers might attend the conference, and the day was spent in demonstration activities for the children, in which they exercised every muscle of their bodies.

**Revival of Medical Society.**—At a meeting called by Dr. William E. Musgrave, San Francisco, secretary-editor of the California State Medical Society, the San Benito County Medical Society was reorganized. The following officers were elected for the ensuing year: president, Dr. Leonard C. Hull; vice president, Dr. Richard W. Obannon, and secretary-treasurer, Dr. Chester W. Merrill.

**Society for the Advancement of Women in Medicine and Surgery.**—At a meeting of the society, held March 9, in San Francisco, Dr. Esther Pohl Lovejoy, president of the American Women's Hospital, New York City, delivered an address. The following officers have been elected for 1922: president, Dr. Mary Page Campbell; vice president, Dr. Matilda Feeley; secretary, Dr. Margaret Mahoney, and treasurer, Dr. Emma C. Fontaine.

### DISTRICT OF COLUMBIA

**Legislation for Tuberculous Children.**—Senator Phipps of Colorado has introduced a bill in Congress providing for the construction of a building for the care of tuberculous pupils of the public schools of the District of Columbia. The cost of the proposed structure is fixed at \$150,000.

### ILLINOIS

**County Medical Meetings.**—New officers of various county societies are: Jo Daviess County Medical Society: president, Dr. Frank J. Shook, and secretary-treasurer, Dr. Ray E. Logan; Schuyler County Medical Society: president, Dr. Amos W. Ball, and secretary, Dr. C. Marshall Fleming; Stephenson County Medical Society: president, Dr. Benjamin A. Arnold, and secretary, Dr. John A. Asher.

**Personal.**—Dr. George A. Cloetter, Hillsboro, has been elected president of the Montgomery County Medical Society. —Dr. A. J. Roberts has been elected president of the La Salle County Tuberculosis Association, to succeed Dr. Maciejewski. —Dr. William E. Constant has been appointed superintendent of the St. Charles City Hospital, St. Charles.

**Hospital News.**—The contract has been let for the new Mercy Hospital at Champaign. —A home for indigent British people will be erected and endowed by the Daughters of the British Empire in Illinois at a cost of \$100,000. The purpose of the institution is to relieve the community from paying taxes for the upkeep of aged destitute foreign-born residents.

**Damage Suit Filed by Physicians.**—The basis for a million dollar damage suit was filed in the circuit court last Decem-



ber by Drs. Leroy B. Elliston and Robert L. Elliston, La Salle, against the Franciscan Sisters of the Sacred Heart and Dr. Hugh M. Orr of St. Mary's Hospital. The declaration, presented, March 4, states that false allegations were made against the plaintiffs and that they were brought into "public scandal, infamy and disgrace" when they were barred from taking their patients to the hospital.

#### Chicago

**President Wilbur Delivers John M. Dodson Lecture.**—March 17, President Ray Lyman Wilbur of Leland Stanford Junior University delivered the first John M. Dodson Lecture to the students, alumni and faculty of Rush Medical College. His subject was "Medicine: A Look Ahead." The lectureship was established by the Alumni Association in recognition of Dr. Dodson's service to the college and to medical education.

**Chicago Health Conference.**—This conference was held March 13-18, under the auspices of the U. S. Public Health Service and the Illinois Department of Public Health. The cooperating agencies were the Chicago Department of Health, Illinois Social Hygiene League, and Chicago medical colleges and hospitals. Dr. Lee Alexander Stone, chief of the division of hospitals, social and industrial hygiene, Chicago Health Department, acted as permanent chairman. The conference consisted of physicians, social workers, bacteriologists, nurses, psychologists, psychiatrists, etc. It was decided to hold a similar conference next year in Chicago. Papers were read and lectures given on the Wassermann test, clinic management, and on all of the social aspects of venereal disease.

#### INDIANA

**Personal.**—Drs. Bert E. Ellis and Charles B. Collins have been appointed members of the board of health of Jasonville. —Dr. John N. Hurty, Indianapolis, for twenty-six years secretary of the state board of health, has resigned to resume private practice.

#### MARYLAND

**Joint Medical Meeting.**—The Baltimore City Medical Society and the Section on Ophthalmology joint meeting which was to be held March 15, at which Dr. Hofrat Ernst Fuchs, Vienna, Dr. George E. de Schweinitz, Philadelphia, and Dr. Lewellys Barker, Baltimore, were to be the speakers, was postponed indefinitely because of the illness of Professor Fuchs.

**Maryland Tuberculosis Association.**—The annual meeting of the Maryland Branch, National Tuberculosis Association, was held in Osler Hall, Medical and Chirurgical Faculty Building, Baltimore, March 16. The speakers were Dr. James Alexander Miller, president, and Dr. Charles J. Hatfield, director of the National Association. The meeting was presided over by Dr. Henry Barton Jacobs, president of the Maryland Tuberculosis Association.

**Personal.**—Dr. D. Z. Dunott, Baltimore, chief surgeon of the Western Maryland Railway Company, has been selected as one of the delegates from the American Railway Association to attend the International Railroad Congress at Rome, Italy, in April. Before the opening of the convention, Dr. Dunott will study sanitary and surgical conditions as affecting railroads in England. —Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, has been requested by the Virginia Baptist Hospital, Lynchburg, to be consulting director of a 200-bed, three-unit hospital to be erected outside Lynchburg.

#### MASSACHUSETTS

**New England Ophthalmological Society.**—At the annual meeting of the society, held February 28, at Boston, the following officers were elected for the ensuing year: president, Dr. Frederick H. Verhoeff; vice president, Dr. William Norwood Souter, and secretary-treasurer, Dr. W. Holbrook Lowell.

**Legislative News.**—It is reported that the bill presented recently for providing additional remuneration for the chairman of the board of registration of nurses has been amended by the Committee on Public Service, and now appears as House bill 1312. —The Committee on Public Health has reported "leave to withdraw" on Senate bill 130, petition of Medical Liberty League relating to vaccination and school attendance, and House bill 1056, petition of George W. Reed for elimination of the requirement of a physician's certificate as to vaccination preceding admission to public schools.

#### MINNESOTA

**Annual Clinic Week.**—The fifth annual clinic week of the Hennepin County Medical Society will be held, April 10-13,

at Minneapolis. The practitioner's short course in medicine, surgery, obstetrics and pediatrics will be held at the University of Minnesota Medical School at the same time.

#### MISSISSIPPI

**Hospital News.**—The nurses' home, with accommodation for thirty-eight nurses, of the South Mississippi Charity Hospital, Laurel, has recently been completed at a cost of \$75,000. —An addition has been built at the Rush Infirmary, Meridian, at a cost of \$20,000, with a capacity of twenty-eight beds. —The McRae Hospital, Corinth, was destroyed by fire, recently.

**Joint Medical Meeting.**—A joint meeting of the Six Counties Medical Association of North Mississippi, composed of Yalobusha, Lafayette, Marshall, Benton, Toppah and Union counties, was held recently and the following officers elected: president, Dr. Peter W. Rowland, Sr., Oxford; vice president, Dr. Levi A. Barnett, Holly Springs, and secretary-treasurer, Dr. Peter W. Rowland, Jr., Oxford.

#### MISSOURI

**Hospital News.**—A new hospital, with seventy-four rooms, including a complete bath house, will be erected at Excelsior Springs in the near future.

**Personal.**—Dr. Peter T. Boham, Kansas City, was the principal speaker at the recent meeting of the Jasper County Medical Society, Joplin. —Dr. Claude P. Gryer, Maryville, has been appointed county health officer of Nodaway County.

**Test for Drivers.**—It has been announced by the chief of police, the health commissioner, and the hospital commissioner of St. Louis, that dispensary physicians who find arrested drivers of automobiles intoxicated will be required to state the findings in a formal letter for use in court, and must also appear as witnesses.

#### NEBRASKA

**Dr. Frank Billings Addresses Lincoln Club.**—March 17, the Knife and Fork Club of Lincoln entertained the Lancaster County Medical Society. The chief address was delivered by Dr. Frank Billings, Chicago. Dr. B. F. Bailey, president of the chamber of commerce, represented the county medical society with an address. Dr. Billings reviewed the advances in modern medicine, emphasizing that the family practitioner was the most valuable member of the American community, and that he should not be forced into specialized practice. He stated that it was his belief that the family practitioner was able to diagnose and treat 85 per cent. of the cases of illness without special instruments or training, and that if people of a community would first seek aid from him, instead of going to specialists in distant cities or in their own community at the first sign of illness, it will result in a saving to the layman and in the retention of the family physician.

#### NEW JERSEY

**Legislative News.**—A bill is before the legislature prohibiting the adulteration of ice cream with chemicals, supplementing the pure food act. —A measure has been introduced into the legislature prohibiting the manufacture or sale of milk products blended with any fats or oils other than milk fats.

**Personal.**—Dr. Charles F. Adams, Trenton, has been elected president of the recently organized medical officers of Camp Green. —Dr. Joseph W. Dennin, Roselle, has been appointed health officer of the city. Dr. Hugh H. Tyndall, Weehawken, has been appointed gynecologist at St. Mary's Hospital, Hoboken. —Dr. Thomas A. Clay, Paterson, has been awarded judgment by the court of errors and appeals sustaining his claim of appointment as health officer till December, 1923. —Dr. William Kline has been elected vice president of the Phillipsburg board of education. —Dr. Harris Day, Ogdensburg, has been made sanitary inspector.

#### NEW MEXICO

**County Medical Meeting.**—At the annual meeting of the Chaves County Medical Meeting, held recently in Roswell, the following officers were elected for 1922: president, Dr. Eugene M. Fisher, and secretary-treasurer, Dr. Charles M. Yater.

#### NEW YORK

**Brooklyn Cardiological Society.**—A meeting of the society will be held, March 30, under the presidency of Dr. William J. Cruikshank.



**Transfer of Lepers.**—It has been announced by the health commissioner that seventeen lepers, patients on North Brother Island, will be transferred to a new federal leper camp to be established by the U. S. government in Louisiana.

**Personal.**—Dr. Harvey S. Albertson has been appointed health commissioner of Oswego to succeed Dr. James E. Mansfield.—Dr. Stanton P. Hull, Petersburg, has been appointed a member of the New York State Public Health Council.—Dr. Nelson O. Brooks has been appointed health officer of Oneida.

#### New York City

**American Legion Protests Against Closing Fox Hills Hospital.**—The American Legion in New York State is calling upon its congressmen and senators to protest against the closing of the Fox Hills Hospital and scattering patients to all parts of the country. The Legion agrees that Fox Hills Hospital should be closed, but wants the men kept within the state.

**Personal.**—Dr. Hans Zinsser, formerly in charge of the sanitary inspection, successively in the First and Second Army Corps, American Expeditionary Forces, was awarded the Distinguished Service Medal at Governors Island, March 17, for his successful operation of a plan of military sanitation and epidemic disease control while serving with the Second Army Corps.

**Foreign Mail Inspected for Typhus.**—Mail matter reaching New York from European countries infested with typhus is to be subjected to examination by the health department through an arrangement with Postmaster Edward M. Morgan. When ships dock, inspectors of the health department will inspect the mail. Health Commissioner Copeland has also undertaken a campaign to have persons owing property within a block of the water front clear their premises of rats as a precaution against bubonic plague.

**Community Health Service Organization.**—A new venture in health conservation has been organized under the name of "The Committee for the Study of Community Organization for the Self-Support of Health and Protection of Mothers and Young Children," in cooperation with the Maternity Center Association, the Henry Street Visiting Nurses Service, and the New York Diet Kitchen Association. Health service has been offered residents of certain districts for \$6 a year, covering: supervision for pregnant mothers; assistance at confinement; baby health service for babies under 2 years; health supervision of children from 2 to 6 years of age, and visiting nurse service for sick persons of all ages.

**Bureau of Hospital Information.**—Following the survey of hospital work in New York City made by the Public Health Committee of the New York Academy of Medicine, the United Hospital Fund of New York has established a hospital information bureau at 15 West Forty-Third Street. The aims of this bureau are to keep in touch with hospital work and progress in the city; to furnish information to all interested with regard to administration, record keeping and other facts concerning hospital work, organization and facilities; to study and make known the hospital needs of the city; to prepare exhibits; to maintain a library of hospital reports and statistics, also of record forms and blanks used in the several departments of the hospitals; to promote uniformity in hospital reporting; and, whenever called on by the hospitals, to assist in such administrative and efficiency studies as will be of value to the hospitals, municipal and private, and to publish annually, or more often, information concerning hospitals. E. H. Lewinski-Corwin, Ph.D., has been appointed director of the bureau, and Drs. W. Gilman Thompson and Sigismund S. Goldwater have been appointed on the committee in charge.

#### OHIO

**Personal.**—Dr. Rush R. Richison has recently resigned as health director of Springfield.—Dr. James G. Freshour has been appointed health officer of Piqua to succeed Dr. James H. Lowe who resigned, March 10.—Dr. Charles H. McFarland will resign as superintendent of the Cleveland City Hospital.—Dr. Gordon Brammerman was severely injured, March 9, when the automobile in which he was riding was struck by a truck.

**Penitentiary Survey.**—In an effort to rid the penal institutions in the state of tuberculous prisoners, Dr. H. S. MacAyeal, director of public welfare, has inaugurated a survey of the penitentiaries, reformatories and industrial schools to

discover the tuberculous inmates. Dr. MacAyeal is endeavoring to have all the tuberculous victims liberated, or in the event of capital offenses to segregate them, asserting that the confinement endangers not only their lives but also the lives of those with whom they come in contact.

**Hospital News.**—A home for old women will be erected at Marion by the trustees of the Wedell Old Ladies' Home, at a cost of \$20,000.—A National Children's Home will be established in Ohio in connection with the Brotherhood of American Yeomen. Newark has been considered as a possible site.—Work has been started on the Rickly Memorial Hospital, to be erected at the Ohio Masonic Home, Springfield. The hospital will cost more than \$500,000.—The staff of the Hospital Clinic of Cleveland has announced the opening of a general hospital and clinic at 8803 Euclid Avenue, Cleveland, March 1. The staff is organized into eight separate departments of medicine and surgery, with sixteen physicians on the staff. There is, in addition, a laboratory and a department of radiology, each in charge of a physician.

#### PENNSYLVANIA

**Mellon Lectures.**—Dr. Thomas Lewis, London, England, will deliver the seventh Mellon lecture before the Society of Experimental Biology of the School of Medicine, University of Pittsburgh, on clinical electrocardiography, May 8.

**Hospital News.**—Construction has been started on the nurses' home for Western Pennsylvania Hospital, Pittsburgh, to house 250 nurses, which will be erected at a cost of \$600,000. The building will be six stories high, fitted with all modern equipment, including a roof garden and sleeping porches above the auditorium. A tunnel will connect the home with the hospital.—Dr. H. Bruce Boring has been appointed superintendent of the Grand View Hospital, Sellersville.

**Personal.**—Prof. Charles R. Stockard of the department of anatomy, Cornell University Medical College, delivered a lecture on heredity at the meeting of the Philadelphia Pediatric Society, March 14.—Dr. Hugh Cabot, dean of the medical school, University of Michigan, Ann Arbor, addressed the alumni of the University of Michigan Club, at its thirteenth annual dinner in Philadelphia, March 17.—Dr. DeWayne G. Richey, Pittsburgh, pathologist, Mercy Hospital, and lecturing pathologist at the University of Pittsburgh, has been appointed county pathologist of Allegheny County.

#### Philadelphia

**City Establishes Psychiatric Clinic.**—To aid in the prevention of mental diseases the department of public health has established a neuropsychiatric clinic at the Philadelphia General Hospital, with a staff of expert psychiatrists and assistants. The clinic has a double function—the treatment and observation of patients who are not classed as insane and are discharged from the psychopathic wards of the hospital, and the examination of patients for early manifestations of mental disease.

#### VIRGINIA

**Personal.**—Dr. Dean B. Cole has resigned as head of the tuberculosis department of the Richmond Health Bureau.—Dr. Claude D. J. MacDonald has been appointed city coroner of Norfolk, to succeed the late Dr. J. Judd Miller.

**Medical Schools Merger Defeated.**—It has been reported that delegate Wilkins, Newport News, offered a resolution "that it is the sense of the General Assembly of Virginia that no change be made at this time in the policy of the state concerning medical education, and that the institutions aforesaid, university colleges of medicine and medical colleges of university should not be merged." This was the final argument in the proposed merger of the University of Virginia Department of Medicine, Charlottesville, and the Medical College of Virginia, Richmond.

#### WASHINGTON

**Rabies Outbreak.**—An outbreak of rabies is raging in the eastern part of the state of Washington. The disease made its appearance among coyotes in a virulent form last August, and soon spread to many counties of this section of Washington.

#### WISCONSIN

**Hospital News.**—The new six-story hospital to be constructed at Madison will be erected at a cost of \$797,670, exclusive of equipment.



**Personal.**—Dr. Minnie M. Hopkins, Oconto, has been appointed a member of the Wisconsin Board of Medical Examiners.—Dr. Edward L. Miloslaich, formerly of the University of Vienna, has been appointed head of the pathologic department of St. Mary's Hospital, Milwaukee.

### PHILIPPINE ISLANDS

**Establishment of Puericulture Centers.**—The towns of Orani, Herlosa, Balanga, Oroin, Mariveles and Limay, in the province of Bataan, have filed puericulture incorporation papers in the bureau of commerce.

**Banquet to General Wood.**—The Colegio Médico-Farmacéutico of the Philippines joined recently the Manila Medical Society and the Philippine Islands Medical Association in offering a banquet to Governor Wood. Dr. Benito Valdés acted as toastmaster, and speeches were made by Drs. Ricardo Fernández, Daniel de la Paz, Otto Schobl and General Wood.

**Anesthetic Lepers.**—It has been announced by the Philippine Health Service that patients with anesthetic leprosy, in which no leprosy bacilli can be demonstrated from the skin or the nasal septum, may be paroled, provided they report for examination once a month for three months. Reexamination of patients every six months will be necessary in previously positive cases after they have been apparently cured and released, having remained bacteriologically negative and without clinical evidence of cutaneous lesions continuously for two years.

### CANADA

**Elgin Medical Association.**—At the annual meeting of the association, held recently, the following officers were elected: president, Dr. Rupert W. Gliddon; treasurer, Dr. Angus McPherson, and secretary, Dr. Duncan McKillop.

**Memorial to War Heroes.**—At a recent meeting of the Toronto Academy of Medicine, Dr. Newton A. Powell, chairman of the Hospital Supplies Committee, presented a bronze tablet to the academy in memory of the fellows who died in active service during the World War. Dr. Edwin E. King read the names of those who had died, and the last post was sounded. On the same occasion, the portrait of Dr. James A. Temple was formally presented to the academy.

**Hospital News.**—A new hospital will be erected at Elgin, Ont., in the near future, at a cost of about \$200,000.—The Belleville General Hospital, Belleville, Ont., recently received a bequest of \$40,000 for the erection of a nurses' home, by the will of the late Thomas Ritchie. A further sum of \$20,000 will be donated to the hospital on the death of his wife.—A new nurses' home will be constructed at the Brockville General Hospital, and the present nurses' home will be used for private wards, as the institution is greatly overcrowded.

**Personal.**—Dr. Norman MacLeod Harris has been appointed chief of the division of medical research of the Dominion Department of Health. Dr. Harris served four years overseas with the Canadian Army Medical Corps.—Dr. Frederick S. Baines has been appointed physician on the staff of the public health department of Toronto.—Dr. George S. Jeffrey has been appointed physician at Burwash Prison Farm.—It has been officially announced that Major Gen. John T. Fotheringham, M.D., Toronto, has been appointed honorary physician to the governor general.—Dr. John Hunter, Toronto, has been elected a member of the local school board.—Dr. E. N. Cootes, Agincourt, has been appointed superintendent of the Freeport Sanatorium, Preston, Ont. During the late war Dr. Cootes served in Egypt with the Royal Army Medical Corps.

### GENERAL

**American Proctologic Society.**—The twenty-third annual meeting of the society will be held, May 22-23, at St. Louis, under the presidency of Dr. Granville S. Hanes, Louisville.

**Drug Smuggling in Florida.**—Federal Prohibition Commissioner R. A. Hayes has announced that Col. L. G. Nutt, head of the Narcotic Division, is in Florida with a squad of narcotic experts investigating drug smuggling in Florida and a number of foreign points in southern waters. This investigation is being supported and aided by customs officials.

**American Chemical Society.**—The annual meeting of the society will be held at Birmingham, April 3-7, under the presidency of Edgar F. Smith, who will turn over to the society dies for the Priestly medal, together with funds that have been donated for the purpose of presenting, every two

years, a medal for the most distinguished work in the science of chemistry. April 1, a visit will be paid to the government cyanamid plant at Muscle Shoals.

**National Hospital Day.**—May 12, the anniversary of the birth of Florence Nightingale has been set aside as National Hospital Day. National Hospital Day was inaugurated in 1921 as a day on which every hospital may acquaint its local constituency with the workings and aims of the hospital. Mr. M. O. Foley, 537 South Dearborn Street, Chicago, secretary of the National Hospital Day Committee, is directing the celebration of the day for all hospitals, civilian and otherwise.

**American Society for the Control of Cancer.**—The annual meeting of the society was held, February 25, at its new office, 370 Seventh Avenue, New York City. The following officers were elected for the ensuing year: president, Dr. Charles A. Powers; vice presidents, Drs. Clement Cleveland, M. F. Engman, James Ewing and Edward Reynolds; secretary, Thomas M. Debevoise, and treasurer, Mr. Calvert Brewer, U. S. Mortgage and Trust Company. All these officers held office during the previous years, with the exception of Mr. Calvert Brewer. Cancer week will be held in the fall, and it is requested that physicians and surgeons not now in active practice of their profession do such volunteer work as possible in preparing publicity material and writing special articles.

### LATIN AMERICA

**Reciprocity with Mexico.**—We are informed that reciprocal relations have been established between the state of Arizona and the state of Sonora, Mexico, so that those who have been licensed in Arizona are eligible for registration in Sonora without further examination.

**The Rockefeller Foundation in Brazil.**—The *Brazil-Medico* announces the arrival at Rio de Janeiro of Dr. F. F. Russell, a director of the Rockefeller Foundation, and a pioneer in vaccination against typhoid. Dr. R. Pearce, a director of the foundation, had also arrived, on his way to S. Paulo.

**Equiparation of Paraná Medical School.**—The *Brazil-Medico* relates that the authorities in Brazil have accepted the medical school at Paraná, founded in 1918, as conforming to requirements, worthy to rank with the other schools of the country. The state of Paraná is southwest of Rio de Janeiro.

**Appropriation for Smallpox.**—The American Red Cross field director, Santo Domingo, has appropriated \$2,000 for food, medicines and burial expense in the smallpox epidemic which has been prevailing in Santiago, Meca and La Vega, Dominican Republic. Quantities of vaccine have been supplied by the U. S. Navy. During the week March 20-26, 225 deaths from the disease were reported.

**The "Archivos de Pediatría."**—With this year, the *Archivos Latino-Americanos de Pediatría* changes from a bimonthly to a monthly journal. The directors of the *Archivos* are Dr. L. Morquio of Montevideo and Dr. Aráoz Alfaro of Buenos Aires, and they have the cooperation of all the pediatricians on both sides of the La Plata River as well as in Brazil and elsewhere in Latin America. It is now in its fifteenth year.

**Brazilian Society Appoints Officers.**—The medical society of Porto Alegre appointed recently the following officers: president, Prof. Sarmiento Leite; vice president, Prof. Annes Dias; secretary general, Prof. Guerra Blessmann; first secretary, Dr. Leonidas Escobar; second secretary, Dr. Hugo Ribeiro; treasurer, Prof. Plinio Gama; recorder, Prof. Argymiro Galvao; editors of the *Archivos Rio-Grandenses de Medicina*, Profs. Annes Dias, Ulysses de Nonohay and Guerra Blessmann.

### FOREIGN

**New Official Journal.**—The *Journal of the German Red Cross* is the title of an official monthly publication, issued for the first time in January by the Red Cross Society of Germany, and published in Berlin.

**Smallpox in Spain.**—A smallpox epidemic has developed at Zaragoza, Spain. The disease, however, has shown a tendency to remain stationary, without making much progress. Influenza is also very prevalent, in the same town, hundreds of cases having occurred.

**Medal for Distinguished Service Conferred on French Medical Officers.**—The *Paris Médical* states that the ambassador from the United States has conferred the Distinguished Service Medal, in the name of the President, on four French medical officers, Dr. Février, medical inspector general; Dr.



G. Bergasse, medical inspector, Major E. Rist and Major M. Hanotte.

**Union of Special Societies.**—The *Presse Médicale* comments approvingly on the recent organization at Strasbourg of the Société de Neuro-Oto-Oculistique, as neurology, ophthalmology and otolaryngology form a sort of natural group with interlapping interests. The officers are the professors of these various specialties, with Barré, professor of neurology, as president.

**New Cancer Journal.**—We have received the first number of *Les Néoplasmes*, a bimonthly devoted to the literature, the study and the treatment of tumors and cancers. The editorial staff consists of J. Thomas and P. Delbet for the medical and surgical aspects of the subject, and C. Schmitt for radiotherapy. The publishers are Vigot Frères, 23 rue de l'Ecole de Médecine, Paris, and the subscription is fixed at 18 francs. The first number contains two original articles, one by A. Robin on the erythrocytes in malignant disease, and the other by Delbet on the comparative value of roentgen, radium and surgical treatment of cancer.

#### Deaths in Other Countries

Professor Löhlein, director of the Anatomical and Pathological Institute, Marburg, died recently, aged 44.—Dr. William Craig, former lecturer on materia medica at the Medical College for Women, Edinburgh, Scotland, and editor of *Milne's Materia Medica and Posological Tables*, died recently, aged 89.—Dr. Francisco E. Bustamante of Maracaibo, Venezuela, at an advanced age, a surgeon, senator, and at one time ambassador from Venezuela at Washington.—Dr. N. De Dominicis, professor of pathology at the University of Naples and author of numerous works on pathology. His experimental research on glycosuria after removal of the pancreas paralleled in time that in Germany by Minkowski and Mering.—Dr. G. Mazzoni, instructor in surgery at the University of Rome.—Dr. H. Reerink, professor of surgery at the University of Rostock.—Dr. Leudet of Paris, former president of the Société d'Hydrologie and of the Paris Société de Médecine.—Dr. Emile Lust of Brussels, one of the earliest pioneers in the movement for infant welfare work, organizing the National Child Protection League in Belgium and then the International Union for Protection of Young Children. He was in charge of the Central School of Puericulture in Belgium and of the organized milk station service, and was a member of a number of scientific societies at home and abroad, with decorations from various countries.—Dr. Alcide Treille, professor emeritus of the Alger medical school.

## Government Services

### Public Health Service Holds Conference on Future of Public Health

An important conference, at which the future of public health in the United States and the education of sanitarians was discussed, occurred in Washington, D. C., March 14 and 15, under the auspices of the United States Public Health Service. The term "sanitarian" was used to include not only health officers employed by states, counties, cities and the national government, but also all those employed in many other capacities in the work of public health in the United States. The transactions are to be printed as a public health bulletin by the Public Health Service. The conference was attended by many who had participated in the Congress on Medical Education, Medical Licensure, Public Health and Hospitals of the American Medical Association in Chicago the preceding week.

Surgeon General Cumming made the introductory address, explaining the aims of the conference. Dr. William H. Welch, director, School of Hygiene and Public Health, Johns Hopkins University, assumed the chairmanship of the Tuesday morning session. Dr. Allen W. Freeman of Johns Hopkins University gave a background to those present at the conference of the development of the public health movement so as to enable them more intelligently to consider the principal problems before the conference. Dr. Freeman gave a brief historical sketch of public health work in the United States, and an estimate of the total number of persons employed in all kinds of public health work, including those employed by federal, state, county and municipal governments, private agencies (including industries) and schools.

Dr. Milton J. Rosenau, professor of preventive medicine and hygiene, Harvard Medical School, addressed the conference on the present status of education for a public health career, giving a statement of the number of schools of hygiene and public health in the United States, with a brief description of their curriculums.

A report was made by Dr. Frederick R. Green, of the American Medical Association, of the 1922 Congress on Medical Education, Medical Licensure, Public Health and Hospitals, together with the conclusions of this congress regarding the education of sanitarians.

Dr. W. A. White referred to the importance of the mental hygiene movement, the relationship of the mental hygiene clinic to other clinics, and educational measures which may be undertaken by boards of health. In considering the subject of child hygiene, Dr. R. M. Smith also spoke of prenatal hygiene, the hygiene of infancy, school hygiene, the mental hygiene of childhood, and the physiology and hygiene of exercise and play. These newer aspects of public health are of particular importance in the consideration of the training of sanitarians. In speaking of the economic and sociological aspects of public health, Dr. L. K. Frankel pointed out the social forces in a community available for the assistance of sanitarians in public health work, and how the economic and sociological conditions of population groups are related to the public health and to what extent these conditions are subject to social control. Dr. J. F. Williams explained the importance of physical education as a public health measure, particularly that phase of the subject which deals with the health of the child through education, and proposed a positive physical education program, making reference to the increasing demand for adequately trained specialists in the field of physical education and to the necessity of organized health instruction. Dr. O. P. Geier spoke of the growing importance of industrial hygiene and of the prevalence of the industrial diseases and their prevention through organized health work in industries, mentioning particularly the need for recognizing the importance of fatigue and mental hygiene in industry. He showed what courses of study and field work should be provided by the school of public health in order that its graduates may be able to deal with these various problems in industry. Dr. C. E. Seashore made the concluding statement of the series of six, dealing with certain newer aspects of public health which seem particularly important in the education of sanitarians. Dr. Seashore gave reasons for the recognition and the participation of the educational psychologist in all thoroughly organized public health organizations, and why the present "hit or miss" manner of attempting to educate the public in regard to health problems must give way to a more scientific procedure.

#### TUESDAY AFTERNOON SESSION

The Tuesday afternoon session was called to order by Dr. Hubert Work, chairman of the afternoon session. He called on Dr. C.-E. A. Winslow, professor of public health, Yale University School of Medicine, to discuss into what specialized fields public health work will be differentiated in the future, and in what colleges and professional schools will men for these various fields be trained.

Dr. Walter H. Brown, National Child Health Council, addressed the conference on the importance of developing in the local health unit a higher degree of efficiency in public health work, and suggested practical means of approach in the realization of an ideal city or county health organization. Dr. A. J. McLaughlin, United States Public Health Service, in a similar manner visualized for his audience the ideal state department of health of the future, and suggested academic training necessary to enable the schools of public health to provide health officers who will be able to organize all existing forces in the state interested in public health.

The fields of public health work in which future progress depends on further research were enumerated by Dr. A. M. Stimson, U. S. Public Health Service, and the qualities needed for successful research work were shown. Dr. Stimson suggested ways by which medical schools and schools of public health may develop men with these qualities for the researches now awaiting attention.

The section of the afternoon session considering what kind of sanitarians are needed for the future closed with discussions led by Dr. Vernon Kellogg, National Research Council, and Dr. A. T. McCormack, state health officer of Kentucky.

The section called for the purpose of discussing how more and better sanitarians may be recruited was opened by Dr. E. O. Jordan, University of Chicago, who spoke about rea-



sons given by medical students for not entering schools of public health and public health work. Dr. Jordan reported the results of certain inquiries conducted by himself, and gave in the language of the medical student his reasons for not entering the field of public health work.

Dr. John A. Ferrell, International Health Board, suggested how the career of the public health officer may be made more attractive, speaking primarily of the need of recognizing the value of public health work, both on the part of the medical student and the public, and of the problems of tenure of office and compensation.

After the discussions led by Dr. Frank J. Goodnow, president, Johns Hopkins University, and Dr. L. L. Lumsden, U. S. Public Health Service, the Tuesday afternoon session adjourned.

#### WEDNESDAY SESSIONS

Wednesday, the conference convened at 9:30 a. m., under the chairmanship of Dr. Hugh Cabot, dean of the University of Michigan Medical School. Dr. James R. Angell, president, Yale University, discussed, from the standpoint of a university president, the suggestions made by Dr. Winslow at the Tuesday afternoon session and made general suggestions regarding the courses which it will be necessary to include in the curriculums of the various colleges and the professional schools of the modern university, if the university is to measure up to its present opportunities in the training of sanitarians.

Dr. George C. Whipple, professor of sanitary engineering, Harvard University, presented a proposed curriculum for a school of public health, intended primarily for students in a school of public health who expect to become public health administrators, and also suggested modifications in the curriculum for those intending to take up special work.

Dr. H. F. Vaughan, commissioner of health of Detroit, Dr. Annie Goodrich, Teachers' College, Columbia University, and Dr. William Darrach, dean, School of Medicine, Columbia University, led the discussions of different phases of the papers presented by Drs. Angell and Whipple.

Dr. Roger Perkins, Western Reserve University School of Medicine, presented the problem of providing extended supplemental education for a large number of health officers and other sanitarians now employed who were trained some years ago in medical schools and who have had no special academic training to equip them for their present positions, and also the problem of providing for those who wish to assume certain relatively minor positions without entering a school of public health for a year's work or more. These problems were further developed in discussions led by Dr. Eugene R. Kelley, state health officer of Massachusetts, and Dr. S. J. Crumbine, state health officer of Kansas.

The round table which was called at 1 p. m., presided over by Dr. Frank J. Goodnow, president of Johns Hopkins University, took up for general discussion a number of specific questions developed at preceding sessions which were proposed by the chairman.

The concluding addresses were given by Dr. Ray Lyman Wilbur, president, Stanford University, who spoke on the university of the future—a recruiting and training center for the public health professions; by Dr. Lewellys F. Barker, Johns Hopkins Hospital, presenting a paper on "Public Health and the Future Commonwealth," and by Dr. David L. Edsall, dean of the Medical School and School of Public Health, Harvard University, who gave a recapitulation of the conference, and a report of the Committee on Recommendations, composed of Dr. David L. Edsall, Dr. Ray Lyman Wilbur, Dr. Victor Vaughan, Dr. William H. Welch, Dr. E. G. Williams and Dr. A. J. McLaughlin. On behalf of this committee, Dr. Edsall reported the following resolutions:

That the Congress of the American Medical Association on Medical Education, Medical Licensure, Public Health and Hospitals include a section on the education of health officers and sanitarians.

That the Surgeon General of the United States Public Health Service be requested and empowered to appoint a committee including Dr. C. C. Bass, New Orleans; Dr. W. H. Howell, Baltimore; Dr. A. J. McLaughlin, U. S. Public Health Service; Dr. E. O. Jordan, Chicago; Dr. M. J. Rosenau, Boston; Dr. R. L. Wilbur, Palo Alto, Calif.; Dr. Ennion Williams, Richmond, Va.; Dr. C.-E. A. Winslow, Yale, and Dr. D. L. Edsall, Harvard, the committee to enlarge itself to fifteen, and that this committee consider whatever questions it sees fit and take whatever further action for future conferences may seem wise in order to continue the activities that this conference has started.

Surgeon-General Cumming made a brief concluding address in which he said: "I am sure we have planted a tree in the last two days which will bear much fruit," after which the conference stood adjourned.

## Foreign Letters

### LONDON

(From Our Regular Correspondent)

March 3, 1922.

#### Exclusion of Women Students from the London Hospital

The decision to take no more women medical students at the London Hospital has aroused considerable discussion. The reason is not that women have proved unsatisfactory students but that the difficulties of educating them with men have proved too great. They were first admitted in 1908. It was then found that a number of men students would not join the hospital if they were to be taught with them. Further, at the hospital great difficulties were experienced in teaching certain subjects to mixed classes. But the discussion has brought to light evidence to the contrary. Dr. W. J. Fenton, dean of Charing Cross Hospital, has never found any difficulties. He argues that, in medical education and science, sex does not enter at all. At Edinburgh University, where there are about 400 women medical students, no difficulty is found in instructing them in the same classes as men. The only class in which they are taken separately is midwifery. The experience is the same in many provincial Scotch and Irish medical schools—Aberdeen, Belfast, Birmingham, Cardiff, Manchester, Leeds, Glasgow and Dublin. But at Dundee and Manchester, sympathy is expressed with the views entertained at the London Hospital.

#### The Closing of the Military Orthopedic Hospital

On grounds of economy, which has become urgent in our national finance, it is proposed to close the military orthopedic hospital at Sheperd's Bush (London). In a letter to the *Times*, Sir Robert Jones opposes this. He points out that in the early days of the war this hospital was conceived as anatomically reconstructive and physiologically reeducative. It has become an inspiration as well as a source of surgical practice. Founded to treat by mechanical and operative methods, in conjunction with complete and elaborate installations of electrical and other curative means, it specialized in those graver cases which called for prolonged retention in the wards and many months and even years of after-care. For its unique equipment and staff work, as a pioneer of recent orthopedic surgery and for its continued postwar activity, the hospital has become recognized as a distinguished center. Only by the persistent application of every branch of medical science practiced there can many of the present patients be restored to comparative ease of movement and capacity for work. Any attempt to institute elsewhere the expensive equipment of Sheperd's Bush would increase instead of save expenditure, and would diminish the unity and efficiency of the staff.

#### The Action of Light on the Body

The Medical Research Council has appointed a committee to advise it with regard to the promotion of researches into the biologic action of light, with a view to obtaining better knowledge of the action of sunlight and other forms of light on the human body in health and in disease. The committee consists of physiologists and physicians—Prof. W. M. Bayliss, F.R.S. (chairman); Mr. J. E. Barnard; Dr. H. Dale, F.R.S.; Capt. S. R. Douglas (late of the Indian Medical Service); Sir Henry Gauvain; Dr. Leonard Hill, F.R.S., and Dr. J. H. Sequeira. Professor Bayliss is one of the foremost English physiologists. Mr. Barnard is a well-known microscopist and the inventor of a new microscope. Dr. Dale is known for his work on anaphylaxis and the action of



drugs. Sir Henry Gauvain is the pioneer in this country on heliotherapy in the treatment of surgical tuberculosis. Dr. Leonard Hill is well known for his researches on blood pressure, ventilation and other subjects. Dr. Sequeira is a dermatologist.

#### Rockefeller Gift to London

The Rockefeller Foundation has made a gift to London of \$2,000,000 to build and equip a school of hygiene. It is not two years since the foundation gave \$10,000,000 to University College Medical School.

#### A Lister Memorial

The tenth anniversary of the death of Lister brings within view the completion of a scheme to honor his memory. Soon after his death the question of a memorial was taken up, but the war prevented its being carried out. A representative committee was appointed, and collected \$60,000, which was subscribed from all over the world. Out of this has been established the International Lister Fund for the Advancement of Surgery. A sum of \$2,500, with a bronze medal, will be awarded every three years, irrespective of nationality, in recognition of distinguished contributions to surgery, the recipient being required to give an address in London under the auspices of the Royal College of Surgeons. The award will be made by a committee of members nominated by the Royal Society, the Royal College of Surgeons of England, the Royal College of Surgeons of Ireland, and the Universities of Edinburgh and Glasgow. The Royal College of Surgeons of England will be the trustees and administrators of the fund.

Sir Thomas Brock, the sculptor, has executed a memorial tablet to Lister, which was unveiled in Westminster Abbey in 1915. He is at present engaged in designing a bronze bust to be mounted on a pedestal in Portland Place, near Lister's last home. The bust and pedestal will stand about 21 feet high. The front of the pedestal will be decorated with bronze figures representing Humanity pointing out the bust of Lister to a boy bringing garlands of flowers. Laurel wreaths will be included in the scheme of ornamentation, and there will be an inscription at the foot of the pedestal.

#### The Altering Modern Face, and Adenoids

Sir Arthur Keith and G. G. Campion, a dentist, have communicated to the British Dental Society an elaborate paper on the growth of the human face in which they reach important conclusions as to the causation of adenoids. Observations of Keith on prehistoric English skulls have convinced them that in a considerable portion of the modern population of Britain there is a tendency for the face to become longer and narrower. Bony matter appears to be laid down to about the same amount in these long, contracted, hatchet faces as in the shorter, wider, more primitive prehistoric faces; but from some alteration in the mechanism of growth, new bone which was laid down to add to the width of the face is, in a large proportion of present-day people, deposited so as to increase length at the expense of width. With this reduction in width comes a pinching of the facial skeleton from side to side, leading to the irregular projection of points in the middle line of the face. The mechanism of facial growth is influenced by the functional state of the pituitary and of the sexual organs. The so-called adenoid face, the narrow, deep palatal arch, the irregular eruption of the teeth, are not due to a simple mechanical cause, such as enlarged tonsils or adenoids in the tidal way. The authors regard these conditions and the disordered growth of the face as due to manifestations of a single pathologic state. What the exact nature of this state is they are not in a position to decide. But the close relation between bone growth and the action of the glands of internal secretion, on the one

hand, and the frequency with which a hypertrophy of the lymphoid system is accompanied by defective formation of bone, on the other, render it not difficult to believe that irregularities of the jaw and the development of adenoids may result from nutritional disturbance. The explanation may come through the kind of research now being conducted by McCarrison, who has shown that a diet deficient in certain vitamin constituents will affect the normal working of the hormone growth systems of the body. Vitamins appear to act directly on the glands of internal secretion. The defects so frequent in the development of the English or rather Nordic face may prove to be the result of some deficiency or error of the dietary on which infants are reared. No doubt, too, our modern dietary is of a kind which leaves teeth, jaw and muscles of mastication imperfectly exercised. The physical stimuli, which are necessary for the normal growth of bone, are missing. This, too, may be a factor in gnathic degeneration.

#### PARIS

(From Our Regular Correspondent)

Feb. 17, 1922.

#### Bergson's Opinions on Modern Education

The value of classical studies in secondary education having been, for some time, the theme of much lively controversy, it is interesting to note the ideas on the subject entertained by the famous author of "Evolution créatrice." Bergson regards the study of Latin and Greek as very useful. In considering the utilitarian and the culture value of classic studies, he does not take into account merely the immediate good that is derived from them, but attaches a greater importance to certain special qualities and habits of thought that these studies develop in the mind of the student, whereby the studies taken up later at the university are rendered more fruitful and are given a deeper sociological content. Among other arguments, Bergson cites the testimony of the president of Columbia University, New York City, who in a report recently published, expressed himself in substance as follows:

There are many signs that indicate that the time is near at hand when a comprehensive and renewed inquiry must be instituted to determine the value of the ancient classics considered as instruments of education. Many of those who have shown the greatest contempt for classical studies are beginning to ask themselves whether it was wise to take the extreme positions that they have been led to take. Many of those who have been indifferent on the subject are commencing to show signs of repentance as the results of their indifference become more and more apparent. . . . It is a question of no mean practical significance to determine how we are going to repair the damage caused by the growing contempt for the ancient classics, which has characterized the past generation.

While Bergson attaches great value to Greek and Latin, he recommends that the study of the sciences, more particularly the experimental sciences, shall receive more emphasis in secondary schools than they have received in the past. However, in his opinion, the strengthening of the courses of study is of less importance than another measure that he proposes, namely, a modification of the present method of determining who are entitled to be admitted to the secondary schools. Bergson holds that, if a more careful selection of pupils were made, more subjects could be studied and more rapid progress would be possible. He also holds that severe tests should be given to determine the pupils who are entitled to be promoted from one class to the next higher. He favors, too, the establishment of a large number of scholarships in secondary schools, which would make it possible for many intelligent and industrious pupils from the elementary schools to enter the secondary schools who are now excluded for lack of funds. The *lycée*, or classical secondary school, could then be reserved for the classical studies and the training of the intellectual élite. Children of the bourgeoisie should not



be admitted unless they give evidence of special aptitude for classical studies. At present, the intellectual make-up of the pupils of the *lycée* is largely a matter of chance.

In addition to the *lycées*, in which the classical studies would be strengthened in a twofold manner by increased emphasis on the sciences and belles-lettres, Bergson recommends the organization of more technical, industrial, commercial and agricultural schools of all kinds—primary, secondary and academic. In the industrial secondary schools a simplified instruction in literature could be offered, with Greek and Latin eliminated, but it would be advisable to select instructors who had enjoyed the benefits of a classical education.

#### A Monument to Professor Chauveau

The death of Professor Chauveau, former president of the Academy of Sciences, the Academy of Medicine, the Society of Biology, the French Association for the Advancement of Science, etc. (*THE JOURNAL*, Feb. 10, 1917, p. 475), dates back to the beginning of January, 1917. At that time, the attention of the public was centered entirely on the war, so that it has been reserved for this day to appoint a committee for the purpose of collecting the necessary funds with which to erect a monument to Professor Chauveau. The treasurers of this committee are: Dr. Nicolas, professor of the Faculté de médecine of Lyons, and Monsieur Boucher, professor of the Ecole vétérinaire of Lyons.

#### Homage to Prof. Raphael Lépine

The pupils and friends of the late Prof. Raphael Lépine, whose home was in Lyons, propose to honor the memory of this clinical investigator by placing a bronze likeness, in the form of a plaque, in the amphitheater of the clinic in which he was an instructor for thirty-four years. A subscription has been opened with this purpose in view. Contributions, which must not exceed 50 francs, may be sent to Dr. Froment, 25, rue Godefroy, à Lyon (Rhône).

#### BUENOS AIRES

(From Our Regular Correspondent)

Jan. 23, 1922.

##### Tuberculosis

The antituberculosis campaign continues to receive a great deal of attention in the literature and in lectures, but the measures actually put in force are few compared with the number of plans and projects. Dr. Clemente Alvarez of Rosario has considered the past, present and possible future of tuberculosis control in Argentina, basing his data and conclusions on his great experience in this field. He points out that statistics here are very deficient through mistakes or concealment as regards the real diagnosis. There are several provinces in which 40 and even 75 per cent. of the people die without a medical diagnosis being made of the cause of death. In Buenos Aires the total mortality from infectious diseases in the last three decades was 19,212, 9,403 and 9,891, respectively, which shows the enormous decrease brought about by sanitary improvements, in spite of the considerable increase in population. On the other hand, the total mortality from tuberculosis was 11,040, 15,959 and 23,019, respectively, an increase in the same period. However, the relative death rate has decreased up to 1914, when it was 14 per 10,000 for the whole country, and from 15 to 16 per 10,000 in Buenos Aires. Unfortunately, since 1914 it increased again up to 22 per 10,000 in 1918, when it began to decrease again. It seems as if these fluctuations had coincided with the economic crisis. In the same year we had the lowest birth and marriage rates ever recorded here. Dr. Alvarez calls attention to the susceptibility of the natives, which is a well known fact, and that of the negroes, a race almost extinct

in Argentina. The decline of the high death rate which prevailed until thirty or forty years ago has coincided with the large European immigration. Of the foreign colonies, the one most affected by tuberculosis is the Spanish nationality. Dr. Alvarez refers extensively in his work to the existing institutions and prophylactic measures actually in force or suggested.

##### Influenza

Since the middle of December, ships arriving from Europe have been bringing patients with influenza, pneumonia or bronchopneumonia. On this account, a large number of ships have been under observation by the authorities. The patients were taken to the isolation hospital.

##### Sanitary Stations

The national department of health is completing the establishment of sanitary stations in Jujuy, Catamarca and La Rioja. In spite of our federal form of government, the national government has been compelled to take charge of elementary measures of public health in those provinces.

##### Medical Schools

A considerable improvement has been noticed already in discipline and organization in the medical schools. The medical school at Rosario is already operating regularly, although not completely equipped. Its progress has been hampered by the fact that several professors live at Buenos Aires, 300 kilometers (180 miles) away, going there only to give their classes and returning immediately. Among them there is a professor receiving \$1,500 a month, a salary so far never paid by any school in this country. This professor, however, is giving at the same time classes in the School of Pharmacy of Buenos Aires and in the Medical School of La Plata, a town 60 kilometers (37 miles) away from Buenos Aires and 360 kilometers (223 miles) from Rosario. The worst part of it is that he is teaching physiology and, through his filling all these chairs, he prevents the advancement of their laboratories and keeps other competent persons from becoming professors.

#### AMSTERDAM

(From Our Regular Correspondent)

March 5, 1922.

##### The Mortality in the Netherlands in 1920

The Central Bureau of Statistics recently published a report on the mortality in the Netherlands according to the age of the inhabitants and the causes of death. It contains some points of general interest. The average mortality rate was 11.99 per thousand of population, the lowest figure recorded for many years. It is interesting to note that the rate has been decreasing steadily since 1870, in which year it was 24.80 per thousand. At this time, the mortality rate was higher in the large cities than in the country. About 1878, the rate in the towns and among the rural population became practically the same, and since that time, while the mortality rate for the country districts did not change, that of the large cities continued to diminish, and in 1920 reached the low figure of 10.27 per thousand. The question arises whether we may regard these data as the tangible results of a sane application of the laws of hygiene and of social medicine.

The average mortality rate for children was 7.28 per thousand. As in other countries, it may be noted that in winter the deaths are caused mainly by respiratory affections and in summer by gastro-intestinal diseases. Just as the general mortality rate, so the child mortality rate has been plainly and steadily decreasing since 1875.

Tuberculosis was the cause of 9 per cent. of the deaths, the rate for women being considerably higher than for men.



Cancer was responsible for 9.39 per cent. of the deaths. The contagious diseases may, for practical purposes, be summed up under typhoid fever, scarlet fever, measles, diphtheria and whooping cough. There were 133 cases of cerebrospinal meningitis, and fifty cases of smallpox. Another interesting fact was brought out by the statistics: the percentage of persons dying without having received medical attention during their last illness is also decreasing steadily. From 1905 to 1909, 6.8 per cent. of the deaths took place without the patients having had recourse to medical care; from 1910 to 1914 the number was 5.3 per cent.; from 1915 to 1919, 3.9 per cent., and in 1920, 3.5 per cent.

#### Campaign Against Tuberculosis

A royal decree just issued expresses approval of the constitution of the *Nederlandsche Centrale Vereeniging tot bestrijding der tuberculose* (Netherlandic central association for the campaign against tuberculosis). The association outlines the purposes of the organization as: (1) the formation of a union between the various societies and the various groups that are concerning themselves in the Netherlands with the campaign against tuberculosis; (2) discussions and elaboration of better means for the advancement of the campaign, and (3) public and private propaganda by the organization of courses, scientific investigations and popular lectures.

The organ of this central federation has just published a statistical report on the tuberculous persons in the Netherlands, the number of which reaches 16,259. The number of women suffering from the disease is considerably larger than that of the men: 9,069 as compared with 7,190. But the inquiry did not bring out a complete response, only 40 per cent. of replies being received. We may conclude, therefore, that for the whole country the figure given should be multiplied by  $2\frac{1}{2}$ . The number of cases that justify treatment in the sanatoriums is estimated at 7,000.

#### Tour of Hospitals by Glee Club

The Glee Club of the University of Leyden is planning to make a tour of the Netherlands in April with a view to giving concerts in the principal hospitals and sanatoriums.

#### Course in Hygiene at Utrecht

The Central Laboratory of Hygiene of Utrecht is planning to organize in the near future a series of courses, intended exclusively for physicians, on some of the important questions of hygiene and social medicine. These courses will be given under the direction of Professors Aldershöff, Broers, Baart de la Faille, van Loghem and Terburgh. They will comprise—besides practical exercises on serology, bacteriology and protozoology—lectures on legislation pertaining to hygiene, social prophylaxis, occupational diseases, contagion, infection, and the control of epidemic diseases.

#### BERLIN

(From Our Regular Correspondent)

Feb. 18, 1922.

#### Waldeyer's Hands

As mentioned in a former letter, the Berlin anatomist Wilhelm Waldeyer stipulated in his will that his brain was to be turned over to his successor, Professor Fick, for examination, and that his hands were to be given to Prof. H. Virchow (a son of Rudolph Virchow), who had been his prosector for many years, for dissection. "My children will not take it amiss that their father, who is an anatomist body and soul, makes this disposition." These words will be better understood when I state that Waldeyer's family, as was he also, is Catholic, and that one of his daughters (the wife of the Cologne surgeon Professor Tilman) is strictly

orthodox, and therefore would, of course, be much grieved over the disposition her father made of his body. The examination of Waldeyer's brain, in consequence of the many difficulties involved, will require considerable time, but the examination of the hands has been completed, and Professor Virchow recently presented a report to the Berlin Anthropological Society on the results. He carried out his researches in accordance with a method worked out by himself and doubtless used by him exclusively. He calls his method "preparation according to form." Preparation according to form is accomplished by hardening the soft parts by injecting a solution of formaldehyd into the blood vessels and afterward enclosing the hands and forearms in a plaster-of-Paris cast. Then the soft parts are carefully removed and replaced by plaster-of-Paris paste as the bones are dissected free. By means of this method, which Virchow worked out originally in connection with his activities as teacher in the Art Academy, it is possible to demonstrate the exact position of the bones in the tissues and to show to what extent the form of all parts of the human body is determined by the underlying skeletal bones. But also scientific questions may be solved by this method. Waldeyer stipulated that his hands should be compared one with the other, and refers to his right hand as his "writing hand." That Waldeyer, even up to the time of his death, wrote a firm and beautiful hand, is known to all who have ever seen his letters and manuscripts. From photographs that Virchow presented it could be clearly seen that the right hand must have written a great deal. The effect that much writing had had on the right hand was brought out even more plainly by the changes that had been produced by chronic arthritis, from which Waldeyer suffered. The joints that were most used were found to be most abraded, from which fact we must not conclude that these were more affected by arthritis. In the left hand it could be plainly noted that the ulnar side had been used as a support. Whether further researches on the bone structure will corroborate the previous findings, remains to be seen. It appears somewhat doubtful whether other anatomists will share Virchow's opinions in regard to Waldeyer's "writing hand."

#### The Physicians of Germany in 1921

In the *Deutsche medizinische Wochenschrift* 48:166 (Feb. 2) 1922, Dr. Prinzing, who is well known as a writer on medical statistics, furnishes his first statistical report, since the beginning of the war, on the number of physicians in Germany and their location. After the beginning of the war, a survey of the distribution of physicians was, of course, impossible, since most of the physicians were serving in the army medical corps. But also since the war it has been impossible to obtain for publication complete statistics, for the reason that political conditions in Germany have been so upset, and also owing to the fact that changes in territorial limits have been numerous in connection with the carrying out of the terms of the Versailles peace treaty. Then again, on account of the enormous increase in the cost of printing, the *Arztekalender*, which were formerly relied on, in great measure, for the furnishing of information in regard to the movements of physicians in the various parts of the country, have not appeared of late. The so-called "Personalkalender" of the Leipzig *Arzteverband* has now reappeared, for the first time since the war, but, for the reasons cited above, its statements can hardly be regarded as fully reliable, and Prinzing's calculations, which are based on these, can be considered as only approximately correct. In spite of this fact, his findings have for us a general interest. The present population of Germany is put at 60,412,084, which appears to be too high an estimate. The total number of physicians in Germany is placed at 36,186, or virtually six to every 10,000



inhabitants. The number of medical students (including those who were mobilized) for the period 1913 to 1921 was as follows:

Year	Men and Women		Number of Women	
	Summer Semester	Winter Semester	Summer Semester	Winter Semester
1913.....	14,750	14,999	773	847
1914.....	15,920	13,312	1,027	1,004
1915.....	13,803	14,239	1,145	1,162
1916.....	14,981	15,690	1,364	1,446
1917.....	16,331	17,316	1,633	1,785
1918.....	18,162	18,380	1,982	1,983
1919.....	20,497	19,235	2,059	2,084
1920.....	18,853	16,645	2,096	1,869
1921.....	15,870	.....	1,937	.....

It will be seen that the number of women students has more than doubled since 1913. Germany counts within its borders today forty-four cities, in which the proportion of physicians to the total population is as follows:

	Population	Total Number of Physicians in 1921	Number of Physicians to Each 10,000 of Population
Forty-four cities .....	15,169,000	15,989	10.5
Remainder of Germany.....	45,223,000	20,288	4.5

For the purpose of comparison, we give the number of physicians to each 10,000 inhabitants during the two years preceding the war:

	Number of Physicians to Each 10,000 of Population		
	1912	1913	1921
In the large cities.....	9.5	9.6	10.5
Remainder of Germany.....	3.7	3.8	4.5

In the twenty-nine communes of which Greater Berlin is composed, the number of physicians per capita, the population being estimated at 3,800,000, for the years 1910, 1912, 1913 and 1921 was:

Year	Total Number of Physicians	Number of Physicians to Each 10,000 of Population
1910.....	3,894	11.1
1912.....	4,032	11.1
1913.....	4,151	11.1
1921.....	4,621	12.1

In the other cities of the empire, Wiesbaden stands at the head, for the reason that this city, being a watering place, offers physicians more abundant opportunities for employment. The cities next in order in their proportion of physicians are all university towns, for now Frankfort-on-the-Main, which has always had a large number of physicians, has also become the home of a university. The increase in the number of physicians in Munich has been exceptionally great. The smallest percentage of physicians for the cities is found in the large manufacturing towns of the Rhine Province and Westphalia, which was also true before the war. There has been a striking decrease in the percentage of physicians to the population in Kiel, Cologne, Leipzig and Saarbrück.

Marriages

ALFRED ERVIN SMITH, Chicago, to Miss Miriam Helen Mitchell of Kansas City, Mo., at Chicago, March 11.

F. LESLIE JENNINGS, Baltimore, to Miss Hazel May Baer of Waynesboro, at Chester, Pa., February 27.

VICTOR C. SMITH to Miss Beulah Roth, both of New Orleans, at Forest Hills, L. I., recently.

FREDERICK ROMAN SANDERSON to Miss Margaret Madden, both of Rochester, Minn., in January.

WILLIAM E. GALLAGHER, Akron, Ohio, to Miss Ray Rieger of Niagara Falls, N. Y., January 29.

WALDO A. SCHAEFER, Galena, Ill., to Miss Ida Elizabeth Shand of Springfield, Ill., March 18.

JULIUS I. MANDEL to Miss Frieda Okun, both of Chicago, February 7.

Deaths

James Woods Babcock ☉ Columbia, S. C.; Medical School of Harvard University, Boston, 1886; died, March 4. Dr. Babcock was born in Chester, S. C., Aug. 11, 1856; received his A.B. from Harvard University, 1882; former president of the National Association for the Study of Pellagra; for the past ten years proprietor of the Waverley Sanitarium, Columbia; chairman of the South Carolina State Hospital Commissions; member of the Columbia Board of Health; professor of psychiatry, Medical College of the State of South Carolina, 1915; member of the American Medico-Psychological Association and the South Carolina Historical Society. He published monographs on insanity, and wrote, with C. H. Lavinder, the first treatise on pellagra in English.

Frederick Renner, Nebraska City, Neb.; University of Paris, France, 1851; founder and editor of the *Nebraska Staats Zeitung*; member of the Nebraska territorial legislature, and of the constitutional convention of 1864; captain of the Nebraska militia during the Indian campaigns from 1862-1864; collector of internal revenue, 1867-1870; first president of the Nebraska Territorial Pioneers Association; died at the home of his daughter, at Helvey, Neb., February 5, from senility, aged 92.

Bennett Bernard Browne, Baltimore; University of Maryland School of Medicine, Baltimore, 1867; member of the Medical and Chirurgical Faculty of Maryland; professor of gynecology, Women's Medical College of Baltimore, since 1882, and in the Polyclinic and Postgraduate Medical School, since 1885; veteran of the Civil War; member of the American Gynecological Society; historian for the Society of Colonial Wars; died, March 10, aged 79, from senility.

Frederick Angier Spafford ☉ Flandreau, S. D.; Dartmouth Medical School, Hanover, 1879; secretary of the South Dakota State Medical Association; member of the board of regents, University of South Dakota College of Medicine, Vermilion; served during the World War as senior medical advisor of the state; Indian Service; died recently, aged 66, from heart disease.

William Charles Barber, Annandale, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1888; superintendent of the Sanatorium for Treatment for Nervous Diseases, Annandale; professor of mental diseases, Queen's University Faculty of Medicine, Kingston, 1911; died recently, aged 59, from heart disease.

William Fairthorne Lehman, Chester, Pa.; Jefferson Medical College of Philadelphia, 1883; member of the Medical Society of the State of Pennsylvania; member of the board of education; consulting chief of the obstetrical board, Chester Hospital; died, March 3, aged 62, from general debility.

George Elliott, Toronto, Ont.; Trinity Medical College, Toronto, 1895; former secretary of the Canadian Medical Association; at one time assistant professor in anatomy at the University of Toronto Faculty of Medicine, Toronto; died, February 21, aged 57, from arteriosclerosis.

Corelli Collard Field, Winnipeg, Man., Canada; Trinity Medical College, Toronto, 1894; L., R.C.P. and L., R.C.S. Edinburgh; L., R.F.P.S. Glasgow, Scotland, 1896; associate professor of pediatrics, University of Manitoba, Winnipeg; died, December 28, aged 52, from pneumonia.

James Roland Howell, Pueblo, Colo.; Northwestern University Medical School, 1905; veteran of the Spanish-American War; served in France during the World War, as an infantryman; died, March 7, at the Woodcroft Hospital, aged 44, from pleurisy and lobar pneumonia.

J. D. Bissonette, Stirling, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1892; member of the school board; former president of the Hastings Medical Association; died, December 31, aged 65, from hemorrhage resulting from gastric ulcers.

Theron James Kinnear ☉ Springfield, Ill.; Northwestern University Medical School, Chicago, 1904; specialized in ophthalmology, otology, laryngology and rhinology; died, February 28, aged 45, at St. John's Hospital, following an operation for a furuncle.

☉ Indicates "Fellow" of the American Medical Association.



**Charles Arthur Beebe**, Fond du Lac, Wis.; Western Reserve University School of Medicine, Cleveland, 1882; former president of the city council and board of education of Fond du Lac; died, March 6, aged 68, at Chicago, from pneumonia.

**Robert Elgin Buchanan** ♂ Independence, Iowa; Rush Medical College, Chicago, 1883; formerly superintendent of the Yankton State Hospital, Yankton, S. D.; at one time mayor of Parker, S. D.; died, March 10, aged 67, from myocarditis.

**Walter Elbirth Clay**, Mt. Carroll, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1897; served during the World War, M. C., U. S. Army; died, February 26, aged 52, at a hospital in Chicago, from pneumonia.

**Henry Anthony B. MacCauley**, San Francisco; Medical Department of the University of the City of New York, 1888; physician for the Commercial Cable Company; died recently, at Midway Island, in the Pacific Ocean, aged 56.

**Marit F. Nelms**, Commerce, Ga.; Atlanta College of Physicians and Surgeons, 1900; member of the Medical Association of Georgia; died, February 16, at the Wesley Memorial Hospital, Atlanta, from spinal meningitis, aged 50.

**Frank M. Agnew**, Makanda, Ill.; Medical College of Ohio, Cincinnati, 1862; Miami Medical College, Cincinnati, 1866; member of the Ohio State Medical Association; also a minister; died, March 10, at Carbondale, Ill., aged 81.

**Harry Meredith Dale**, Los Angeles; State University of Iowa College of Medicine, Iowa City, 1894; member of the Medical Society of the State of California; died recently, aged 54, from influenza and cerebral hemorrhage.

**Albert Algernon Marrett**, Constance, Ky.; University of Louisville Medical Department, Louisville, 1874; for nearly thirty years coroner of Boone County, died, March 1, at St. Elizabeth's Hospital, Covington, Ky., aged 77.

**James H. Miller**, Antlers, Okla.; Kansas City (Mo.) Medical College, 1892; banker and retired physician; was found dead in bed, February 18, with a bullet wound in his head, presumably self inflicted, aged 66.

**Cassius M. C. Campbell**, Oakmont, Pa.; Jefferson Medical College, Philadelphia, 1879; former member of the state legislature; at one time member of the Oakmont school board; died, February 22, aged 66.

**William Lawrence Mauldin, Jr.** ♂ Greenville, S. C.; College of Physicians and Surgeons, Baltimore, 1901; formerly county physician and member of the city police commission; died, March 3, aged 43.

**Elma C. Griggs**, Ithaca, N. Y.; Hahnemann Medical College and Hospital, Chicago, 1888; medical examiner, Sage College, Cornell University; died, February 24, aged 56, in New York City.

**John Attig Burgoyne**, Columbus, Ohio; Starling Medical College, Columbus, 1895; member of the Ohio State Medical Association; died, February 23, aged 50, from bronchopneumonia.

**J. Judd Miller**, Norfolk, Va.; Medical College of Virginia, Richmond, 1898; member of the Medical Society of Virginia; city coroner; died, February 20, aged 50, from lymphatic leukemia.

**Julien Trist Bringier**, Burnside, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1888; member of the Louisiana State Medical Society; died, February 15, aged 60.

**Joseph O. McElroy**, Hickory, Pa.; University of Wooster Medical Department, Cleveland, 1869; member of the Medical Society of the State of Pennsylvania; died, February 22, aged 86.

**Alonzo E. Clough**, Madison, S. C.; College of Physicians and Surgeons, Keokuk, Iowa, 1878; formerly served as chairman of the Republican state committee; died, February 26.

**Louis Kosuth Stock**, Terre Haute, Ind.; Eclectic Medical Institute, Cincinnati, 1882; proprietor of the Vigo Sanatorium; member of the city council; died recently, aged 68.

**Reed McColloch Baird**, Wheeling, W. Va.; Medical School of Harvard University, Boston, 1882; died, February 28, aged 64, at the Ohio Valley General Hospital, from paresis.

**Henry D. Wells**, Middleburg, Ky.; Albany Medical College, Albany, 1857; member of the Medical Society of the State of New York; died, February 25, aged 92, from senility.

**Millard F. Decker**, Comanche, Okla.; Barnes Medical College, St. Louis, 1904; member of Oklahoma State Medical Association; died suddenly, December 29, aged 55.

**Alfred James Henwood**, Brantford, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1879; formerly surgeon on a transatlantic steamer; died, January 20, aged 56.

**Nathaniel Leander Berry, Jr.** ♂ North Whitefield, Me.; Medical School of Harvard University, Boston, 1903; died, February 22, aged 41, from heart disease.

**Alfred S. Rixey**, Culpepper, Va.; Jefferson Medical College, Philadelphia, 1882; member of the Medical Society of Virginia; died, February 28, aged 61.

**William C. Pendergraft** ♂ Hollis, Okla.; St. Louis College of Physicians and Surgeons, St. Louis, 1892; died, February 20, aged 56, following a long illness.

**William Thomas Reeve**, Boerne, Texas; Fort Worth School of Medicine, 1900; served five terms as mayor; justice of the peace; died, February 19, aged 67.

**Samuel A. Gotcher**, Chicago; St. Louis College of Physicians and Surgeons, St. Louis, 1901; died, March 6, from tumor of the brain, aged 55.

**Christian P. K. Dencker** ♂ Chicago; Rush Medical College, Chicago, 1906; died, March 12, aged 55, from heart disease following a motor accident.

**William D. Jennings**, Augusta, Ga.; Atlanta Medical College, Atlanta, 1868; father of three physicians; died, February 28, from pneumonia.

**George Earle Moore**, Ironwood, Mich.; Rush Medical College, 1883; member of the Michigan State Medical Society; died, March 3, aged 65.

**Charles Dunsford Jenkins**, Boston (licensed, Massachusetts, years of practice); author of several medical books; died recently, aged 74.

**Frederick J. Weidenhammer**, Waterloo, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1905; died in December, aged 53.

**Harrison Willis Maltby** ♂ Chicago; University of Illinois College of Medicine, Chicago; died, January 17, aged 45, from diabetes mellitus.

**Ernest A. Bradbury**, Barre, Vt.; Beach Medical Institute, Indianapolis, 1885; died, February 26, aged 62, from heart disease and senility.

**Augustus H. Schott**, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1879; died, February 23, aged 72, from pneumonia.

**William H. Banks**, Waymansville, Ind. (licensed, Indiana, 1897); veteran of the Civil War; died, March 2, aged 84, from influenza.

**Jesse A. Hunter**, Miller, Ind.; Eclectic Medical College, Cincinnati, 1897; died, February 27, aged 60, at a hospital in Crown Point.

**William Sloan**, Toronto, Canada; Victoria University Medical Department, Victoria, 1865; died, December 25, aged 90.

**William Hall**, Brampton, Ont., Canada; McGill University Faculty of Medicine, Montreal, 1887; died recently from diabetes.

**Winona E. Long**, Battle Creek, Mich.; University of Arkansas, Little Rock, 1909; died, March 10, from pellagra, aged 36.

**Emma J. Collop Fitch**, Indianapolis; Medical Department, University of Indianapolis, 1901; died, February 27, aged 44.

**Thomas Canning Church**, Valley Falls, N. Y.; University of Michigan, Ann Arbor, 1878; died, February 16, aged 66.

**Frederick Fraser McEwen**, Aylmer, Ont., Canada; University of Toronto Faculty of Medicine, 1905; died recently.

**Henry David Peterson**, Millersburg, Ky.; Eclectic Medical Institute, Cincinnati, 1892; died, February 21, aged 67.

**Frank Vail Martin**, Pittsburgh; Western Pennsylvania Medical College, 1899; died, February 27, aged 54.

**Wesley Melick**, Nevada, Mo.; University of Pennsylvania, Philadelphia, 1857; died, February 23, aged 92.

**George C. Howlette**, Atkinson, Ill.; Chicago Homeopathic Medical College, 1880; died recently, aged 64.

**Homer Mason**, Toronto, Canada; Trinity Medical College, Toronto, 1889; died, February 4, aged 57.

**George E. Hall**, Chicago (license, Illinois, years of practice); died, March 10, aged 88.

**Samuel A. Kennedy**, Indianapolis (license, Indiana 1897); died, February 20, aged 92.



## The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ALBERT ABRAMS, A.M., M.D., LL.D., F.R.M.S.

"Spondylotherapy," "Electronic Reactions," the "Oscilloclast," the "Electrobioscope," Etc.

For some time THE JOURNAL has received inquiries of which the following recent examples are typical. This from an Ohio physician:

"Please give me some information concerning Dr. Abrams and his diagnostic and therapeutic devices known as reflexaphore and oscilloclast. If this is published please withhold my name."

A physician in Massachusetts writes:

"Can you give me any information concerning Dr. (?) San Francisco, California, who reports himself able to diagnose syphilis from a drop of blood sent him on a blotting paper. He has caused a patient of mine a great deal of needless worry."

And from Rhode Island a physician facetiously inquires:

"I am interested to know of the 'Reactions of Abrams.' Have you any information that you can give me in regard to this matter? They apparently do wonderful things in the West."

While a New York physician acknowledges his failure to keep up with the times thus:

"To-day I had occasion to see a patient who mentioned having an Abrams test for gonorrheal infection of the prostate. He also stated he wished to have Abrams' treatment for the same condition. Could you enlighten me as to what these are? I thought I had kept myself up to date as to all new tests and treatments in my line; but evidently I have been delinquent."

According to our records, Albert Abrams, A.M., M.D., LL.D., F.R.M.S., was born in San Francisco in 1864. He was graduated in medicine by the University of Heidelberg, Germany, in 1882. Dr. Abrams is a member of his local medical society and through that holds fellowship in the American Medical Association. Dr. Abrams has written voluminously. In 1910, his book on "Spondylotherapy" ("Physio-Therapy of the Spine") was reviewed in THE JOURNAL. "Spondylotherapy" is a neologic creation of Dr. Abrams. According to its disciples, it concerns itself "only with the excitation of the functional centers of the spinal cord" and has been called "the science of evoking the reflexes of the body both to diagnose and to cure disease." In bringing its review of Abrams' book on "Spondylotherapy" to a close, THE JOURNAL said:

"... one wonders whether this is an attempt to explain osteopathy and chiropractic to the understanding of the regular practitioner, or to exploit the very ingenious percussion devices of the author, or whether it is really true that medical men really know practically nothing about the cure of disease through treatment of the spine. Let us hope that it is the latter and that a careful study of this unique volume may open new avenues of therapy heretofore undreamed of."

While the review was obviously critical, yet in advertising the book, the publishers picked out part of the closing sentence, omitted the context, and quoted THE JOURNAL as having said:

"Let us hope that a careful study of this unique volume may open new avenues of therapy heretofore undreamed of."

When this matter was brought to the attention of Dr. Abrams, he replied, "I fail to see any real difference in the two quotations" and "only one ... with an astigmatic mentality" could "see any incongruity between the context and the concluding sentence." Yet, in this same letter which attempted to justify the garbling of a quotation so as to make a critical review appear a laudatory one, Dr. Abrams declared that the review in question was "conceived and executed in a malicious spirit."

Between 1912 and 1914 Dr. Abrams gave "clinical courses" on "Spondylotherapy" in various parts of the country—price \$50. These "courses" were widely advertised by an Ohio

concern that seems to make a specialty not only of handling the advertising campaigns of those members of the medical profession who have unusual or bizarre methods to exploit, but also of acting as an agent for the sale of such devices and publications as may be necessary to the proper practice of the particular brand of therapy that is being exploited. At the time this concern was featuring Abrams' course it called attention to the alleged fact that "no class were [sic!] so busy as those employing mechanical treatment such as Osteopathy, Chiropractic, Mechanotherapy, etc."

Says Dr. Abrams:

"Despite the fury of tongue or the truculence of pen, the osteopath and chiropractor are inspiring the confidence of the community with their systems. Right or wrong in their theory, they are, in vulgar parlance, 'delivering the goods.' Spondylotherapy was a product of necessity—the translation of an ignored field of medicine from a chaotic to a scientific basis."

Possibly the following testimonial published by Dr. Abrams as typical of many received, and credited to "Dr. Henry Stacy Dodge, Richmond, Va.," may explain the field that "Spondylotherapy" is to cover. Incidentally, "Dr." Dodge is listed in the Richmond telephone directory as a chiropractor:

"I have been in practice for fifteen years in Chiropractic and ten years an Osteopath and I wish to say that during the last three years, I have received more genuine and sincere satisfaction from the application of Spondylotherapy than all other methods combined. My success in gastrology alone is worth many times the cost of the information."

More recently, Dr. Abrams has advertised that he gives a "course" in Spondylotherapy in San Francisco, beginning on the first of each month. The course last four weeks. "The honorarium for this course is \$200.00."

In 1912 an organization was created devoted to this new therapeutic method: the "American Association for the Study of Spondylotherapy." Later Dr. Abrams was made Honorary President. Whether the organization is still viable we do not know.

### ELECTRONIC REACTIONS OF ABRAMS

In addition to "Spondylotherapy," Dr. Abrams has also evolved what he calls the "Electronic Reactions of Abrams." These are said to make possible long-distance diagnoses, it being necessary only to send a few drops of blood taken from the patient and allowed to dry on a slide. There are, it seems, certain instruments and devices used in the performance of these diagnostic feats. By means of the "Electronic Reactions" Dr. Abrams (while admitting the protective factor of vaccination against smallpox) has discovered that practically all the vaccines obtained from reliable firms yield the reaction ("electronic tests") of congenital syphilis, and that many of them also yield the reaction of tuberculosis and of streptococci and staphylococci. Further, "from the cicatrices of all vaccinated persons, one can always elicit a reaction of congenital syphilis and in early scars a tuberculous reaction." Dr. Abrams also declares that exposing vaccine virus for ten minutes to blue light will destroy the syphilitic, streptococcic and staphylococcic reactions and exposing it for the same period to yellow light will destroy the tuberculous reaction.

One of Dr. Abrams' disciples—Sir James Barr—frequently quoted with evident satisfaction, declares that from a fresh sample of blood spread over four square inches of white blotting paper, "Dr. Abrams can diagnose the sex, race and disease of the patient." However, there are certain precautions that must be taken: The patient should face West, "the blood should be taken in a subdued light and there should be no strong red or yellow coloring material in the room."

In various places Dr. Abrams has asseverated that "if splanchno-diagnosis is approached with a prejudiced mind, it is better not to attempt it, for there are 'none so blind as those that will not see'."

Dr. Abrams founded and edits *Physico-Clinical Medicine*. It is published by "Physico-Clinical Co." at 2135 Sacramento St., San Francisco—the address, according to the telephone directory, of Dr. Abrams' residence. It is a quarterly "Devoted to the Study of the Electronic Reactions of Abrams and the Visceral Reflexes of Abrams, in the Diagnosis,



Treatment and Pathology of Disease." Single copies, one dollar; by the year, two dollars. The publication is, apparently, not entered as second class matter, in fact, presumably, it could not be, as it seems obviously to be an advertising affair. Each issue contains material dealing with "Spondylotherapy," "Splanchno-Diagnosis," "Electronic Reactions" and other discoveries and theories of Dr. Abrams. In it also is published a list of "Some recent visitors at Dr. Abrams' laboratory," the names and addresses of the "Lessees of Oscilloclast" (about which more later), testimonials for Dr. Abrams, etc.

Of course, it carries advertisements of Dr. Abrams' "Physico-Clinical Laboratory" (also at 2135 Sacramento St.) and his "Practical Courses in Spondylotherapy and Electronic Diagnosis and Treatment" (\$200 in advance). Some of the devices of Dr. Abrams are also advertised. "No apparatus sold on credit. Terms cash." Among these are:

"Dr. Abrams' Electrodes for Electronic Diagnosis..	\$ 6.00
"Biodynamometer .....	36.00
"Dr. Abrams' Reflex Set .....	36.00
"Dr. Abrams' Electro-Concusser.....	120.00

#### THE OSCILLOCLAST

But what seems to be the outstanding piece of apparatus, devised or invented by Dr. Abrams, the pièce de résistance, as it were, of physioclinical diagnosis and treatment, is the "Oscilloclast."

This device is not for sale. It can be had only on lease. The first payment is \$200 or \$250, according to whether it is wired for alternating or direct current. Then there is a monthly payment of \$5. Dr. Abrams publishes a list of more than 130 men who have leased one or more "Oscilloclasts." Sir James Barr's name heads the list. According to Dr. Abrams, the "Oscilloclast" owes its conception to the therapeutic principles he advocates. These, in part, are:

- "1. Physiologic phenomena are manifestations of electronic energy.
- "2. Pathologic phenomena are manifestations of perturbed electronic energy.
- "3. The energy in health and disease has an invariable and definite rate of vibration (determinable by the electronic reactions).
- "4. Specific drugs possess a like vibratory rate as the diseases for which they are effective.
- "These like vibratory rates (homovibrations) of drugs owe their efficiency to their inherent radioactivity. Thus, an obsolete drug like gamboge painted on the chest in incipient tuberculosis will effect a symptomatic cure within a few weeks. Gamboge possesses the same vibratory rate as tuberculosis. Our conception that drug action is dependent on direct cellular contact is thus demolished. . . .
- "5. All forms of energy whether derived from heat, electricity or magnetism may be made to yield different rates of vibration and these rates corresponding to the diseases are utilized for their destruction."

If one accepts one of Dr. Abrams' theories, the possibilities of such a piece of machinery as the "Oscilloclast" would seem to loom large, not only in therapeutics, but also in economics. All one needs to do, according to Dr. Abrams, is to ascertain "the vibration rate of a drug" and then to substitute the same vibration as produced by the "Oscilloclast." Thus, if one substitutes the "vibratory rate of atropin" for the drug itself "the mouth dries or the subject feels as if it were puckered." Conversely, if you switch the "Oscilloclast" to the pilocarpin vibratory rate, there is a copious flow of saliva.

#### THERAPEUTIC RESULTS WITH OSCILLOCLAST

What some of the lessees of the oscilloclast are accomplishing (if we are to believe the clinical reports published in *Physico-Clinical Medicine*) may be gathered from the following quotations:

"Woman, Age 52.—Diagnosis of acquired syphilis made by one of our most eminent clinicians. (?) Abrams test showed tuberculosis of the apex of the right lung. No syphilis. Fourteen treatments with the Oscilloclast at 5. Patient gained fourteen pounds in three weeks. Now in perfect health."

"Mechanic, Age 22.—Acute acquired syphilis. General eruption, throat, mouth symptoms and chancre. Thirteen treatments with the Oscilloclast at 3, and splenic sterilization only. Complete abatement of all symptoms."

"Woman, Age 42.—Strep infection of the second upper cuspid tooth of three years' standing. Well developed sinus. Regular discharge of pus. Eight treatments with the Oscilloclast at 2. Clinically cured."

"Cancer of the pylorus and pylorotomy executed at the Mayo Clinic. Later, vomiting, severe pains, loss in weight, etc. After the third treatment [with "Oscilloclast"] pains ceased and, after 14 treatments, she was well and continued so when I last saw her."

"Cancer of uterus. Inoperable. Severe uterine hemorrhages. Electrode of Oscilloclast to cervix and hemorrhage ceased after second treatment. After 14 treatments the patient declared she was well. Another case of the same character was followed by equally good results."

#### ECONOMIC RESULTS WITH OSCILLOCLAST

It also seems to be a great business-getter, as the following testimonials published by Dr. Abrams show:

"The Oscilloclast has doubled my business."—S. King, M.D. (Pa.)."

"I am doing good work with the Oscilloclast in T. B. and when I get more room I shall want another machine."—H. Michener (Kas.)."

"We are swamped with work and our three cord Oscilloclast is working to full capacity. We are still astonishing the incredulous and keeping busy. We must have another Oscilloclast at once for there are so many here who demand treatment."—W. P. Myers, M.D. (Cal.)."

#### THE ELECTROBIOSCOPE

More recently, Dr. Abrams has extended his observations and experiments, using what apparently is a modification of the old fashioned pith ball suspended by a silk thread from a rubber rod with which we all experimented during our high school days. This device Dr. Abrams has called the "Electrobioscope." It is for sale by the Physico-Clinical Co. The "Electrobioscope," in addition to doing many other things, has demonstrated (to Dr. Abrams) the "sexuality of numbers and sounds." Thus, if the pith ball is charged negatively and the numbers 1 to 9 are marked on a narrow board and the vowels and consonants are marked on another board, it will be found—still according to Dr. Abrams—that even numbers repel the pith ball while odd numbers attract it. Vowels repel and consonants attract. "A female hair repels and a male hair attracts." From these data Dr. Abrams deduces that "even numbers and vowels are female and odd numbers and consonants are male."

The value of music as a therapeutic agent is briefly touched on by Dr. Abrams and we are told that the overture of "Tannhäuser" will increase the pulse rate whereas "Meditation" diminishes blood pressure and pulse rate. "In dogs, music augments elimination of carbonic acid and increases the consumption of oxygen." Love, says Dr. Abrams, "is dependent upon matter in vibration and the passion component has a wave metric index of 14 in both sexes." In referring to legendary lore, Dr. Abrams apparently assigns a scientific basis for the belief among the bucolic that carrying around a potato has therapeutic virtue. Thus:

"A cut potato (carried on the person) prevents elicitation of the stomach reflex when the negative pole of a bar-magnet is presented to the stomach region whereas the positive pole will evoke dulness."

It seems also that the "rheumatic rings" of iron "when worn yield a neutral energy which prevents the elicitation of the stomach reflex by either pole of a bar-magnet." We learn, too, that the divining rod "no longer belongs to occultism but is entitled to consideration as a scientific fact."

Dr. Abrams also has investigated methods whereby the sex of the fetus may be diagnosed. In the human these investigations have, apparently, been so limited as to permit only tentative conclusions. In the case of eggs of the domestic fowl, Dr. Abrams reports that with four eggs that yielded negative polarity, the result of incubation was four hens. Of five eggs yielding a positive polarity only two hatched, one was a hen and one a rooster, giving an "error in observation." Three eggs tested yielded neutral polarity and "as predicted the eggs were sterile." In case of an egg yielding a negative (female) polarity "an attempt was made to reverse the sex by painting one end of the egg with a yellow coloring material." The result was a rooster.

Much more might be written about, what one of our correspondents calls, the wonderful things they are doing in the West, but space forbids. "Neither the fury of tongue," says Dr. Abrams in the preface to his book, *New Concepts in Diagnosis and Treatment*, "nor the truculence of pen can discredit the author's observations which are capable of analysis and demonstration." If there is any scientific foundation for the marvels that Dr. Abrams so picturesquely features, the scientific world has not yet found it out!



## Correspondence

### "WHAT OUGHT THE UNITED STATES PHARMACOPEIA TO CONTAIN?"

To the Editor:—As chairman of the Subcommittee on Scope of the present Revision Committee, may I be permitted to point out certain inaccuracies in the article by Dr. Osborne (THE JOURNAL, March 4, p. 639).

First, the final decision as to the admissibility of therapeutic agents now rests solely in the hands of the medical members of the committee.

Second, Dr. Osborne gives a list of "substances recommended for deletion because they cannot be standardized." On this list are a number of substances which both can be, and are, standardized. Many urgently require standardization; for instance, if there were no legal standard for distilled water, pharmacists would be at liberty to employ any kind of water, which in case of certain drugs—as silver nitrate—might have serious influence on the final result of the prescription. Again, when we remember what a variety of substances are sold under the name of soap, some of them containing free alkali, some containing various irritant fatty acids or poisonous coloring matters, and when we remember that soap is an ingredient in compound cathartic pills and other preparations for internal use, it appears that soap is in much need of pharmaceutic standardization. What Dr. Osborne means by the expression "cannot" be standardized is a little obscure. Why a standard for flaxseed (linum) is any less explicit or enforceable than a standard for strophanthus seed does not appear obvious. Of the list of substances which he says cannot be standardized, the great majority are standardized.

Third, in regard to the spices, there is room for difference of opinion as to which are of sufficient therapeutic importance to justify recognition; but to dismiss them all cavalierly with the statement that "such aromatic oils as are needed may be listed" seems to be going too far. For instance, oils of capsicum and of ginger are neither commercial articles nor therapeutically active. I myself greatly prefer powdered mustard seed as a counterirritant to the oil of mustard. (Incidentally, Dr. Osborne later dismisses mustard oil.) It should be remembered that there are few substances on the market more freely adulterated than the spices. If they have therapeutic uses, which I believe some of them do have, they require standardization.

Fourth, Dr. Osborne gives a long list of drugs and preparations that he believes are therapeutically undesirable. Such expressions of personal views may be of value if collected from a large number of sources, but Dr. Osborne makes the very common mistake of forgetting that the Pharmacopeia is the legal standard for drugs from the Philippines to Cuba and from Alaska to Florida, and that the citizen of San Francisco or New Orleans has just as much right to protection from impure drugs as the citizen of New Haven. For example, Dr. Osborne apparently uses sodium bromid in preference to all others; other physicians prefer the ammonium or calcium salt. There are quite a number of drugs on his list that he believes should be deleted which I have used frequently with great satisfaction. He may not like the flavor of anise water, but many persons do, and find it a very useful vehicle. As Dr. Osborne does not specialize in skin diseases, he naturally has little use for sodium thio-sulphate or diachylon ointment; but both are widely used by dermatologists.

Another common error into which Dr. Osborne falls is forgetting that substances, not directly valuable themselves as therapeutic agents, are important as the source of widely

used drugs. For instance, granulated ferrous sulphate, which he would delete from the Pharmacopeia, is one of the bases of the very popular Bland's pill; hypophosphorus acid is used in the preparation of syrup of ferrous iodid; lead oxid is an essential in the preparation of solution of lead subacetate, etc. Any assertion that a chemical which enters into a pharmaceutical preparation does not require standardization I cannot assent to. If, for instance, in the manufacture of syrup of ferrous iodid, a hypophosphorus acid was used which was contaminated with barium or oxalic acid (each of which is used in manufacturing hypophosphorus acid) the finished syrup might be highly toxic.

The Subcommittee on Scope realizes that it is impossible to make a pharmacopeia which would meet all of the widely divergent views of the medical profession as to what should be included; but it has striven to reflect the usage of the great mass of the competent physicians of the country.

HORATIO C. WOOD, JR., M.D., Philadelphia.

### "SPECIES OF HYMENOLEPIS AS HUMAN PARASITES"

To the Editor:—In his article on *Hymenolepis nana* and *diminuta* as human parasites (THE JOURNAL, March 4), Dr. Chandler referred to eight cases recorded in the United States. In order to have the records complete I am taking the liberty of referring to the investigations by DeBuys and Dwyer in the "Study of the Stools in Children's Institutions Showing the Incidence of Intestinal Parasitic Infections" (*Am. J. Dis. Child.* 18:269 [Oct.] 1919) in which we included one case of infestation by this parasite, occurring in a girl, aged 3 years. In this child there was a triple infection, consisting of *Hymenolepis diminuta*, *Trichuris trichiura*, and *Ascaris lumbricoides*. The blood of this little girl showed a 13 per cent. eosinophilia.

L. R. DeBuys, M.D., New Orleans.

### "EFFECTIVENESS OF INFANT WELFARE CLINICS FROM A MEDICAL POINT OF VIEW"

To the Editor:—The manuscript of an article by Dr. Knox and myself with the foregoing caption in THE JOURNAL, March 11, was read by Sir Arthur Newsholme. He made the comment that the value of the data would be improved if the ages of the children "under medical supervision" and of the death rates in the different age periods were given. One would thus be able to determine whether the good results were due to medical supervision or to a selection of children predominantly in the second and third years of life, and therefore with lower death rate expectancy. In a large measure I believe this criticism is met by the following data, which unfortunately were omitted from the original article.

Of 4,366 children making at least three visits to the infant welfare clinics of the Babies' Milk Fund Association of Baltimore, the numbers making their first visit at the time specified were:

	In First Year	In Second Year	In Third Year	Total
White .....	2,366	277	30	2,673
Colored .....	1,542	105	46	1,693
Total .....	3,908	382	76	4,366

The statistics herewith supplied demonstrate the important fact that the physicians of the association first saw the great majority of children "under medical supervision" in the period of greatest vulnerability to disease and when the death rate was highest, i. e., the first year of life. Eighty-nine per cent. of the children in Group 1 (88 per cent. of the white children



and 90 per cent. of the colored children) were first seen in the first year of life. The good results of medical supervision cannot therefore be attributed to the possibility that the children did not come under this medical supervision until they were in the relatively less dangerous second and third years, when the mortality is comparatively low even without medical supervision.

GROVER F. POWERS, M.D., New Haven, Conn.

### "BASAL METABOLISM"—A DISCLAIMER OF RESPONSIBILITY

To the Editor:—In a recent publication entitled "Basal Metabolism," by Mr. Frank B. Sanborn of the Sanborn Company, my name has been given a prominence which is neither warranted nor desired. My sole contribution to this book consisted in permitting Mr. Sanborn to copy verbatim an article entitled "The Basal Metabolism in Fever," which appeared in THE JOURNAL, July 30, 1921. I had previously written him, Sept. 9, 1921, saying that I did not desire to revise an article for his book or make any important revisions in my publications, and on Oct. 22, 1921, I wrote saying that I did not desire to be responsible for an abstract of the fever article that he submitted to me. In spite of this he has advertised my name among those who approved abstracts, and has printed my name among the contributors.

On page 25 of his book, Mr. Sanborn has given the normal standards suggested by Dr. Aub and myself, and on page 29 has printed a table entitled "Du Bois Normal Standards of Basal Metabolism with 1.8 Calories Deducted." I wish to emphasize the fact that the latter table should not bear my name, and repeat what I told Mr. Sanborn that at the present time I do not care to make any important revisions in my publications.

EUGENE F. DU BOIS, M.D., New York.

### THE QUALITIES OF THE GRADUATE MEDICAL STUDENT—A CORRECTION

To the Editor:—Please correct the published report of my discussion Monday, March 6, at the meeting of the Congress on Medical Education (THE JOURNAL, March 11, p. 740). Briefly, the two points quoted were: 1. From the standpoint of the graduate school, we can confirm the suspicion that things are not all right with the graduates that are being turned out from the undergraduate schools. Many of them lack individuality. Many of them have a most receptive attitude and very little initiative. Though they may carry a tremendous burden of knowledge of the preclinical branches, much of it is useless since they are unable to apply it in clinical work. This all indicates the great need for better coordination between preclinical and clinical departments. 2. I must protest, however, the proposal to reduce premedical training to a purely utilitarian basis. Every medical graduate, that he may not lack culture, should know something of art and of literature, of music and of history. He should be thoroughly familiar with his own and with at least one other modern language.

LOUIS B. WILSON, M.D., Rochester, Minn.

### "A NEW HYSTERECTOMY KNIFE"

To the Editor:—In THE JOURNAL, February 25, Dr. W. E. Darnall described and illustrated "a new hysterectomy knife." For many years I have been using this knife, which was devised by Dr. Howard A. Kelly and is listed by the Kny-Scheerer Company as Kelly's hysterectomy spud.

DR. WOODSON H. TAULBEE, Maysville, Ky.

## Medical Education, Registration and Hospital Service

### COMING EXAMINATIONS

ARIZONA: Phoenix, April 4-5. Sec., Dr. Ancil Martin, 207 Goodrich Bldg., Phoenix.  
ARKANSAS: Little Rock, May 2-3. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville.  
ARKANSAS: Little Rock, May 9. Sec., Eclec. Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith. Sec., Homeo. Bd., Dr. Geo. W. Love, Rogers.  
COLORADO: Denver, April 4. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.  
DISTRICT OF COLUMBIA: Washington, April 11. Sec., Dr. Edgar P. Copeland, 1315 Rhode Island Ave., Washington.  
HAWAII: Honolulu, April 10. Sec., Dr. G. C. Milnor, 401 Beretania St., Honolulu.  
IDAHO: Boise, April 4. Director, Mr. Paul Davis, Boise.  
ILLINOIS: Chicago, March 27-29. Director, Mr. W. H. H. Miller, Springfield.  
MASSACHUSETTS: Boston, May 9-11. Sec., Dr. Samuel H. Calderwood, 144 State House, Boston.  
MINNESOTA: Minneapolis, April 4-6. Sec., Dr. Thomas S. McDavitt, 539 Lowry Bldg., St. Paul.  
MONTANA: Helena, April 4. Sec., Dr. S. A. Cooney, Power Bldg., Helena.  
NEVADA: Carson City, May 1. Sec., Dr. Simeon L. Lee, Carson City.  
NEW MEXICO: Santa Fe, April 10-11. Sec., Dr. R. E. McBride, Las Cruces.  
OKLAHOMA: Oklahoma City, April 11-12. Sec., Dr. J. M. Byrum, Shawnee.  
PORTO RICO: San Juan, April 4. Sec., Dr. M. Quevedo Baez, Box 804, San Juan.  
RHODE ISLAND: Providence, April 6-7. Sec., Dr. Byron U. Richards, State House, Providence.  
UTAH: Salt Lake City, April 4. Director, Mr. J. T. Hammond, Salt Lake City.

### Maine November Examination

Dr. Frank W. Searle, secretary, Maine State Board of Registration in Medicine, reports the written examination held at Portland, Nov. 8-9, 1921. The examination covered 10 subjects and included 100 questions. An average of 75 per cent. was required to pass. Three candidates were examined, all of whom passed. One candidate was licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Georgetown University	.....	(1921)	90
Tufts College Medical School	.....	(1920)	78
Washington University	.....	(1915)	83

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Georgetown University	.....	(1921)	Dist. Colum.

### Michigan Reciprocity Report

Dr. Beverly D. Harison, secretary, Michigan State Board of Registration in Medicine, reports that, during 1921, seventy-two candidates were licensed by reciprocity. The following colleges were represented:

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Cooper Medical College	.....	(1883)	Washington
University of California	.....	(1914), (1916)	California
George Washington University	.....	(1920)	Dist. Colum.
Howard University	.....	(1908)	Penna.
Emory University	.....	(1920)	Georgia
American College of Medicine and Surgery	.....	(1904)	Illinois
Bennett College of Eclectic Medicine and Surgery	.....	(1877)	Illinois
Chicago College of Medicine and Surgery	.....	(1913)	Iowa
Chicago Homeopathic Medical College	.....	(1886)	Illinois
College of Physicians and Surgeons, Chicago	.....	(1907)	Indiana
Illinois Medical College	.....	(1910)	Tennessee
Northwestern University	.....	(1913), (1915), (1920, 2)	Illinois
Rush Medical College	.....	(1917) Kansas, (1919), (1920)	Illinois
University of Illinois	.....	(1915), (1916, 2)	Illinois
Woman's Medical School of Northwestern Univ.	.....	(1898)	Illinois
Indiana University	.....	(1919)	Indiana
State University of Iowa College of Medicine	.....	(1898)	Wisconsin
(1919), (1920) Iowa			
Louisville Medical College	.....	(1904)	Washington
University of Louisville Medical Dept.	.....	(1897)	W. Virginia
(1916) Kentucky			
Tulane University	.....	(1919)	Louisiana
Baltimore Medical College	.....	(1895) Massachusetts, (1907)	New York
College of Physicians and Surgeons, Baltimore	.....	(1912)	Connecticut
Johns Hopkins University	.....	(1913), (1914) Maryland, (1916)	Indiana
(1918) Maryland			
University of Maryland	.....	(1916), (1921)	Maryland
Harvard University	.....	(1873) Oklahoma, (1901)	Mass.
(1912) California			
Tufts College Medical School	.....	(1920, 2)	Mass.
Barnes Medical College	.....	(1903)	Missouri



Beaumont Hospital Medical College.....	(1897)	Illinois
St. Louis University School of Medicine.....	(1920)	Missouri
Columbia University .....	(1917)	New York
Long Island College Hospital.....	(1914)	New York
University of Buffalo.....	(1920)	New York
Cleveland Pulte Medical College.....	(1914)	Ohio
Pulte Medical College.....	(1897)	Ohio
Starling Medical College.....	(1896), (1903)	Ohio
Toledo Medical College.....	(1911)	Ohio
Western Reserve University.....	(1919), (1920)	Ohio
University of Oklahoma.....	(1913)	Oklahoma
Hahnemann Medical Coll. and Hosp. of Philadelphia..	(1896)	Penna.
Jefferson Medical College.....	(1901)	Penna.
Meharry Medical College.....	(1914), (1920)	Georgia
(1920), (1921) Tennessee		
University of Tennessee.....	(1914)	Tennessee
Vanderbilt University .....	(1913), (1917)	Tennessee
Laval University .....	(1919)	Maine
University of Heidelberg.....	(1905)	Wisconsin

## Book Notices

**PSYCHOPATHOLOGY.** By Edward J. Kempf, M.D., Clinical Psychiatrist to St. Elizabeth's Hospital, Washington, D. C. Cloth. Price, \$9.50. Pp. 762, with 87 illustrations. St. Louis: C. V. Mosby Company, 1920.

Dr. Kempf considers man's behavior in the evolutionary sense, pointing out that the highly developed civilization of man has checked a number of biologic impulses, and established forms of control which are responsible for disordered behavior. His study has been based too largely perhaps on the insane and not sufficiently on the normal mind, for he tends to overstress the abnormal elements in life. Freud's views he accepts in toto, and in the matter of symbolism he goes beyond even the most ardent disciples of the Freudian cult. Man is considered by Dr. Kempf a being subject to affective cravings; his reactions to these cravings are suppression, repression, dissociation, summation, readjustment, regression, progression and sublimation. On the basis of these terms the author submits a new classification of insanities, showing how the old nomenclature falls within the new Freudian terminology. Psychasthenia, hysteria and manic-depressive types are included as suppression neuroses; dementia praecox, phobias and also some of the former group are included under repression neuroses; paranoid types and pathologic lying, alcoholic and drug neuroses or compensation neuroses, depressive types and involutional melancholia with allied dementia praecox types are regression neuroses; and all of the hallucinated and paranoid, catatonic, hebephrenic and delirious types are dissociation neuroses. The regression neuroses are the result of failure to compensate, but with regression to a preceding more comfortable level permitting wish-fulfilling fancies; and the dissociation neuroses are the results of uncontrollable cravings which dominate the personality despite the efforts of the ego to prevent it.

Naturally, in this conception of life the libido is everything. "Cynical people, including those who are married, as well as unmarried," says Dr. Kempf, "are cynical because they have accepted the world as containing nothing that can ever really gratify their love cravings." "The tendency to sexual castration or secret autoeroticism and perverse substitutions can only be adjusted by aggrandizing the maintenance of virility and removing fear of normal sexual relations." "Most of our chronic lawbreakers and asocial adults, thieves, pimps and prostitutes, whether mental defectives or not, are chronically asocial in their tendencies because of the pernicious influence of mismatched parents or the hatred of the adults who raised them." "I have never known an individual, who had fixed autoerotic or perverse cravings, whose history showed that he was treated in his childhood like a true personality when conflicting with his parents." "Anthropological history reveals that, as an animal, man has, universally, acquired a trait which is not to be found in any other species, and that is the capacity to use symbols and images as substitutes for realities in order to acquire stimuli which arouse comfortable and potent autonomic tensions." The sentences quoted are all italicized by Dr. Kempf to indicate their importance in his scheme of study. After establishing these principles, he devotes the major portion of his book to the analysis of a large number of cases from St. Elizabeth's Hospital in Wash-

ington. The illustrations, except such as concern various expressions and attitudes assumed by the patients, are reproductions of famous paintings and sculptures, showing the symbolism for sexual objects there displayed, somewhat as was done by the late Dr. Otto Wall in his book on "Phallic Worship."

In the final chapter on psychotherapeutic principles, Dr. Kempf contrasts the virtues of the psychoanalytic method with the suggestive and hypnotic methods. He is convinced that the suggestive method of treating a psychopath rarely if ever effects a permanent cure, whereas the psychoanalytic method often effects remarkable, apparently permanent cures. He has small patience with those who object to psychoanalysis on the ground that it may do more harm than good, and points to failures in certain instances with other therapeutic methods to justify the application of this method. Like many others of the strong adherents of this method of practice, he believes that the only critic of psychoanalysis who can be considered at all reliable by the medical profession is the man who has himself practiced psychoanalysis and did not have to abandon it because of his own affective discomforts. He even indicates that if a physician fails to psychoanalyze successfully a male patient with homosexual cravings, it may be because the physician himself fears a tendency to regress to that condition.

Dr. Kempf's book has in it much of value; it suffers, however, from the same overenthusiasm and unmasticated bolting of undigested pabulum, without the application of the least real scientific scrutiny, that has characterized the offerings of practically all who have entered the psychoanalytic field.

**PNEUMOPERITONEAL ROENTGEN-RAY DIAGNOSIS.** A Monograph with Atlas. By Dr. Arthur Stein, M.D., F.A.C.S., Associate Gynecologist, Harlem Hospital, New York City, and Dr. William H. Stewart, M.D., F.A.C.P., Roentgenologist, Harlem Hospital. Cloth. Price, \$30. Pp. 73, with 40 illustrations. Troy, N. Y.: The Southworth Publishing Company, 1921.

This work gives the best description so far published of this valuable aid in the diagnosis of abdominal lesions. The authors have written a clear, concise, comprehensive description of the procedure from its incipience up to the present time. Their technic is impressive, owing to the simplicity with which it is executed. The indications and contraindications are stated clearly. The illustrations, reproduced from the authors' own roentgenograms, show the wide applicability of the procedure and are a valuable collection for study and reference. A noteworthy feature is the description of the roentgenograms in English, French and Spanish.

## Medicolegal

### Licensing and Regulating Maternity Hospitals

(*State v. Women's and Children's Hospital Association (Minn.)*,  
184 N. W. R. 1022)

The Supreme Court of Minnesota affirms an order denying the defendant a new trial after it had been convicted of maintaining a maternity hospital without first having obtained a license. The court holds that Chapter 50, Laws Ex. Sess. 1919, entitled "An act defining and regulating maternity hospitals," is not unconstitutional, as embracing more than one subject; that it was enacted in the exercise of the police power, and infringed no right of the defendant under the provision of the constitution relative to the taking of property without due process, or other constitutional right. The court says that the statute defines a maternity hospital, for the purposes of the act, and provides for its licensing by the state board of control. Conducting such a hospital without a license is a misdemeanor. Regulations are prescribed for its conduct, and for the health and well-being of the inmates, and public welfare is in view. The court is unable to see that the statute contains anything which is not germane to the title. Within the constitutional sense, it embraces but one subject. The statute is a police regulation. Its purpose is to secure the health and comfort and well-being of the



inmates of the hospital and to safeguard the interests of the public. That in doing so it somewhat restricts the activities of those conducting maternity hospitals, if the restriction be no greater than is reasonable, is not important. Others than the owners are interested. That the legislature may require the licensing of maternity hospitals has been held. Whether the licensing of maternity hospitals should be regulated, as it is by the statute drawn in question, was a matter of legislative discretion. The court does not agree with the contention that the statute grants to the board of control arbitrary power to withhold a license, regardless of conditions, and that it is therefore void. The statute is paternalistic. So are other statutes enacted in the exercise of the police power. It contemplates an investigation and consideration of conditions and a supervision and regulation by the board; but an arbitrary refusal of a license is not intended. However, the court adds that the only questions decided are that the title of the act is sufficient within the constitutional requirement, and that in the exercise of the police power the legislature may require maternity hospitals to be licensed.

#### When Actions for Malpractice are Barred

(*Burke v. Mayland* (Minn.), 184, N. W. R. 32)

The Supreme Court of Minnesota, in affirming an order overruling a demurrer to the complaint, which stated a cause of action for malpractice, holds that such actions are not barred by the two-year statute of limitations of Minnesota, which applies to actions for an assault, although some of the acts alleged may constitute an assault in law. The court says that the plaintiff brought this action to recover damages from the defendant, a physician and surgeon, for alleged malpractice in the performance of a surgical operation on her and in treating her for her ailments. The defendant demurred to the complaint on the ground that the cause, or causes, of action set forth therein accrued more than two years before the beginning of the action and were barred by the statute of limitations. The defendant construed the complaint as stating two causes of action, the first for an assault, and the second for an assault, if it stated a cause of action at all, and insisted that both were barred by the statute of limitations, which bars actions for assault unless brought within two years after the right of action accrued. But the court is unable to sustain the defendant's contention. Fairly construed, the court thinks that the complaint stated only one cause of action, and that for alleged malpractice. It set forth the facts in detail, and while some of them doubtless constituted an assault in law, they were not set forth as independent causes of action, but as being the acts wherein and whereby the defendant was alleged to have violated his duty to his patient. The action as brought rested on the contract of employment; and the six-year, not the two-year, limitation was the one which applied.

#### Prescription of Material for Hospital Buildings

(*Brigham et al. v. Mayor and Council of City of Dublin* (Ga.), 108 S. E. R. 532)

The Supreme Court of Georgia, in affirming a judgment denying the petitioners a writ of mandamus, holds that an ordinance prescribing that buildings to be used for hospital purposes should be constructed of brick or other noninflammable material was authorized by a city charter, which granted to the mayor and aldermen power to make such rules and ordinances respecting every matter as might be by them considered necessary or proper or incident to the government of the city and to the health and welfare of its inhabitants, etc. An ordinance was not void on the ground that it was unreasonable, which declared that it should be unlawful to erect or cause to be erected within the city limits any building to be used for hospital purposes, or other building of like character, of material other than brick, the same to be erected in all other respects as prescribed by the building laws of the city. Applying these principles, the mayor and council of the city were authorized to decline to grant a permit to the petitioners to make additions to an existing building, the same to be constructed of wood.

## Society Proceedings

### COMING MEETINGS

- Alabama, Medical Association of the State of, Birmingham, April 20-23. Dr. H. G. Perry, Montgomery, Secretary.
- American Association of Genito-Urinary Surgeons, Washington, D. C., May 2-3. Dr. R. F. O'Neil, 374 Marlborough St., Boston, Secretary.
- American Ass'n of Pathologists and Bacteriologists, Washington, D. C., May 2-4. Dr. H. T. Karsner, Lakeside Hospital, Cleveland, Secretary.
- American Association of Physicians, Washington, D. C., May 2-4. Dr. Thomas McCrae, 1627 Spruce St., Philadelphia, Secretary.
- American Bronchoscopic Society, Washington, D. C., May 3. Dr. Samuel Iglauer, 701 Race St., Cincinnati, Secretary.
- American Climatological and Clinical Association, Washington, D. C., May 2-4. Dr. Arthur K. Stone, Framingham Center, Mass., Secretary.
- American Congress on Internal Med., Rochester and Minneapolis, April 3-8. Dr. Frank Smithies, 1002 N. Dearborn St., Chicago, Secretary.
- American Dermatological Association, Washington, D. C., May 2-4. Dr. Udo J. Wile, University of Michigan, Ann Arbor, Secretary.
- American Gastro-Enterological Association, Washington, D. C., May 1-2. Dr. Arthur F. Chace, 525 Park Ave., New York, Secretary.
- American Gynecological Society, Washington, D. C., May 1-3. Dr. A. H. Curtis, 104 S. Michigan Ave., Chicago, Secretary.
- American Laryngological Association, Washington, D. C., May 1-3. Dr. George M. Coates, 1811 Spruce St., Philadelphia, Secretary.
- American Laryng., Rhinol. and Otolological Society, Washington, D. C., May 4-6. Dr. W. H. Haskin, 40 E. 41st St., New York, Secretary.
- American Neurological Association, Washington, May 2-3. Dr. Frederick Tilney, 22 E. 63d St., New York, Secretary.
- American Ophthalmological Society, Washington, D. C., May 1-3. Dr. T. B. Holloway, 1819 Chestnut St., Philadelphia, Secretary.
- American Orthopedic Association, Washington, D. C., May 2-4. Dr. De Forrest P. Willard, 1630 Spruce St., Philadelphia, Secretary.
- American Otolological Society, Washington, D. C., May 2-3. Dr. Thomas J. Harris, 104 E. 40th St., New York, Secretary.
- American Pediatric Society, Washington, D. C., May 1-3. Dr. H. C. Carpenter, 1805 Spruce St., Philadelphia, Secretary.
- American Psychopathological Association, Washington, D. C., May 1. Dr. Sanger Brown, 2d, 118 E. 80th St., New York, Secretary.
- American Society of Tropical Med., Washington, D. C., May 2. Dr. B. H. Ranson, Bureau of Animal Industry, Washington, D. C., Secretary.
- American Surgical Association, Washington, D. C., May 2-4. Dr. John H. Gibbon, 1608 Spruce St., Philadelphia, Secretary.
- American Therapeutic Society, Washington, D. C., May 1-2. Dr. Lewis H. Taylor, The Cecil, Washington, D. C., Secretary.
- Arkansas Medical Society, Little Rock, May 17-19. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
- California, Medical Society of the State of, Yosemite, May 9-12. Dr. W. E. Musgrave, Butler Bldg., San Francisco, Secretary.
- Congress of Amer. Phys. & Surgs. of North America, Washington, D. C., May 2-3. Dr. W. R. Steiner, 646 Asylum Ave., Hartford, Conn., Sec.
- Connecticut State Medical Society, Bridgeport, May 17-18. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.
- Georgia, Medical Association of, Columbus, May 3-5. Dr. Allen H. Bunce, Healy Building, Atlanta, Secretary.
- Illinois State Medical Society, Chicago, May 16-18. Dr. W. H. Gilmore, Mount Vernon, Secretary.
- Iowa State Medical Society, Des Moines, May 10-12. Dr. T. B. Throckmorton, Bankers' Trust Bldg., Des Moines, Secretary.
- Kansas Medical Society, Topeka, May 3-4. Dr. J. F. Hassig, 800 Minnesota Ave., Kansas City, Secretary.
- Louisiana State Medical Society, Alexandria, April 11-13. Dr. P. T. Talbot, 1551 Canal St., New Orleans, Secretary.
- Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-27. J. A. Chatard, 1211 Cathedral St., Baltimore, Secretary.
- Mississippi State Medical Association, Hazlehurst, May 9-10. Dr. T. M. Dye, Clarksdale, Secretary.
- Missouri State Medical Association, Excelsior Springs, May 9-11. Dr. E. J. Goodwin, 3529 Pine Street, St. Louis, Secretary.
- National Tuberculosis Association, Washington, D. C., May 4-6. Dr. George M. Kober, 370 Seventh Ave., New York, Secretary.
- Nebraska State Medical Association, Omaha, April 24-27. Dr. R. B. Adams, 1013 Terminal Building, Lincoln, Secretary.
- New Hampshire Medical Society, Concord, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
- New Mexico Medical Society, Gallup, April 28-29. Dr. J. W. Elder, Santa Fe Hospital, Albuquerque, Acting Secretary.
- New York, Medical Society of the State of, Albany, April 18. Dr. E. L. Hunt, 17 W. 43d St., New York, Secretary.
- North Carolina, Medical Society of the State of, Winston-Salem, April 25-27. Dr. L. B. McBrayer, Sanatorium, Secretary.
- Ohio State Medical Association, Cincinnati, May 2-4. Mr. Don K. Martin, 131 East State St., Columbus, Executive Secretary.
- Oklahoma State Medical Association, Oklahoma City, May 9-11. Dr. C. A. Thompson, 508 Barnes Bldg., Muskogee, Secretary.
- South Carolina Medical Association, Rock Hill, April 18-19. Dr. Edgar A. Hines, Seneca, Secretary.
- South Dakota State Medical Association, Huron, May 16-18. Dr. Frederick A. Spafford, Flandreau, Secretary.
- Tennessee State Medical Association, Memphis, April 11-13. Dr. Olin West, 327 Seventh Avenue, N., Nashville, Secretary.
- Texas, State Medical Association of, El Paso, May 9-11. Dr. H. Taylor, Texas State Bank Bldg., Fort Worth, Secretary.
- West Virginia State Medical Association, Huntington, May 17-19. Dr. Robert A. Ashworth, Moundsville, Secretary.
- Western Electro-Therapeutic Association, Kansas City, Mo., April 20-21. Dr. Charles W. Fassett, 115 E. 31st St., Kansas City, Mo., Secretary.



## Current Medical Literature

### AMERICAN

Titles marked with an asterisk (\*) are abstracted below.

#### Archives of Dermatology and Syphilology, Chicago

March, 1922, 5, No. 3

- \*Phenolphthalein Eruptions. F. Wise and E. W. Abramowitz, New York.—p. 297.
- \*Silver Arsphenamin in Treatment of Syphilis. J. Barrio de Medina, Madrid, Spain.—p. 321.
- \*Resemblance of Yeasts in Cutaneous Scrapings to Hyphomycetes. F. D. Weidman, Philadelphia.—p. 325.
- Pathologic Anatomy of Synovial Lesions of Skin. D. W. Montgomery and G. D. Culver, San Francisco.—p. 329.
- \*Yeast Infections of Skin. S. S. Greenbaum and J. V. Klauder, Philadelphia.—p. 332.

**Phenolphthalein Eruptions.**—Five cases are cited by Wise and Abramowitz in which a peculiar polychromatic eruption on the skin, with bullous, vesicular and eroded lesions of the mucosae and genitals were provoked by the ingestion of proprietary laxative containing phenolphthalein. The cutaneous lesions leave pigmented areas which persist for months and even years. The lesions "flare up" after ingestion of the drug, usually affecting the same sites as in the preceding eruption. The pigment in the skin does not react to Perles' ferrocyanid test; the cells in the corium are chromatophores and the pigment is melanin. The eruption exhibits many points of similarity to those resulting from antipyrin and arsphenamin.

**Silver Arsphenamin in Syphilis.**—The situation with regard to comparative value of various preparations of arsphenamin is summed up by Barrio de Medina as follows: As the ideal treatment has not been found as yet, authors disagree, since they do not obtain the same results. The fact that they inject one preparation in some cases and another in other cases is evidence that none of these preparations is much superior to the others. Therefore, some still prefer the old arsphenamin, some are advocates of neo-arsphenamin, and there are still others who place their hopes in the latest arsenical to come to light. Barrio de Medina's opinion of silver arsphenamin is that it is one more brand of arsphenamin which may be employed in the cases in which it seems to be indicated. It can be used only by specialists, because it has disadvantages which will prevent its general use, and it, therefore, must occupy a secondary place in the treatment of syphilis; at least, so far as the general practitioner is concerned.

**Resemblance of Yeasts to Hyphomycetes.**—The point emphasized by Weidman is that the presence of filaments in cutaneous scrapings does not always indicate ringworm in the commonly accepted sense.

**Yeast Infections of Skin.**—In seven cases with a certain type of dermatitis involving the interdigital spaces, pure cultures of a yeast were obtained by Greenbaum and Klauder. In three cases a pure culture of yeast was obtained. In the remaining four cases yeasts and staphylococci were demonstrated. Clinically, these cases conformed, in a general way, to the description of the cases of intertrigo saccharomycetica reported by others. The authors' cases of intertrigo saccharomycetica presented an exact resemblance to ringworm infection existing in the same locality. In none of the seven cases were they able to find fungi other than yeasts. These observations led the authors to study the saccharomycetic flora of the normal skin. The yeasts obtained were classified into four types. Three of the four types found were saccharomyces and one type was a cryptococcus. The types of yeasts obtained from the cases of intertrigo conformed to the four types found on the normal skin.

#### Boston Medical and Surgical Journal

March 2, 1922, 186, No. 9

- \*Tumors of Spinal Cord. W. J. Mixter, Boston.—p. 276.
- End Results of Surgical Treatment of Eighteen Cases of Tuberculous Cervical Adenitis. F. H. Lahey and H. M. Clute, Boston.—p. 289.

**Tumors of Spinal Cord.**—In the group of fifty-four cases analyzed by Mixter, laminectomy was performed on forty-five patients, the other nine being deemed inoperable. In these forty-five cases, forty-nine laminectomies were done, with two deaths, a mortality of 4.1 per cent. In one instance, a tumor was found at some distance from the situation expected, and operation was unjustifiably prolonged and the tumor removed at one sitting instead of being completed at a later date. The other death, a few hours after the removal of a small specimen of malignant new growth from the deep tissues of the back, was unexplained, though possibly it was from embolus. There were no other deaths that could be laid even remotely to the operation. Twenty-six patients are now living; of these, three are well, eight so much improved that they are or could be self-supporting, eight are somewhat improved, though still incapacitated, and seventeen have since died. Of these, two died of other diseases, one following definite improvement. The other fifteen have died as a result of the disease for which they were operated, or from sequels.

#### Journal of Bacteriology, Baltimore

January, 1922, 7, No. 1

- Certain Genera of Clostridiaceae. Studies in Pathogenic Anaerobes. V. H. H. Heller, San Francisco.—p. 1.
- Studies on Agglutination in Colon-Typhoid Group of Bacilli. O. Ishii, Boston.—p. 39.
- Study of Spontaneous Agglutination in Colon-Typhoid Group of Bacilli. O. Ishii, Boston.—p. 71.
- Sources and Characteristics of Bacteria in Decomposing Salmon. A. C. Hunter, Washington, D. C.—p. 85.
- Viability of Colon-Typhoid Group in Carbonated Water and Carbonated Beverages. S. A. Koser and W. W. Skinner, Washington, D. C.—p. 111.
- Binocular Microscope Arranged for Study of Colonies of Bacteria. G. B. Reed, Kingston, Ont.—p. 123.
- Investigation of American Stains. Report of Committee on Bacteriological Technic. H. J. Conn, Geneva.—p. 127.

#### Journal of Infectious Diseases, Chicago

March, 1922, 30, No. 3

- \*Hydrogen-Ion Studies. I. Changes in Reaction of Blood During Anaphylactic Shock. E. F. Hirsch and L. L. Williams, Chicago.—p. 259.
- Id. II. Changes in Reaction of Serum on Thermal Destruction of Complement. E. F. Hirsch and E. C. Peters, Chicago.—p. 263.
- \*Cultivation of Gonococcus. M. J. Erickson and H. Albert, Iowa City, Ia.—p. 268.
- \*Heart Rhythm in Diphtheria. C. Schwensen, Copenhagen.—p. 279.
- Study of Two Distinct Strains of Streptococcus Isolated from Same Heart-Valve Lesion. K. M. Howell, Chicago.—p. 299.
- \*Effect of Digitalis in Two Cases of Arrhythmia in Diphtheria. V. Bie and C. Schwensen, Copenhagen.—p. 308.
- Complement Fixation. V. Hemolytic Versus Fixability Powers of Complement. R. L. Kahn and E. D. White, Lansing, Mich.—p. 313.
- Production of Carbon Dioxid by Typhoid Bacillus and Mechanism of Russell Double Sugar Tube. II. Fermentation or Respiration. Phenol Red as an Indicator. H. J. Nichols and C. B. Wood, Washington.—p. 320.
- Effects of Pneumococcus Type I on Leukocytes and Hemopoietic Organs. M. S. Tongs, Chicago.—p. 323.
- Specificity of Desensitized State in Serum Anaphylaxis. H. T. Karsner and E. E. Ecker, Cleveland.—p. 333.

**Changes in Blood During Anaphylactic Shock.**—According to Hirsch and Williams there is a diminished alkalinity of the blood during anaphylactic shock, apparently in proportion to the severity of the symptoms. This change in reaction may become so great as to be incompatible with life. The altered reaction of the blood is accompanied by a roughly proportional lowering of the alkali reserve. Slight changes (usually an increase) in the concentration of the sugar of the blood occur in anaphylactic shock, but not to the degree observed in prolonged acidosis.

**Cultivation of Gonococcus.**—Testicular blood agar with a reaction of  $p_H$  7.4-7.8 Erickson and Albert found to be the most favorable medium for the isolation and subsequent cultivation of the gonococcus. For the preparation of testicular infusion agar, 2 per cent. peptone, 0.5 per cent. glucose, from 0.2 to 0.3 per cent. monobasic sodium phosphate and 2.5 per cent. granular agar are added. While the tubes are still liquid (just before the agar solidifies) human blood in the proportion of from 0.5 to 2.5 per cent. is added. If human blood is not available, defibrinated rabbit's blood (from 1 to 5 per cent.) may be substituted. The absence of sodium chlorid, the proper reaction and the moisture content are



especially important. Blood or blood serum mixed with the testicular agar or smeared on the surface of slanted tubes is necessary for the ready isolation of the gonococcus, but is not essential for the securing of growths of stock cultures.

**Heart Rhythm in Diphtheria.**—Five hundred and sixty-eight patients with diphtheria have been examined by Schwensen for symptoms of cardiac impairment; 118 who suffered from grave diphtheria have been especially examined. Furthermore, eight cases that were fatal in the acute stage have been followed thoroughly. Clinical signs of acute myocarditis were found in 17 per cent. of the 568 cases and in 75 per cent. of the cases of grave diphtheria. Typical symptoms of myocarditis were present in all fatal cases in the acute stage. During the course of the diphtheria two distinctly different types of disturbance of the rhythm appeared: (a) an "early" type which on an average appeared on the eighth day of illness. It started as organic heart block; in the course of a few hours to a few days. The rhythm, as a rule, became very complex and varying, but still it formed a distinct, easily recognizable type (flutter?). This disturbance explains the pallor, the coolness of the skin and the frequent attacks of syncope. All these patients died of heart failure in the acute stage of the diphtheria. (b) A "late" type which consisted of extrasystoles appearing on an average on the thirty-third day of the illness. Among the 562 patients who survived the acute stage extrasystoles were found in 14 per cent. and in 61 per cent. of the grave cases. Of the patients with symptoms of myocarditis 81 per cent. had extrasystoles during convalescence. None of these patients died of heart failure. In four cases of type a, histologic examinations of the atrio-ventricular node and bundle showed that this system was attacked in the same degree as the myocardium surrounding it. Electrocardiograms taken during the fifth week of illness were normal in thirty-one cases with muscular mitral insufficiency and extrasystoles. These last were found in only three patients; the two patients had extrasystoles of auricular origin while the extrasystole in the third case arose from the junctional tissues. On reexamining the patients at least two years after their discharge signs of impairment of the heart were found in more than two thirds of those who came to be reexamined. Diphtheria must, therefore, be considered an important cause of heart failure later in life.

**Digitalis in Arrhythmia Due to Diphtheria.**—In the two cases cited by Bile and Schwensen the arrhythmia stopped after the administration of digitalis, and the tracings became normal, with the exception of some extrasystoles. In the one case the child afterward recovered; in the second case, death intervened a few days later as a result of the progressive acute myocarditis which attacked the atrioventricular bundle and produced partial heart block. There two cases make it probable that in the treatment of these otherwise fatal cases with digitalis in full doses there may be a chance of curing the patient by saving the damaged myocardium from the great exertion caused by the irregularity. Furthermore, these cases show how the greater degrees of enlargement of the liver are dependent on the disturbances of the rhythm. In one case the enlargement of the liver disappeared simultaneously with the disappearance of the complex arrhythmia; in the second case the liver became very much enlarged simultaneously with the appearance of the irregular partial heart block.

### Journal of Laboratory and Clinical Medicine, St. Louis

February, 1922, 7, No. 5

- \*Internal Secretion of Pancreas. F. G. Banting and C. H. Best, Toronto.—p. 251.
- Effects of Various Foods, Food Factors and Chemical Agents on Resistance of Animals to Acetonitrile. M. Miura, Tokyo, Japan.—p. 267.
- \*Effect of Time Between Obtaining a Spinal Fluid and Making a Cell Count on Result of Count. J. Wynn, Boston.—p. 273.
- Determination of Small Quantities of Atropin in Blood Serum. H. C. van der Heyde, Amsterdam, Holland.—p. 280.
- Phenomenon of Bacteriophage. B. Rhodes, Berkeley, Calif.—p. 288.
- \*Glucose Tolerance Test. W. Langston, Oklahoma City.—p. 293.
- Improved Method of Caging and Feeding Mice. H. S. Mitchell, New Haven, Conn.—p. 299.

**Internal Secretion of Pancreas.**—Evidence is presented by Banting and Best that the islands of Langerhans are essen-

tial in the control of carbohydrate metabolism because they produce an internal secretion. The authors injected exhausted and degenerated pancreas extract intravenously. It was found that extracts prepared from these more or less exhausted glands, while retaining to some extent the reducing effect on blood and urine sugar, produce many symptoms of toxicity which are absent after injections of extracts from completely degenerated glands. As to the results: Intravenous injections of extract from dog's pancreas, removed from seven to ten weeks after ligation of the ducts, invariably exercised a reducing influence on the percentage sugar of the blood and the amount of sugar excreted in the urine. Rectal injections were not effective. The extent and duration of the reduction varied directly with the amount of extract injected. Pancreatic juice destroyed the active principle of the extract. That the reducing action is not a dilution phenomenon was indicated by these facts: (1) Hemoglobin estimation before and after administration of extract are identical; (2) injections of large quantities of saline do not affect the blood sugar; (3) similar quantities of extracts of other tissues do not cause a reduction of blood sugar. Extract made 0.1 per cent. acid is effectual in lowering the blood sugar. The presence of extract enables a diabetic animal to retain a much greater percentage of injected sugar than it would otherwise. Extract prepared in neutral saline and kept in cold storage retains its potency for at least seven days. Boiled extract has no effect on the reduction of blood sugar.

**Effect of Elapsed Time on Spinal Fluid Cell Count.**—Examination of the cells in eighty spinal fluids up to fifteen hours after lumbar puncture convinced Wynn that the cells in clear spinal fluids, collected in clean tubes and tightly stoppered, may in the absence of macroscopic pellicle, sediment, or web be safely counted if thoroughly mixed at any time up to at least fifteen hours. If the spinal fluid is not clear or becomes clouded, the results of counts at different times are apt to vary. It is desirable but not necessary for fluids to be collected in sterile tubes. Whether the fluids are kept at room temperature or in the icebox seems to be of little consequence. In two cases of meningitis, the thorough mixture of small quantities (from 0.2 to 0.5 gm. for 6 c.c.) of powdered sodium citrate with the fluids made it possible to duplicate the original cell counts (within the limit of technical error) at three and fifteen hour intervals.

**Glucose Tolerance Test in Cancer.**—The relationship between malignant disease and sugar tolerance was investigated by Langston on 154 patients, fifty-three of whom had proved carcinoma. Included in the list were cases of hyperthyroidism and hypothyroidism, neurasthenia, diabetes, tuberculosis, sarcoma and carcinoma are reported. Forty-three cases of carcinoma gave a curve, exactly the same as is found in cases of hyperactivity of the thyroid, suprarenals, etc., a curve which rises sharply to 200 mg. in forty-five minutes and over at the end of two hours. In many cases there was a marked change in the type of the curve following removal of the tumor, in a few cases reaching normal within a month. It is quite evident that carbohydrate metabolism is disturbed by carcinomatous growth, apparently in the same way as in certain endocrine disturbances. This disturbance is probably due to a secretion of the tumor cells; consequently the effect may occur quite early. If this be true, the blood sugar tolerance test should be a valuable diagnostic test for carcinoma, although there is no sugar tolerance curve definitely characteristic of carcinoma; but, most cases of carcinoma give a certain type of curve which is found in comparatively few other conditions, including tuberculosis, diabetes mellitus and hyperthyroidism. The test is of no value in suspected carcinoma of the bile tract area complicated by jaundice.

### Laryngoscope, St. Louis

January, 1922, 32, No. 1

- Operative Treatment of Suppurative Meningitis: Irrigation of Cranial and Spinal Subarachnoid Spaces. W. P. Eagleton, Newark, N. J.—p. 1.
- Deficiency Diseases of Ear, Nose and Throat: (1) Otosclerosis. (2) Hyperplastic Ethmoiditis. A. B. Kauffman, Chicago.—p. 50.
- Epiglottidectomy for Relief of Congenital Laryngeal Stridor; Report of Case. S. Iglauer, Cincinnati.—p. 56.



February, 1922, 32, No. 2

- Analysis of Systemic and Local Conditions Following Tonsillectomy and Adenoidotomy. C. G. Coakley and E. L. Pratt, New York.—p. 81.  
Two Unusual Nasopharyngeal Tumors. G. B. New, Rochester, Minn.—p. 99.  
Upholsterer's Tack in Right Main Bronchus for Seven Years. Removal by Peroral Bronchoscopy. Drainage of Lung Abscess. Recovery. J. D. Kernan, New York.—p. 102.  
Tests for Aviators. C. M. Robertson, Chicago.—p. 102.  
New Tonsil Hemostatic Forceps for Ligation of Vessels in Tonsil Fossa and Other Deep Cavities. H. V. Dutrow and A. G. Farmer, Dayton, Ohio.—p. 113.  
Diagnosis and Treatment in Lateral Sinus Thrombophlebitis. J. B. Gregg, Sioux Falls, S. D.—p. 115.  
Tonsil Section (Glass) Tube for Diagnosis and Treatment. L. M. Hurd, New York.—p. 121.  
Primary Adenocarcinoma of Bronchus. C. J. Imperatori, New York.—p. 123.  
Abscess of Lung. L. Clendenning, Kansas City.—p. 128.  
Diaphragmatic Pinchcock in So-Called "Cardiospasm." C. Jackson, Philadelphia.—p. 139.

### Maine Medical Association Journal, Portland

February, 1922, 12, No. 7

- Thyroid Gland and Toxemias; with Special Relation to Intestinal Stasis. W. S. Bainbridge, New York City.—p. 177.  
Cesarean Section. R. D. Small, Portland.—p. 188.

### Medical Record, New York

March 4, 1922, 101, No. 9

- Efficient Treatment of Compound Fractures. C. A. McWilliams, New York.—p. 353.  
Pericecal Tumor, Roentgen-Ray Diagnosis; Benefit from Roentgen-Ray and Radium Therapy for Postoperation Recurrence. S. Tousey, New York.—p. 356.  
Purpura with Gastrointestinal Symptoms. W. H. Barber, New York.—p. 358.  
Sarcoma of Stomach. W. J. Gillette, Toledo, Ohio.—p. 360.  
Diphtheritic and Postdiphtheritic Paralysis. H. B. Sheffield, New York.—p. 362.  
Rectal Stricture and Rectal Cancer Treated with Carbon Dioxide Snow. E. J. Clemons, Los Angeles.—p. 364.  
Plea for Standardization of Obstetric Procedures in Open Hospitals. J. Weiss, New York.—p. 365.  
Postwar Observations of Neuropsychiatric Cases. P. J. Trentzsch, Washington, D. C.—p. 369.  
External Use of Diathermy in Cases of Impacted Urinary Calculi. R. L. Dourmashkin, New York.—p. 371.

### Nebraska State Medical Journal, Norfolk

March, 1922, 7, No. 3

- Review of Two Thousand Consecutive Confinements. F. Schaufelberger, Hastings.—p. 77.  
Recent Developments in Treatment of Diseases of Biliary Tract. F. A. Brewster, Beaver City, Neb.—p. 83.  
Pyloric Stenosis. C. R. Spicer, Hastings.—p. 86.  
Group Medicine from Standpoint of Surgeon. H. M. Hepperlen, Beatrice.—p. 89.  
Schick Test and Diphtheria. A. G. Lueschen, Columbus.—p. 92.  
Physician as Witness. C. W. Burr, Philadelphia.—p. 95.  
Practical Perimetry. H. S. Gradle, Chicago.—p. 100.

### New Orleans Medical and Surgical Journal

March, 1922, 74, No. 9

- \*Malarial Infection as Possible Cause of Symmetric Gangrene of Extremities. J. B. Guthrie, New Orleans.—p. 604.  
Suggestive Mixed Treatment in Chronic Malaria. T. E. Wright, Monroe.—p. 612.  
The Sinuses. J. T. Crebbin, New Orleans.—p. 618.  
Oral (Teeth) Focus in So-Called Sciaticas. Two Cases. W. A. Lurie, New Orleans.—p. 622.  
Clinical Study of Colorimetric Method for Determining Gastric Acidity. D. N. Silverman, New Orleans.—p. 627.  
Case of Infected Bladder and Kidneys Producing Primary Symptoms and Unrecognized as Such on Account Malformation of Sacrum. W. P. Bradburn, New Orleans.—p. 633.

#### Malarial Infection Causes Gangrene of Extremities.—

Guthrie reports the case of a man, aged 22, who suffered intensely with throbbing pains in hands and feet and complained also of abdominal "cramps." He had a chancre in 1918 and early in the same year had suffered from malaria and an attack of measles in close succession. The pain in the feet was intense and morphin was required. A symmetrical asphyxia of the hands and feet was noted with areas of discoloration, desquamation and superficial sloughing on the former. Blood Wassermann was positive. Five days after admission, under treatment pain was entirely gone. During first two weeks after admission the temperature ranged

between 99 and 101 F., followed by sweating. A double infection of malarial parasites was found—tertian and falciparum. Quinin was given and the temperature promptly declined. On account of low blood pressure, intravenous glucose solution, in strength of 5 per cent., was given and repeated in 700 c.c. dosage. This seemed to improve the circulation in the extremities. The mottled appearance on the back of the hands and dorsum of the feet disappeared. Injections of mercury into the buttock with sodium iodid by mouth were given with slight interruptions during patient's stay in the hospital.

### New York State Journal of Medicine

February, 1922, 22, No. 2

- \*Tuberculosis of Pericardium. W. W. G. MacLachlan, Pittsburgh.—p. 45.  
Infiltration and Infiltration-Block vs. Regional Anesthesia in Abdominal Work. R. E. Farr, Minneapolis.—p. 49.  
Anesthesia: Its Place in Practice of Medicine. J. J. Brettner, Syracuse, N. Y.—p. 52.  
\*Roentgenographic Study of Sella Turcica in Normal Children. M. B. Gordon and A. L. L. Bell, Brooklyn.—p. 54.  
Prevention and Treatment of Undernourishment in Childhood. W. H. Donnelly, Brooklyn.—p. 59.  
Official Relation of State Medical Society to Child Welfare Activities. L. C. Ager, Brooklyn.—p. 62.  
\*Case of Periodic Family Paralysis. M. Neustaedter, New York.—p. 65.  
Medico-Industrial Relations of New York State Workmen's Compensation Law. A. T. Lytle, Buffalo, N. Y.—p. 69.

**Tuberculosis of Pericardium.**—While the course of tuberculous pericarditis is to recovery in a certain percentage, MacLachlan states that in the greater number of cases the condition is fatal. At necropsy he has seen evidence that spontaneous healing does occur. The tuberculous form of pericarditis which produces a recognizable clinical entity is a disease with a high mortality.

**Sella Turcica in Normal Children.**—Gordon and Bell classify the sella turcica in children by means of roentgenograms into three groups according to shape: A, circular; B, oval, and C, flat and saucer shape, with modifications. Groups A and B were found in all ages while C was practically limited to the first three years. The shape of the sella was found not to have any significance except in the case of the flat Group C type. This type is always found in small heads, but it does not necessarily follow that all small heads exhibit this type. There is a marked variation for each age, both as to height and length of the sella for that particular age. The average height and length of the sella shows a comparatively rapid increase in the first two years with a gradual yet irregular increase from then on up to the age of 12. There is a tendency for the average height increase to follow the average length increase. There is apparently no relationship between the size of the head and the size of the sella based on head measurements. There is no difference in the occurrence of the three groups between the heads of boys and girls.

**Periodic Family Paralysis.**—The family history in Neustaedter's case was interesting. A paternal cousin died of cancer at 30; maternal grandmother died of diabetes; two maternal cousins are insane; three maternal uncles had periodic family paralysis, of whom one died in an attack at the age of 35, another died of pneumonia at 27, the third is living. He is 29 and did not have an attack in three years. The three uncles were not married. In two the attacks began at the age of 16 and in the third at 15. The one who died of pneumonia had the last attack about six months before his death. The patient, aged 18½, had his first attack at 14, characterized by marked weakness in all extremities, lasting half an hour. The second seizure at 15 completely paralyzed all extremities; at the third seizure, eight months later, he became paralyzed in the evening and fully recovered in the morning; in the fourth attack eight months later he arose in the morning paralyzed and did not recover until noontime. In the following one and a half years he had five more attacks at intervals of from three to six months. The last two at intervals of three weeks. All these attacks came on over night and lasted till the afternoon. The paralysis was complete involving all extremities, the muscles of the trunk and neck. They would be ushered in by a feeling of fatigue and



numb ache in the muscles of the extremities and palpitation of the heart, lasting at times a whole day. He would go to bed dizzy, sleep profoundly and rise in the morning completely or partially paralyzed in upper or lower extremities. The paralysis would grow progressively worse until all the musculature mentioned would become involved. In some of the attacks he had difficulty in deglutition. In recovering, the muscles that became affected last would improve first, the distal ends of the extremities first then the proximal parts. He invariably remains generally weak for twenty-four hours after the seizure. He vomited in all attacks, excepting in the last two, a number of times. Headache is always present and perspiration is a constant accompaniment. It cannot be elicited whether the temperature was elevated during the attacks.

### Ohio State Medical Journal, Columbus

March 1, 1922, 18, No. 3

- Acute Appendicitis. C. D. Hoy, Columbus.—p. 173.  
 \*Intussusception of Appendix: With Report of Case. P. M. Spurney and D. M. Nyquist, Cleveland.—p. 181.  
 Immunity with Reference to Tuberculosis. C. C. Kennedy, Bethel, Ohio.—p. 189.  
 Some Suggestions on Relation of Congenital Syphilis to Juvenile Delinquency. H. H. Goddard, Columbus.—p. 193.  
 Use of Forceps in Obstetrics. A. H. Bill, Cleveland.—p. 195.  
 Treatment of Burns: Report of Cases. G. R. Micklethwaite, Portsmouth, Ohio.—p. 198.  
 \*Value of Indigocarmin as Functional Kidney Test. C. M. Harpster, Toledo.—p. 200.  
 Selling Public Health in a General Health District. A. Ailes, Sidney, Ohio.—p. 206.

**Intussusception of Appendix.**—Spurney and Nyquist review the literature analyzing fifty-one cases and report one case in which they found a nonadherent appendix with base very much enlarged, thickened, firm on palpation, about which the cecum seemed to fit as a glove. The appendiceal contents were protruding into the cecum for about 1 inch. Because of evident inability to remove the appendix by usual means, it was excised by a circular incision around the base of the cecum, resection of the head of the cecum being performed.

**Indigocarmin Test of Kidney Function.**—All things considered, the indigocarmin test, with the dye properly prepared and administered intravenously, is in Harpster's opinion the most reliable and simplest of all tests of kidney function.

### Oklahoma State Medical Association Journal, Muskogee

February, 1922, 15, No. 2

- Practical Method of Selecting Donors for Blood Transfusion. G. Ellison, Norman.—p. 37.  
 Blood Transfusion: Citrate Method. F. H. Clark, El Reno, and W. H. Bailey, Oklahoma City.—p. 40.  
 Surgical Management of Two Congenital Malformations of New-Born. A. A. Will, Oklahoma City.—p. 43.  
 Congenital Deformities of Mouth and Face. C. von Wedel, Oklahoma City.—p. 46.  
 Adventures in Diagnosis. B. H. Brown, Muskogee.—p. 49.

### Public Health Journal, Toronto

February, 1922, 13, No. 2

- Health Service in Schools. E. H. Dyke, Toronto.—p. 49.  
 School Program and Sex Education. P. Sandiford, Toronto.—p. 59.  
 Venereal Problem in Large Towns and Small Cities. W. F. Roberts, New Brunswick.—p. 63.  
 Mental Defect and Social Hygiene. N. L. Burnette.—p. 69.

### Surgery, Gynecology and Obstetrics, Chicago

March, 1922, 34, No. 3

- \*Practical Importance of Thoracoscopy in Surgery of Chest. H. C. Jacobaeus, Stockholm, Sweden.—p. 289.  
 Laryngectomy. R. Woods, Dublin, Ireland.—p. 297.  
 Laryngectomy. G. W. Crile, Cleveland.—p. 305.  
 Function of Gallbladder. W. B. Harer, E. H. Hargis and V. C. Van Meter, Philadelphia.—p. 307.  
 \*Sarcoma of Long Bones. H. W. Meyerding, Rochester, Minn.—p. 321.  
 Sarcoma of Long Bones. A. P. C. Ashhurst, Philadelphia.—p. 333.  
 Registry of Cases of Bone Sarcoma. E. A. Codman, Boston.—p. 335.  
 \*Clinical Significance of Abdominal Pain in Children. J. Brenneman, Chicago.—p. 344.  
 Gross Pathology of Brachial Plexus Injuries. A. W. Adson, Rochester, Minn.—p. 351.  
 Surgical Anatomy of Trigeminal Nerve. A. B. Kanavel and L. E. Davis, Chicago.—p. 357.  
 \*Secondary Parotitis. F. S. Lynn, Baltimore.—p. 367.

- Perforated Ulcers of Duodenum. E. C. Brenner, New York.—p. 370.  
 Anomalous Right Subclavian Artery and Its Possible Clinical Significance. A. A. Goldbloom, Philadelphia.—p. 378.  
 \*Accessory Pancreas with Ulcer of Pylorus. H. Cohen, New York.—p. 384.  
 Stricture of Ureter as Explanation of Some Obscure Abdominal Conditions. T. M. Green, Wilmington, N. C.—p. 388.  
 Results in Interposition Operation for Prolapse of Uterus. H. N. Shaw, Los Angeles.—p. 394.  
 \*Inguinal Herniotomy Under Regional Anesthesia. G. Labat and W. R. Meeker, Rochester, Minn.—p. 398.  
 Individual Duodenal Roentgen-Ray Demonstration. H. W. Crouse, El Paso, Texas.—p. 404.  
 Esophagectomy. S. Bunnell, San Francisco.—p. 408.

**Thoracoscopy.**—For the diagnosis and localization of pleural and pulmonary tumors Jacobaeus considers it of great importance to make a roentgen-ray examination before as well as after the induction of pneumothorax. By making such an examination after the induction of pneumothorax valuable information is obtained, which completes the information already obtained by the roentgen-ray examination made before the induction of pneumothorax. Thoracoscopic examination gives valuable information in diagnosing and localizing pleural and pulmonary tumors, and verifies the roentgen-ray examination. If it is not possible to use a pressure difference apparatus, it might be advantageous to induce pneumothorax previous to operation in the pleural cavity. If a pressure difference apparatus be employed, then pneumothorax for the thoracoscopic examination ought to be induced as shortly before the operation as possible, in order that the inflation of the lung after the operation may not be rendered more difficult or impossible. If the lung is inflated after the operation, more favorable conditions for the course of healing are eventually obtained.

**Sarcoma of Long Bones.**—In the Mayo Clinic from September, 1907, to September, 1921, 470 cases were diagnosed sarcoma of the extremities; 168 (35.7 per cent.) of these were sarcoma of the long bones. One hundred and nine of the patients were operated on and a microscopic diagnosis was made of sarcoma of the femur, tibia, fibula, humerus, radius and ulna. Besides the 470 cases, there were 18 in which a diagnosis of giant cell tumor of the long bones was made at operation and from microscopic examination. Fifty-nine of the 168 patients were inoperable at the time of examination or they refused operation. In 85 of the 109 cases the sarcoma was in a lower extremity. It was in the femur in 49; in the tibia in 27; in the fibula in 9; in the humerus in 18; in the radius in 3; and in the ulna in 3. The left lower femur was involved in 27, the right in 22, the upper end of the left tibia in 17, and the right in 10. As to trauma causing bone tumor, Meyerding's experience leads him to believe that the single, hard, local injury is the type most often followed by sarcoma. Constant irritation causes traumatic periostitis; a more severe injury often causes a subperiosteal hematoma which may undergo ossification rather than absorption. The significant relationship between trauma and sarcoma is borne out by the localization of sarcoma in the parts most commonly exposed to trauma. The principal points to be decided before operating are malignancy, metastasis and the extent of bone involved. With early diagnosis, eradication of the tumor, care to exclude patients with metastasis, and the use of radium, roentgen ray, and Coley's toxin, prolongation of life may be looked for following operation.

**Significance of Abdominal Pain in Children.**—Pains that occur wholly or predominately in infancy or in early childhood, Brenneman says, are nearly all caused by the obstruction of a hollow peristaltic viscus. Three stand out conspicuously: (1) colic, and the pains of indigestion; (2) those due to intestinal obstruction, acute ileocolic intussusception greatly predominating; (3) and the paroxysmal pain of pyloric stenosis. Great distention and pain from an overtight anal sphincter is rarer than any of these but no less real. In older children green apple, or corn, or grape, "colic" is much more frequent than in the adult. Other forms of abdominal pain that occur relatively frequently in the child are those that accompany throat infections and pneumonia. Less frequent but no less peculiar to childhood are the referred pains from tuberculous spondylitis, from acute hip disease and from pericarditis; the pain of acute nonappendiceal peritonitis;



the multiform pains of tuberculous peritonitis; the abdominal pain that accompanies rheumatism and Henoch's purpura; the sharp paroxysmal pain that goes with a distended bladder with no casual pathology; and lastly the pains due to acutely inflamed mesenteric and retroperitoneal glands and to sarcoma of the kidney or other abdominal organ. Of worms Brenneman says that, in his experience, if a worm has ever caused an abdominal pain he has not been aware of it, though pain from that source cannot be denied. There are still other pains that manifest themselves rather differently in the child at various ages and also as compared with the adult, or perhaps rather that offer greater difficulties in diagnosis. Here only appendicitis is considered.

**Secondary Parotitis.**—Lynn reports three cases of this kind. One patient subjected to a panhysterectomy for carcinoma of the cervix developed parotitis two days after the operation. The second patient developed parotitis nine days after a right nephrectomy was done for nephrolithiasis with pyelonephritis. The third patient had an appendicitis, with diffuse peritonitis. Operation was out of the question. With ice to the abdomen, the Fowler's position, Murphy's proctoclysis and infusions of salt solution the general and abdominal conditions improved. Right sided parotitis developed on the seventh day.

**Accessory Pancreas Causes Pyloric Ulcer.**—Cohen believes that the chemical irritation of the pancreatic juice on the tissues was the cause of the ulcer in his case.

**Herniotomy with Regional Anesthesia.**—Regional anesthesia with procain-epinephrin solution is regarded by Labat and Meeke as the method of choice in inguinal herniotomy and should be used generally instead of only for patients who are unsafe subjects for general anesthesia. For inguinoscrotal or bilateral herniotomy in very obese patients, spinal procainization is easier, quicker, and as safe as regional field block. A hypodermic of morphin and scopolamin one hour before anesthesia is induced is of aid in calming nervous apprehension.

### Tennessee State Medical Ass'n Journal, Nashville

February, 1922, 14, No. 10

Diverticula and Diverticulitis of Sigmoid. D. R. Pickens, Nashville.—p. 361.

Treatment of Neuralgia of Fifth Nerve by Injection of Gasserian Ganglion. D. Eve, Nashville.—p. 364.

Ulcer of Stomach and Duodenum. W. D. Haggard, Nashville.—p. 368.

Diagnosis of Acute Abdominal Crises. H. H. Shoulders, Nashville.—p. 375.

\*Luminal in Treatment of Epilepsy; Report of Cases. J. C. Hill, Bearden, Tenn.—p. 380.

Some Needs of State Hospitals for Insane. R. E. L. Smith, Bearden.—p. 384.

\*Unusual Case of Paroxysmal Tachycardia. L. Smith, Nashville.—p. 388.

**Luminal in Epilepsy.**—Hill's experience with luminal in the treatment of seventeen cases of epilepsy was very satisfactory. Several patients have gone for a considerable length of time without having a convulsion. In only one case the drug apparently had no effect.

**Unusual Paroxysmal Tachycardia.**—Smith reports the case of a woman, about 55, who complained of repeated and often prolonged attacks of very rapid heart action which began about eight years ago. They sometimes continued for weeks. They were accompanied by dyspnea, but not by pain. They began and ended abruptly. An arterial pulse tracing showed a number of short periods of rhythmical tachycardia, interspersed by a few normal beats mixed with extra systoles. In Smith's opinion the case is unusual in that it shows such a variability in the same individual and that it must be differentiated from auricular fibrillation.

### West Virginia Medical Journal, Huntington

January, 1922, 16, No. 7

Treatment of Infections of Cervix. R. J. Wilkinson, Huntington.—p. 255.

Advantages to Be Gained by Cooperation of Physician and Pharmacist. J. C. Davis, Wheeling.

Instructions to Gonorrhea Patients. C. J. Broeman, Cincinnati.—p. 262.

Thirty Years of Obstetrics. E. F. Moore, Davis.—p. 265.

Clinical Study of Ectopic Gestation. R. H. Walker, Charleston.—p. 268.

### FOREIGN

An asterisk (\*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Glasgow Medical Journal

February, 1922, 97, No. 2

Fibroids Complicating Pregnancy, Labor and Puerperium; Illustrative Cases. G. B. Marshall.—p. 65.

\*Bacillus Coli Infection of Urinary Tract in Infants. J. Thomson.—p. 82.

Surgical Kidney. K. Dalziel.—p. 90.

Health of Munition Workers in Shell Filling Factory. J. Anderson and E. D. Anderson.—p. 98.

**Bacillus Coli Infection of Urinary Tract.**—Alkalization of the urine Thomson regards as being the best treatment in these cases. Potassium citrate is the alkaline drug generally given for this purpose. It is well usually to begin with from 60 to 100 grains in the day, but in some cases this amount may have to be increased to 120 or even 180 grains before the urine turns alkaline and the temperature falls. Occasionally the urine becomes alkaline within a day or two of the beginning of the treatment; often it takes four or five days—rarely six or seven—but never more. If diarrhea sets in during the treatment the change in the reaction of the urine is delayed. If the disease has spread to the kidneys to any serious extent, this treatment has little, if any, effect on the temperature or on the other symptoms. In cases in which there is a mixed infection (usually in older children) alkalization of the urine usually does nothing but harm; but sometimes it may, with advantage, be alternated with the use of hexamethylenamin. When in an uncomplicated case of acute colon bacillus pyelitis the urine has been rendered alkaline and kept so, the temperature always falls to normal, or nearly normal, within one or two days at most; along with this the subjective symptoms improve. The pus also disappears rapidly from the urine, though often, weeks or months later, it may be possible to obtain a culture of the organism. During the continued administration of large doses of the citrate, there is a strong tendency for the urine to turn acid again from three to seven days after it has become alkaline. Along with this return of acidity the temperature rises to a varying degree, and there may be some return of the other symptoms. If the treatment is continued steadily these slight relapses rapidly subside in a few days, and the further progress of recovery is uninterrupted.

### Journal of Tropical Medicine and Hygiene, London

Feb. 1, 1922, 25, No. 3

\*Intestinal Bilharziasis in the West Indies. S. B. Jones.—p. 25.

Antimony in Treatment of Lepers and Hydatid Disease. F. G. Cawston.—p. 27.

**Intestinal Bilharziasis in West Indies.**—Jones cites cases of intestinal bilharziasis in which he found the characteristic later spined ova of *Schistosomum mansoni*. Ova of other parasites were also present, chiefly *Ascaris lumbricoides* and *Trichuris trichiura*. About twenty-four cases in all have been seen, in each of which the diagnosis was arrived at after microscopic examination. Certain symptoms of the disease are not unlike those of hookworm infection as seen in the southern United States. Beyond directions as to prophylaxis of the water supply—boiling drinking water and exposing that used for bathing to the sunlight for a day—and treatment with emetin hydrochlorid, in a few instances, no active curative measures were undertaken. Where ascarides were present, oil of chenopodium was most effective in ridding the host of these and at the same time ameliorating the symptoms of gastric distress caused by the bilharzial parasites. Intravenous injections of tartar emetic were not attempted as the patients were not sufficiently under control.

### Lancet, London

Feb. 18, 1922, 1, No. 5138

\*Inflammatory Strictures of Rectum. H. Hartmann.—p. 307.

\*Diagnosis of Headaches and Other Nervous Manifestations of Nasal Origin. P. Watson-Williams.—p. 311.

\*Schick Test for Determination of Susceptibility to Diphtheria. T. E. Dickinson.—p. 312.

Varieties of Traumatic and Toxic Ulnar Neuritis. E. F. Buzzard.—p. 317.



\*Hereditary Perforating Ulcer of Foot. E. P. Hicks.—p. 319.

\*Epididymitis and Suprapubic Prostatectomy. H. P. W. White.—p. 321.  
Effect of Edestin on Mammary Secretion. G. A. Hartwell.—p. 323.

**Inflammatory Strictures of Rectum.**—Of the eighty-six cases of this condition seen by Hartmann syphilis existed in thirty. In ten cases pulmonary tuberculosis existed before the first symptoms of stricture. Pederasty, gonorrheal infections and leprosy also acted as etiologic factors. Chronic constipation, in Hartmann's opinion, does not have any influence in the etiology of stricture. Hartmann has treated his patients by dilatation and complete extirpation. He performs an intrasphincteric amputation very much like Whitehead's operation for hemorrhoids. This operation was performed in thirty-four cases with thirty-two cures. Twice he performed an abdominoperineal excision on account of a stricture reaching the inferior half of the pelvic colon; results, one cure and one death. In cases beyond the reach of local treatment, in which extensive suppuration is developed around the rectum, and the condition is grave, Hartmann performs iliac colostomy.

**Headaches of Nasal Origin.**—Among the nervous symptoms of nasal origin Watson-Williams asserts that headache is the dominant symptom, and now very generally recognized as being sometimes attributable to the nose, sometimes to ocular defects, or to the teeth. The existence of a persistent or recurrent purulent catarrh may be obvious or elicited by inquiry, but the nonpurulent discharge is apt to be ignored by the patient, and must be sought for. The neurasthenic symptoms are usually worse in the morning on waking, or for the first hour or two after rising; they are often periodic, better in warm dry weather, worse in cold damp weather, always aggravated by intercurrent colds. But the history of the case may reveal many facts which point to a source of recurrent infection; headache or heaviness, recurring sore throats, muscular rheumatism, rheumatoid arthritis, gastro-intestinal catarrh and appendicitis are so frequently associated with a chronic sinus infection that their interdependence is sometimes hardly open to doubt. A sinus infection may be of some years' standing, and a constant source of ill health, without seriously arresting the patient's notice. Often the existence of a latent nasal catarrh can only be determined by direct inspection of the nasal passages anteriorly and posteriorly, and, perhaps, only by passing a fine cannula into the sinuses, and washing out or sucking the contents back into a sterile syringe, and submitting them to bacteriologic examination and culture.

**Value of Schick Test.**—Dickinson's experience with this test in 1,200 cases has shown that it is safe. In not one case did sepsis develop. Delayed reactions occurred in 154 cases. They occurred in normal cases, and in every disease except puerperal fever, and with every batch of toxin; 147 reactions were delayed one day, six delayed four days, and in one case five days elapsed before a positive reaction appeared. Abnormal pigmentation occurred in ten cases, a very marked purplish red or dark plum color developed. Massive scaling occurred in two cases of scarlet fever. Vesiculation occurred in three cases of scarlet fever. Out of 222 pseudoreactions, fifteen showed definite scaling. Among 650 scarlet fever cases, the positive percentage curve closely followed that for the total combined cases, but the total percentage was slightly higher, 47.38 as against 45.09. These cases, Dickinson believes, warrant the suggestion that scarlet fever tends, very slightly, to increase susceptibility to diphtheria. His experience with toxic cases agrees with that of Schick that toxic individuals tend to give a negative reaction.

**Hereditary Perforating Ulcer of Foot.**—Hicks cites a case of perforating ulcer of the foot in which there was found a hereditary element. Among thirty-four members of the patient's family, spread over four generations, there were ten who suffered from the disease. The cardinal symptoms were perforating ulcers of the feet, shooting pains about the body and deafness. The condition was very nearly similar in all the patients, so that it is easy to describe a common type of the disease. The affected members of the first and second generations are dead, and there are no medical records of the last years of their lives; those of the third generation

have not yet progressed far, so that the picture of the later stages is not very definite. None of the fourth generation is affected, but they have not yet reached the age at which the disease appears.

**Epididymitis and Suprapubic Prostatectomy.**—Investigations made by White show that inflammatory changes in the epididymis as a result of prostatectomy are the rule. Of his fifty cases 82 per cent. gave evidence of it. The degree of inflammatory process varied from the mildest form which could be detected by palpation and caused no symptoms, to the purulent variety of epididymo-orchitis accompanied by local and constitutional disturbance.

### Quarterly Journal of Medicine, Oxford

January, 1922, 15, No. 58

\*Pneumonias and Types of Pneumococci. A. Malloch.—p. 103.

\*Streptococcal Infections of Heart. C. F. Coombs.—p. 114.

Twenty Cases of Lethargic Encephalitis: Pathologic Findings in Four Cases. W. E. Hume, F. J. Natrass and A. F. B. Shaw.—p. 131.

\*Dropping (Gastroptosis) of Stomach: Study Based on Series of 150 Cases. P. C. Conran.—p. 144.

\*Etiology of Rickets, Early and Late. H. S. Hutchison and S. J. Shah.—p. 167.

**Types of Pneumococci in Pneumonia.**—In the sixty-five cases of lobar pneumonia studied by Malloch the proportions of the different types of pneumococci were similar to those noted in America, except that much fewer of Type III were found, and more cases were due to typical Type II subgroups. At least one third of all the lobar cases were due to Type I. The death rates in all but Type II cases were lower than in America. More complications were caused by Type I than by any other group. One case of endocarditis due to Type IV is described. The three "fixed" types were isolated from the sputum of cases of bronchopneumonia, but more often a Type IV pneumococcus was found—the commonest throat pneumococcus. Pfeiffer's bacillus was found much more often in association with Type IV, in both lobar and especially in bronchopneumonic cases, than with the other types. One of the cases in which a Type III pneumococcus was also found—a case of bronchiolitis and bronchopneumonia—was probably caused by Pfeiffer's bacillus. Type I was isolated from cases of pneumococcal peritonitis; twice in fatal cases in children, with the generalized septicemic form; and twice from adults (with no septicemia) who recovered.

**Streptococcal Infections of Heart.**—Coombs summarizes briefly histologic investigations made to throw light on the etiology of rheumatic carditis. Thirty-seven hearts from patients with rheumatic infections have been examined. In twenty-six instances, the patients were children or adolescents with manifestations of active infection. In eighteen of these cases the myocardium was found to show submiliary nodules. Eleven hearts were from patients dying of the mechanical effects of rheumatic heart affection. Histologic studies confirm the view that cardiac rheumatism is a result of a bacterial infection. Reasons are given for regarding this kind of carditis as resulting from invasion of the heart from time to time, through its coronary blood supply, by streptococci. Streptococci were found either during life, or after death, or both in twenty cases of endocardial ulceration. Streptococcal ulceration of the endocardium is characterized by: (a) disproportionately severe lesions of the endocardium; (b) the embolic nature of the myocardial lesions. The presumption is that (b) is secondary to (a). The endocardium is invaded sometimes from its surface, sometimes through its own coronary blood supply. This invasion, predisposed to by local and general defects of resistance, is due in some cases to obvious sources of infection, such as puerperal sepsis. When the source is not obvious, there is reason to suspect invasion of the system by the common streptococci of the alimentary or respiratory tract. The lesions of the human heart which follow its invasion by streptococci are described.

**Gastroptosis Cause of Digestive Trouble.**—Approximately one fifth of the patients complaining of digestive trouble who were examined by Conran were the subjects of severe gastroptosis. The condition was rather more than three times as common in the women as in the men. A greater number of persons with severe gastroptosis, both men and women, com-



plained of digestive symptoms in later life than in youth, but the condition was in a few cases observed in children and adolescents. A greater number of both nulliparas and of multiparas with severe gastropsis complained of digestive symptoms in later life than when young, especially in the case of the multiparas. A family history of digestive trouble was elicited in one third, and of neurosis, cancer, and tuberculosis each in one tenth, of the cases of severe gastropsis. In more than one half of the cases the abdominal symptoms were said to have dated from either an acute fever, an attack of appendicitis, an abdominal operation, a confinement, or a period of mental and physical strain. In the case of women, and possibly men also, excessive exercise may both bring on symptoms and exaggerate the ptosis. The persons with severe gastropsis were, on an average, emaciated to the maximum degree considered compatible with good health.

**Etiology of Rickets.**—Hutchison and Shah assert that the results of their investigation show that the most important etiologic factor in the production of rickets is lack of fresh air, sunlight, and exercise. Diet did not have any effect in the production of rickets in the subjects studied. Therefore, it is concluded that a deficiency of fat soluble vitamin cannot be the principal cause of rickets.

### Archives des Maladies du Cœur, etc., Paris

December, 1921, 14, No. 12

\*The Auriculoventricular Bundle. D. Daniélopou and V. Danulescu.—p. 529.

\*Auscultation Sphygmomanometry. J. Barbier.—p. 541.

**Latent Lesions in Auriculoventricular Bundle.**—A large number of electrocardiograms are given to illustrate different means by which minute latent lesions in the ramifications of this bundle can be rendered manifest when otherwise they do not modify the electrocardiogram. The effect of pressure on the eyeball, after injection of atropin or epinephrin, reveals these minute lesions most instructively.

**Auscultation Sphygmomanometry.**—Barbier discusses the pathogenesis of the zone of murmurs in the auscultation curve.

### Archives de Médecine et de Pharm. Militaires, Paris

May, 1921, 74, No. 5

\*Systematized Heliotherapy. Miramond de Laroquette.—p. 451.

Traumatic Shock and Hemorrhage. H. Billet.—p. 473.

Pott's Disease in Adults. Courboulès.—p. 487.

Diaphragmatic Hernia of Stomach from War Wound. Josse.—p. 552.

**Systematized Heliotherapy.**—De Laroquette gives an illustrated description of the arrangements for heliotherapy at a hospital in Algiers. Amplifying mirrors are used to intensify the sunlight treatment and graduate it at will. A set of from one to fifty of these separately adjustable reflecting mirrors throws the rays on the desired region. This increases by 50 per cent., or more, the concentration of the rays. Veils and screens aid in the graduation. He prefers to use small flat mirrors, set in a square frame, rather than concave reflectors. He gages the dose by the action on a scrap of sensitized paper, and by three thermometers: one is black; one is shiny to reflect the rays, and the third is sheltered from the rays. For a stimulating effect only, the dose is 30 to 45 C. by the black thermometer; the optimum: 38 to 40 C. By these means the treatment is systematic and free from harm, and the results, he says, can be counted on.

### Bulletin de l'Académie de Médecine, Paris

Jan. 31, 1922, 87, No. 5

Discussion on Hygiene of Preparatory Schools.—p. 119. Cont'n.  
Silica, Calcium and Magnesium in Cancer Tissue. A. Robin.—p. 128.  
Bronchopulmonary Lesions in Influenza. Letulle and Bezançon.—p. 132.  
Idem in Present Epidemic of Influenza. Bezançon et al.—p. 136.

Feb. 7, 1922, 87, No. 6

Influenza in 1918-1919. P. Menetrier.—p. 143.

\*Electric Accidents with House Current. A. Zimmern.—p. 155. Id.  
J. P. Langlois.—p. 158. Id. V. Balthazard.—p. 160.

Prophylaxis of Malaria in Corsica. E. and E. Sergent.—p. 163

Emotivity and Irritability in Aviators. G. Ferry.—p. 168.

Stain Test for Liver Functioning. J. Hatiegan.—p. 170.

Cerebrospinal Reactions in Neurosyphilis. Cestan and Riser.—p. 172.

Subcutaneous Injection of Oxygen in Influenza. R. Bayeux.—p. 176.

**Accidents from Domestic Electric Currents.**—Zimmern urges that notices should be posted by the electric company in bath rooms and kitchens warning of the dangers of taking hold at the same time of an electric appliance and a water faucet, or taking hold of an electric appliance when in a bath. He cites a recent fatality from this cause, and Langlois adds others to the list, including one woman in a bathtub electrocuted as she took hold of the chain of the electric bell, the current only 110 volts. Four such fatalities are on record from a continuous current of from 95 to 120 volts. Renon reported a similar case, a woman in the bath killed as she pulled the chain of the electric bell, and he relates that he once gave himself a sharp shock by this same means. Balthazard reported the recent case of a boiler maker who climbed into a boiler, holding an electric light in his hand, the current 135 volts. Necropsy showed that death was the result of tetanization of the respiratory muscles in this case, and not of fibrillation of the heart.

### Bulletins de la Société Médicale des Hôpitaux, Paris

Feb. 3, 1922, 46, No. 4

\*Renal Diabetes. M. Labbé.—p. 198.

\*Calcium Salts in Nephritis. L. Blum, Aubel and Hausknecht.—p. 206.

\*Calcium Chlorid in Cardiac Edema. L. Blum and H. Schwab.—p. 214.

\*Syphilitic Jaundice. Ardin-Delteil, Derrien and Azoulay.—p. 221.

\*Spirochetal Jaundice. M. Villaret, Bénard and P. Blum.—p. 225.

\*Serotherapy of Pneumonia in the Elderly. B. Weill-Hallé, R. Weissmann-Netter and P. Aris.—p. 227.

Subcutaneous Injection of Arsphenamin Exposes to Same Accidents as the Intravenous. G. Milian.—p. 232.

\*Syphilitic Asthma. A. Sézary and J. Alibert.—p. 242.

Serotherapy in Pneumonia. Courcoux and Deglaire.—p. 248.

**Renal Diabetes.**—The glycosuria was noted at the age of 6, and is still pronounced in the girl, now 16; there is up to 44 gm. of sugar in the urine daily. This glycosuria is scarcely influenced by the food, but is orthostatic to a slight extent, and there is orthostatic albuminuria, but the sugar content of the blood is normal, and the general health is constantly good. The methylene blue test shows slight impairment of kidney permeability. Labbé cites some authors who have noted a familial trait in renal diabetes; in Salomon's ten cases, five were in two families. No treatment is known, but he suggests that intravenous injections of calcium chlorid might be tried, as this seems to have an antagonistic action to sodium chlorid in respect to the permeability of the kidneys to glucose.

**Diuretic Action of Calcium Salts in Nephritis with Edema.**—Notwithstanding the fine results realized with calcium chlorid in war nephritis, there seems to be a general disinclination to give chlorids in kidney disease. But Blum and his co-workers declare that calcium chlorid is the most effectual and the most harmless of all diuretics in the edema of Bright's disease. In the instructive cases described, they gave it by the mouth, up to 11 gm. a day. They reiterate that given with a salt-poor diet, it forms the best treatment for nephritis with edema.

**Warning Against Calcium Chlorid in Edema from Heart Disease.**—Blum and Schwab describe some cases to illustrate that the cardiac factor in edema is usually not influenced by calcium chlorid, while the drug often has a decidedly deleterious action in heart disease when given for some time and it has failed to promote diuresis.

**Syphilitic Jaundice in Early Second Phase.**—Bile pigment was prominent in the urine but no bile salts were to be found in it in the case described. The test ingestion of a glass of milk showed a positive digestive hemoclasia, thus testifying to insufficiency on the part of the liver. Under mercurial treatment, repose, restriction to a milk diet and hexamethylenamin, the jaundice disappeared in two weeks. It was evidently not a hemolytic jaundice nor jaundice from obstruction while the simultaneous appearance of the jaundice and roseolar syphilids, and their simultaneous subsidence testified to their syphilitic origin. No treatment had been taken for the syphilis, no drugs of any kind, previous to the development of the jaundice.

**Spirochetal Jaundice.**—The man of 53 had complained for a month of malaise and vague abdominal pains. The first symptom had been a profuse epistaxis, but the fever and



jaundice did not develop until a month later. The case was further distinguished by myoclonic spasms. The man was left exceptionally weak after recovery from the disease.

**Serotherapy of Pneumonia in the Aged.**—In the eight cases of pneumonia in an asylum for the aged, all recovered but two although several were 78, 80 or 88 years old, and one was both diabetic and a hard drinker. No attempt was made to classify the pneumococcus, 20 c.c. of a polyvalent antiserum being injected subcutaneously, daily or every second day. There was no reaction in any instance, with one exception in which there was a brief rise in temperature and slight urticaria. In one case complicating pleurisy later was given intrapleural injections.

**Syphilitic Asthma.**—The rebellious asthma developed in a man of 35, and vagotonia and eosinophilia were pronounced when examined after five years of the asthma. Emphysema and enlarged tracheobronchial glands and extensive sclerosis in the lungs finally suggested a possible syphilitic origin. This was confirmed by serologic tests and by the melting away of the roentgen shadows in the lungs, in less than a month, under arsenical treatment, and there has been no return of the asthma during the three months to date, and the Wassermann reaction has veered to negative.

### Gynécologie et Obstétrique, Paris

December, 1921, 4, No. 6

\*Biology of the Fetus. L. Bylicki.—p. 541.

\*Rupture of the Uterus. H. Fleurent.—p. 544.

\*Arterial Circulation in Uterine Fibromas. Bardon.—p. 553.

\*Rupture of Perifibromatous Varices. E. Weber.—p. 560.

\*Artificial Pneumoperitoneum in Gynecology. R. Coliez.—p. 562.

**Biology of the Fetus.**—Bylicki argues that the fetus swallows amniotic fluid reaching the throat through its nose. He also argues that when the fetal blood for any reason is not getting oxygenated properly, the accumulating carbon dioxide acts on the respiratory center and starts the respiratory muscles to action. The result is that fluid is aspirated into the air passages, but the movements of the respiratory muscles do not end here. The aspirated fluid is expelled by the expiration movements of the respiratory muscles which follow. This explains why we never find fluid pouring from the mouth and nose when the new-born child is held head downward. Daily experience teaches the exceptional rarity of this.

**Rupture of the Uterus.**—In two of Fleurent's five cases the rupture occurred from a contusion or spontaneous tear, at or near term, and the women recovered after the laparotomy. The uterus was sutured in the contusion case and a normal pregnancy followed a year later. In two other cases the women were practically moribund, unable to stand the indicated hysterectomy, which the family also rejected. In the fifth case the accoucheur had torn a loop of intestine from its mesentery and drawn it out through the vagina. Fleurent advocates a laparotomy at once as the only treatment for partial or complete rupture, suturing the uterus or removing it as required.

**Rupture of Varices Around a Fibroma.**—Weber had compiled nineteen cases in 1916 and now adds four more to the list. The acute flooding of the peritoneum with blood suggests a tubal abortion. In one case a second vein ruptured after the first had become plugged by a clot.

**Artificial Pneumoperitoneum in Gynecology.**—Coliez gives a number of sketches showing the displacement of the internal genitals in the knee-chest and other positions, with the pneumoperitoneum, especially in the ventral, lateral and dorsal Trendelenburg positions, the tube under the table.

### Journal de Médecine de Bordeaux

Jan. 25, 1922, 94, No. 2

\*A Case of Gastric Tetany. E. Cassaet and R. C. Augistrou.—p. 39.

\*Polycythemia Syndromes. Tamalet.—p. 43.

\*Potassium Iodid in Pulmonary Tuberculosis. J. Filliol.—p. 46.

\*Luxation of Head of Ulna. R. Villar.—p. 47.

\*Serotherapy in Erysipelas in Infants. Boissier-Lacroix.—p. 48.

\*The Guelpa Treatment of Gout. J. Vergely.—p. 50.

**A Case of Gastric Tetany.**—In Cassaet and Augistrou's case the woman of 47 had complained for two years of rather

severe gastric pains, when intense, intermittent tetany developed, and she died in a few weeks. Necropsy revealed a double epithelioma of the ovary, a pyloric tumor, and several neoplastic nodules of various sizes in or near the liver. Tetany is sometimes regarded as a final symptom, often as very grave, but in any case it obscures the prognosis. Mortality is 69.5 per cent. Tetany being often linked with an old pyloric stenosis, gastro-enterostomy must be attempted as soon as the general condition of the patient permits surgical intervention. Considerable relief followed the gastro-enterostomy in this case; the tetany did not recur after it.

**Polycythemia Syndromes.**—Tamalet describes the case of a man of 33 with supposed asystolia who was given numerous scarified cupping-glass treatments on the thorax. The progressive improvement noted in the polycythemia did not persist. The syndrome presented by the patient was mistaken for asystolia on account of the chronic pulmonary symptoms, accompanied by cyanosis, dyspnea and enlargement of the liver. Arterial pressure was normal and this should have eliminated at once the hypothesis of asystolia.

**Luxation of the Head of the Ulna.**—In Villar's two cases, one in a man of 24 while cranking his motor truck and the other in a man of 40 after a fall of 15 meters, the dislocation of the head of the ulna occurred with fracture of the lower third of the shaft of the radius.

**Serotherapy in Erysipelas in Infants.**—Boissier-Lacroix describes three cases of erysipelas in infants cured by local applications of antistreptococcic serum.

### Nourrisson, Paris

January, 1922, 10, No. 1

\*Habitual Vomiting in Infants. A. B. Marfan and H. Lemaire.—p. 1.

\*Desquamating Dermatoses in Infants. G. L. Hallez.—p. 6.

\*Artificially Fed Infants. G. Salvetti and S. Segagni.—p. 28.

\*Paratyphoid in Infants. G. Blechmann.—p. 38.

\*Diphtheria in the New-Born. G. Blechmann and M. Chevalley.—p. 44.

\*Typhoid in Infants. G. Salés and P. Vallery-Radot.—p. 51.

**Habitual Vomiting of Infants.**—Marfan and Lemaire refer to the habitual vomiting which begins in from a few days to three months after birth, the infants vomiting after each feeding of breast milk or other food. After exclusion of all other causes, they had a group of fifty-seven cases, and in this group syphilis was certain in 33 per cent. and probable in the others to a total of 68 per cent. This is the more remarkable as the average of syphilitic infants in the whole service does not surpass 35 per cent. After failure of ordinary treatment, they gave treatment for syphilis, and the children improved at once, and the cure was complete in a month in 63 per cent. of the cases.

**Desquamating Dermatoses in Infants.**—Hallez remarks that treatment has to rely more on hygiene than on drugs; baths and salves are usually irritating. For internal treatment he advises very cautious epinephrin or thyroid treatment, in small doses, the latter especially when there is intense seborrhea.

**Progress of Artificially Fed Infants.**—Salvetti and Segagni compared the weight, month by month, of 127 infants of 3 months and over, classifying the breast fed, the bottle fed and the mixed fed. The difference in weight was so slight between these groups that the inferiority of bottle feeding is not demonstrated by this material.

**Paratyphoid in Infants.**—In Blechmann's two cases, intense diarrhea was the predominant symptom at first. Then came meningitic symptoms, compelling lumbar puncture, the ninth or tenth day. The infants recovered after a twenty-two or twenty-four day course. The fever curve was like that in adults. Agglutination tests were positive with paratyphoid B bacilli and these alone.

**Diphtheria in New-Born Infant.**—The Schick reaction had been negative in the infant but twelve days later it developed diphtheria with multiple localizations, two days after another infant with what proved to be diphtheria had been kept in a cubicle at the end of the ward for a day. Review of the literature shows the rarity of diphtheria in infants, and that the pseudomembranous form of the disease does not seem to be observed before the age of 7 months. The assumed



immunity of young infants is more likely to be due to their relative isolation than to a transient congenital immunity.

**Typhoid in Infants.**—In the four cases described, one terminated fatally, and this is the usual outcome in infants less than a year old. The clinical picture is always vague and incomplete, so the diagnosis at first is merely a suspicion from the stupor, the dry red tongue, the continuous fever, and the diarrhea persisting even on restriction to water.

### Paris Médical, Paris

Feb. 4, 1922, 12, No. 5

- \*Indications for Treatment of Cancer. Rubens-Duval.—p. 85.
- Physical Basis of Deep Roentgen Therapy. R. Ledoux-Lebard.—p. 90.
- Measurement of Roentgen Rays. I. Solomon.—p. 96.
- \*Technic for Radiotherapy of Cancer. C. Regaud.—p. 102.
- \*Radium in Dermatology. J. Barcat.—p. 106.
- Radium Treatment of Cancer of Lip. Dubois-Roquebert.—p. 110.
- Dosage of Roentgen Rays. M. de Laroquette.—p. 113.

**Indications with Operable Cancers.**—Duval's personal impression is that deep roentgen exposures offer the best chances for treatment of cancer of the larynx, and he is inclined to believe the same of cancer of the esophagus. He approves of the practice of roentgen exposures preliminary to excision of a scrap of the tumor for examination or partial removal of the tumor. But the roentgen exposures should be given with a technic to spare the skin as much as possible. The surgeon in operating afterward has to refrain from any mechanical or chemical irritation of the skin, and the suturing has to be done with special care in several tiers, and the threads left undisturbed for a comparatively long time. Surgical ablation of a tumor elsewhere is preferable if it is peculiarly susceptible to the rays, as this spares the organism the resorption of large amounts of cell debris. On the other hand, if the tumor is peculiarly resistant to the rays, the effect of radiotherapy is liable to be inadequate. This applies particularly to malignant disease in muscle and fascia. Cancer of bone and joint may persist apparently unmodified after roentgen-ray treatment, when in reality the malignant features of the tumor have been completely exterminated although the bone, cartilage and fibrous tissue forming the tumor have not been resorbed.

**Radiotherapy of Cancers.**—Regaud warns of dangers to be avoided, especially the wrong way of fractioning and spacing and repeating the doses. He has found that the susceptibility of the cancer to the rays never increases but always grows less and less pronounced, as if the cancer vaccinated itself as time passed. Treatment should aim to strike hard and accomplish the result at one blow or with early repeated blows. On the other hand, the intensity of the reaction increases with the repetition of the exposures, until finally a radionecrosis becomes superposed on the previous clinical picture. The dose must always be the one that will act on the most resistant of the cells.

**Radium in Dermatology.**—Barcat concludes his long list of nonmalignant skin affections amenable to curietherapy by saying that the roentgen rays accomplish about the same in most of the dermatoses, but angiomas, especially flat ones, usually respond better to radium, as also tuberculous lupus. The various modes in which radium can be applied offer also a more extensive choice.

### Presse Médicale, Paris

Feb. 1, 1922, 30, No. 9

- Indications with Cancer of Cervix. Proust and Mallet.—p. 89.
- \*Lead Poisoning in Making Batteries. F. Heim, A. Agasse-Lafont and A. Feil.—p. 92.
- \*Asthma and Hemoclasia. J. Galup.—p. 93.

**Occupational Lead Poisoning.**—This article is the report of a committee which has been investigating lead poisoning among ninety-six persons employed in making storage batteries. Basophile granulation in the erythrocytes and lead in the urine are the most reliable signs of even incipient lead poisoning.

**The Digestive Hemoclasia in Asthma.**—Galup found the *crise hémoclasique* after drinking a glass of milk, fasting, in 77 per cent. of 114 patients with asthma. He concludes from this testimony that asthma in the majority of cases must be

regarded as a manifestation of insufficiency of the liver in its proteopexic function, that is, in its normal modification of the proteins brought to it by the portal vein. The vegetative nervous system gets out of balance in consequence, and then the attack of asthma occurs when this insufficiency is aggravated from any cause, or the amount of proteins is exceptionally large.

Feb. 4, 1922, 30, No. 10

- \*Hospital Training in Preliminary Instruction. E. Sergent.—p. 101.

**Hospital Training.**—This is the inaugural lecture of the newly founded course of medical-clinical propedeutics. Sergent hopes to apply the phonograph to record auscultation and percussion findings so that students can be trained in them by a stethoscope telephone without fatiguing the sick.

Feb. 8, 1922, 30, No. 11

- \*Cancer of Uterine Cervix. R. and O. Monod.—p. 113.
- \*Acquired Immunity to Chronic Disease. H. Dufour.—p. 115.

**Treatment of Uterine Cancer.**—A case is described in which cancer of the cervix was given thorough radium puncture treatment for about two months, and then the uterus was removed through the vagina. The patient was a woman of 28, and the treatment had been begun two months after the fetid discharge and pain in the pelvis had first attracted attention. The interval was likewise two months in a second case, in a woman of 46. Abdominal panhysterectomy, with resection of part of the vagina, was done in this case. Scraps taken from the uterus during the radium treatment and later failed to reveal any trace of the malignant disease at last. This inversion of the usual operation plus radiotherapy technic has always seemed to reduce the tendency to recurrence and also to reduce the risks of the operation. The sclerous transformation of the tissues under the radium helps to prevent the scattering of cancer cells by the instruments. By the healing over of the ulcerating surface of the cancer under the radium treatment, the secondary infection is conquered, and there is no dread of septic complications, and no need for drainage. The loss of time is trifling; only three weeks in these cases after the close of the radium treatment. From both the clinical and the microscopic standpoint the cure has been complete in the ten and six months to date, as also in the cases reported by Hartmann in 1919, in Fabre's six cases, and in Lascaux' six. The radium treatment alone may be enough, but by following with hysterectomy we not only make assurance doubly sure but we are compiling data of the most instructive character in regard to the effect of radium treatment.

**Acquired Immunity to Chronic Disease.**—Dufour used a 2 cm. segment of rabbit intestine as a sac to hold paratyphoid bacilli, killed by heat, this sac being buried in the peritoneum of another rabbit. The results of these and other experiments with vaccines have demonstrated, he says, that a vaccination which protects the animal against an acute infection certainly lethal otherwise, does not protect against subacute and slow forms of the same infection against which it had seemed to be vaccinated. A chronic infectious process may develop, but this may be arrested by a supervaccination. He declares that syphilis, typhoid and probably also tuberculosis all pass through this same experience. The acute attack confers immunity against further acute attacks of the same infection, but the infection persists, occult or latent, and, in the course of the chronic changes in the tissues for which the chronic infection is responsible, an intensive vaccine may rout out the infection and cure it completely. The future will reveal the technic for this hypervaccination, he says. Possibly as the acute infection is subsiding might be the preferable moment for it, especially in scarlet fever and typhoid, to ward off complications, and in acute febrile rheumatism to ward off recurrence.

### Progrès Médical, Paris

Dec. 17, 1921, 36, No. 51

- The Urine with Gastric Ulcer. E. Palier.—p. 587.
- Applications of Radium. Delbet.—p. 588.

Dec. 24, 1921, 36, No. 52

- Painful Crises in Cancer of Esophagus. M. Loeper.—p. 599.
- The Pathology of Instincts. Laiguel-Lavastine.—p. 603.



Dec. 31, 1921, **36**, No. 53

\*Cyst on Nerve Root. L. Lortat-Jacob.—p. 611.

**Cyst on Lumbar Nerve Root.**—The cyst had induced sciatica, reflex glycosuria and various sympathetic disturbances in the man with pulmonary tuberculosis.

**Revue Médicale de la Suisse Romande, Geneva**January, 1922, **42**, No. 1

\*Prevalence of Goiter in Jura District. F. M. Messerli.—p. 1.

\*Development of Goiter in Children. Id.—p. 12.

Blood Platelet Extract in Prevention and Treatment of Hemorrhage. C. A. Perret.—p. 15.

\*Arsphenamin Eruption. J. Golay.—p. 34.

Abscess and Phlegmon in Larynx. G. Frey.—p. 40.

Fracture of Base of Fifth Metatarsal Bone. Guillermin.—p. 45.

Prophylaxis of Diphtheria. L. Exchaquet.—p. 48.

**Endemic Goiter.**—Messerli comments on the great prevalence of goiter in the families of a certain region while an adjoining region—where the people drink exclusively boiled cistern water—is comparatively free from it. The thyroid shows the tendency to goiter even before the children enter school.

**Arsphenamin Eruptions.**—The man of 50, a tabetic, developed a severe generalized erythrodermia which lasted for six weeks after a course of arsphenamin treatment, to a total of 2.4 gm. between April 12 and June 4. Golay theorizes that this was the result of toxic action in the blood-producing organs. Resumption of arsenical treatment during the following year brought back the eruption on three separate occasions, with very small doses. The onset in these later recurrences was more in the nature of an anaphylactic phenomenon, as if the blood-producing apparatus had been sensitized by the first, the toxic attack. The eruption lasted for six and four weeks and for six days. During the first attack the eosinophils had numbered from 19 to 32.5 per cent.

**Archivio per le Scienze Mediche, Turin**1921, **44**, No. 3-4

\*Mechanism of Anaphylaxis. G. Pistocchi.—p. 91.

\*Sclerosis of Pulmonary Artery. G. Mattiolo.—p. 124.

\*Physiopathology of Blood Pressure. A. Marrassini.—p. 143.

\*Fate of Tendon Grafts. A. Busacca.—p. 157.

\*Influence of Thymus on Spleen. G. Baggio.—p. 177.

Pneumococcus Infections in 1920. M. Strumia.—p. 188.

\*Virus of Epidemic Encephalitis. P. Bastai.—p. 212.

**Influence of Spleen, Kidneys and Thyroid on the Production of the Anaphylactic Attack.**—In Pistocchi's research on guinea-pigs he was unable to detect any modification of the tendency to anaphylaxis after splenectomy or nephrectomy, but removal of the thyroid had a pronounced effect in reducing the susceptibility to anaphylaxis-producing toxins. This was evident even when the parathyroids were removed with the thyroid.

**Primary Sclerosis of the Pulmonary Artery.**—Mattiolo adds one more to the nineteen cases of this kind he has found on record. The subjects were usually between 20 and 40. The correct diagnosis had not been made in any instance during life, the symptoms being merely those of failing compensation, except for the extreme cyanosis.

**Saline Infusion After Venesection.**—The research reported confirms that it is impossible to replace the blood after moderate venesections with 0.7 per cent. sodium chlorid solution. The greater part of the latter soon passes out of the blood stream, and the pressure drops anew.

**Fate of Tendon Implants.**—Busacca comments on the advantages of using a tendon graft that has had its protein hardened by being kept for a time in alcohol or formaldehyd. This retards the autolysis to which fresh tissue succumbs, while the fibers in the graft stimulate and guide the regenerating elements that in time replace the graft. His photomicrograms confirm the perfect results in his dogs and rabbits.

**Influence of the Thymus on the Spleen.**—In Baggio's thirty-two thymectomized rabbits the spleen was found abnormally small later in 78 per cent. of the animals. Over 62 per cent. of the animals were unusually small, and over 82 per cent. weighed less than the controls. Other findings, with these,

suggest the possibility that the lack of the thymus entails hypotonia of the vagus.

**Etiology of Epidemic Encephalitis.**—Bastai reports further research on the filtrable micrococci-form virus which he has isolated from cases of epidemic encephalitis.

**Pediatria, Naples**Feb. 1, 1922, **30**, No. 3

\*Is Rachitis a Deficiency Disease? O. Cozzolino.—p. 97.

\*Arsphenamin for Syphilis in Young Children. R. Spanò.—p. 115.

\*Malta Fever plus Typhoid. V. Tripputi.—p. 129.

**Rachitis as a Deficiency Disease.**—Cozzolino's review of recent literature and his own experience testifies against the assumption that rachitis is due to a lack of fat soluble vitamin. Cod liver oil in rachitis is undoubtedly useful, but it does not display the almost miraculous effect of the vitamins in infantile scurvy. Another of his arguments is his success in treating rachitis with phosphorus and calcium, without any cod liver oil.

**Arsphenamin Treatment of Inherited Syphilis.**—In three of Spanò's forty-two cases in young children, the syphilis had been acquired at the age of 4, 7 or 9. In the others it was congenital, and he injected the neo-arsphenamin by the vein in all. He never had any mishaps, but the Herxheimer reaction was always pronounced in the skin lesions.

**Malta Fever Plus Typhoid.**—The boy of 4 presented typical Malta fever for a week and then typhoid became superposed. Typhoid bacilli could be cultivated from the blood and the micrococcus of Malta fever from the urine. A vaccine for each was used and recovery was soon complete.

**Policlinico, Rome**Jan. 23, 1922, **29**, No. 4

Malaria Campaign in Istria in 1920. M. Gioseffi.—p. 113.

Anomaly in Gubernaculum Testis. Antongiovanni.—p. 119.

Colloidal Silver in Treatment of Smallpox. Brancia.—p. 121.

\*The Parkinsonian Syndrome. G. Dragotti.—p. 122.

**Parkinsonism.**—Dragotti's review of recent publications on the parkinsonian symptoms that have developed after epidemic encephalitis, shows nothing promising in the way of treatment. Organotherapy, nerve stretching and radicotomy seem absolutely futile, but palliative relief has been realized with scopolamin, atropin or eserin in some cases. Transient benefit has also followed certain physical measures, such as static and high frequency electric currents. Long hot baths before retiring may also have a sedative action, checking the tremor and stiffness for a few hours, and combating insomnia. Exercising the joints and massaging the muscles may aid in warding off contracture. Rigidity of the muscles is the main disturbance; the tremor may be slight and fleeting. The case histories recorded to date show various outcomes, the course being stationary, progressive or a complete cure in different cases.

Jan. 30, 1922, **29**, No. 5

\*The Flakes in Serologic Tests. L. Cacioppo.—p. 149.

\*Hypertonic Solution in Treatment of Cold Abscess. I. Ott.—p. 153.

\*Rare Complication of Scarlet Fever. Medi.—p. 155.

\*Alcohol Plus Acetic Acid for Surgical Use. L. De Gaetano.—p. 156.

Present Status of Abortive Treatment of Syphilis. Levi.—p. 157.

**Serologic Diagnosis of Syphilis.**—Cacioppo compared the Sachs-Georgi and the Meinicke tests with the Wassermann test, and states that the flakes formed have in themselves no action on the fixation of complement. The flocculation may be as intense with normal serum as with syphilitic serum, but there is no fixation of complement except with the latter.

**Hypertonic Saline in Treatment of Cold Abscesses.**—Ott used a solution of 5 gm. of sodium chlorid and 0.5 gm. of sodium citrate in 100 gm. of distilled water, in thirty cases of cold abscess, rinsing out the abscess with it and leaving a quantity of the fluid in the abscess. He repeats the procedure every four or five days. The secretions are more like plain water each time, and the healing cavity grows progressively smaller. The cure is complete in from twenty to sixty days, as a rule.

**Epididymitis in Scarlet Fever.**—Medi had to incise the scrotum over the left testicle in the case reported, the patient a child of not quite 3, at the twentieth day of scarlet fever.



After release of a little pus, the genitals returned rapidly to normal. Both testicles had been enlarged and tender.

**Alcohol in Surgery.**—De Gaetano is gratified that others are beginning to appreciate the value of 70 per cent. alcohol containing 1 per cent. acetic acid as the most useful disinfectant for surgical use. His earliest publications calling attention to this appeared in 1908—after two years of experience with this method.

Jan. 1, 1922, 29, Medical Section No. 1

\*Meningococcus Septicemia. T. Pontano and E. Trenti.—p. 3.

\*Staining Technic for Flagella. G. Petragani.—p. 30.

\*Disease of the Striate Body. G. Artom.—p. 42.

**Meningococcus Septicemia.**—Pontano and Trenti report the case of a man of 28 with fever of the malarial type, an eruption partly hemorrhagic, partly erythematous, pains in joints and elsewhere, and symptoms suggesting a meningeal reaction, but no actual meningitis. The meningococcus B was cultivated from the blood and from the eruption secretion. The clinical picture was progressive, all the symptoms becoming aggravated at each recurring peak of the fever, and the patient complained of deafness. Cachexia finally became installed and the man died the third month. No effect was observable from polyvalent serotherapy or an autogenous vaccine or injection of milk. The eleven lumbar punctures were always negative from the bacteriologic standpoint.

**Staining Technic for Flagellates.**—Petragani describes a method with which he was able to show up from 4 to 30 or more flagella on various bacteria, vibriones, etc., some of them as long as 30 to 40 diameters of the body of the vibrio. These flagella interlace, forming an intricate network between the clustered vibriones. The bacteria, proteus, typhoid and paratyphoid show similar flagella only less numerous and shorter.

**Disease of the Striate Body.**—Artom reviews the progress in the last few years in our knowledge of the anatomy of and the clinical pictures for which the corpus striatum is responsible.

### Riforma Médica, Naples

Jan. 2, 1922, 38, No. 1

The Teaching of Surgical Pathology. G. Ferrarini.—p. 1.

Improved Sphygmo-Oscillometer. A. Fulehicro.—p. 7.

\*Leukocyte Count After Trauma, etc. A. Romani.—p. 9.

\*Leg Ulcers. G. M. Nejrotti.—p. 10.

**The Leukocyte Count After Operations and Traumas.**—Romani quotes conflicting authorities in regard to increase in the number of leukocytes after ether anesthesia, trauma and operations in general. He reports extensive research of his own which has demonstrated that in all these conditions the leukocyte count runs up, possibly in ten minutes, and persists high for five days at longest. As the number of polynuclears increases, the proportion of lymphocytes decreases.

**Leg Ulcers.**—Nejrotti regards the varicose ulcer as a trophoneurotic lesion secondary to disturbance in the circulation. Treatment should aim to restore normal circulation, and he agrees with those who claim that a bandage exerting even pressure over the entire leg is the best of all measures for this. The leg is wound from the roots of the toes to the lower half of the thigh, and the bandage is renewed every five to ten days. The fact that the patient is up and about as usual is a further advantage.

### Archivos Españoles de Pediatría, Madrid

December, 1921, 5, No. 12

\*Tuberculosis of the Eye in Children. F. Poyales.—p. 705.

Hysteria in Children; Ten Cases. S. Cavengt.—p. 725.

**Tuberculous Disease of the Eye.**—Poyales gives photomicrograms of three cases of tuberculous nodules in the sclerotic, or tuberculous keratitis or iritis. The boy of 9 seemed to be free from tuberculosis elsewhere, and the skin tuberculin test was negative, but the two girls of 11 and 13 had pulmonary tuberculosis. The eye in all three was enucleated, as vision had long been entirely lost. There was a history in two of the cases of a blow on this eye about three years before.

### Brazil Medico, Rio de Janeiro

Dec. 24, 1921, 2, No. 24

\*Tetragenus Purulent Infection. Ribeiro da Silva.—p. 363.

Spinal Fluid Control in Syphilis. U. Vianna and A. Mosses.—p. 365.

New Nematodes. I. L. Travassos.—p. 367.

**Tetragenus Infection.**—The boy of 9 had been having fever and sweats for three weeks when multiple abscesses and pseudocoxalgia developed, and the tetragenus was found in pure culture in the pus. Roentgenography revealed right pachypleuritis, confirming Apert's saying that the tetragenus loves the pleura. After an autogenous vaccine had been administered, there was no further suppuration, but the fever kept up for over a month longer. Then conditions soon returned to clinically normal, even the hip joint functioning.

Dec. 31, 1921, 2, No. 25

\*Rare Causes of Hemoptysis. O. Clark.—p. 375.

\*Syphilitic Disease of Lung. J. Barbosa.—p. 377.

Flagellate Parasites. Marques da Cunha and J. Muniz.—p. 379.

Ruptured Tubal Pregnancy. I. C. Madeira and N. Morena.—p. 380.

**Hemoptysis of Unusual Origin.**—Clark relates that in 1916 two young men were brought to his ward on the same day both bathed in blood from a severe hemoptysis. It proved difficult to arrest the hemorrhage in both cases, and the one with tubercle bacilli died. In the other case the hemoptysis proved to be the only manifestation of unsuspected syphilis. The hemorrhages returned on several occasions until thorough treatment for syphilis had cured the tendency. In another case, the profuse hemoptysis was the result of chronic high blood pressure in the man of 62, who did not drink or smoke, and who was free from syphilis. The heart was much enlarged, but the kidneys seemed normal except for nocturnal polyuria. The hemoptysis evidently prolonged the patient's life, but cerebral hemorrhage finally closed the clinical picture.

**Syphilitic Phthisis.**—Under this heading Barbosa reports a case of an acute infectious process in the right lung of a man of 47. The acute symptoms yielded to the ordinary measures but the symptoms of a pulmonary lesion persisted, and by exclusion he diagnosed syphilitic phthisis. This assumption was confirmed by the prompt benefit from specific treatment. It is impossible to differentiate these cases by the physical findings. In some recent cases of asthma, specific treatment resulted in the cure of the long-rebellious asthma. This group included some cases of asthma in infants. The results in these cases suggest that the benefit from iodid in asthma is probably due to the unsuspected syphilis element in the clinical picture. The spirochetes getting into the circulation might set up anaphylaxis like any other parenterally incorporated protein. In his cases of syphilitic disease of the lungs, no other organs seemed to be affected.

### Deutsche medizinische Wochenschrift, Berlin

Jan. 5, 1922, 48, No. 1

Characteristics of Present-Day Therapy. A. Strümpell.—p. 1.

Constitution in Relation to Therapy. F. Kraus.—p. 5.

The Theory of Chromosomes. O. Hertwig.—p. 9.

Chronic Disorders of Circulation. Goldscheider.—p. 10. Cont'd.

Present Status of Tuberculin Treatment. F. Klemperer.—p. 13.

Operative Treatment of Goiter. O. Hildebrand.—p. 16.

Activation of Arspenamin Preparations by Metals. W. Kolle.—p. 17.

Treatment of Syphilis by General Practitioners. Jadassohn.—p. 19.

Treatment of Puerperal Fever. A. Döderlein.—p. 22.

Observations of an Ophthalmologist of Long Experience. J. Hirschberg.—p. 25.

Serum Prophylaxis in Measles. R. Dcckwitz.—p. 26.

Opium and Its Preparations. D. G. Joachimoglu.—p. 27.

New Remedies. A. Holste.—p. 29.

Displacement of Female Genitalia. W. Liepmann.—p. 30.

The Alcohol Problem in Norway. H. F. Høst.—p. 32.

### Klinische Wochenschrift, Berlin

Jan. 8, 1922, 1, No. 2

Foundations of Medical Thought of Today. Martius.—p. 49.

Torticollis and Torsion Spasm. R. Cassirer.—p. 53.

Rectal Administration of Digitalis. E. Meyer.—p. 57.

Antitrypsin in Quartz Lamp Therapy. Koenigsfeld.—p. 58.

Efficiency of Lumbar Anesthesia. R. T. von Jaschke.—p. 60.

Malignant Lymph Gland Affections. E. Grafe.—p. 62.

\*Meninges in Infections of Upper Air Passages. Göppert.—p. 64.

Tests for Bilirubin in Blood. Holzer and Mehner.—p. 66.

Mammary Secretion and Mammary Crises in Tabes. Biberstein.—p. 68.

Cure of Acute Benzol Poisoning under a Lecithin Emulsion. Nick.—p. 68.



- Permeability of Muscle Fibers under Epinephrin. H. Lange.—p. 70.  
Elimination of Phosphoric Acid by Retina. Lange and Simon.—p. 70.  
Soaps in Relation to Serums. A. Jarisch.—p. 71.  
Cortical Epilepsy in Multiple Sclerosis. H. Curschmann.—p. 71.  
Indications for Application of Diathermy. Kowarschik.—p. 72.  
Treatment of Enuresis. J. Zappert.—p. 75. Conc'n.  
Tuberculosis Since the War. Prinzing.—p. 77.

**Participation of the Meninges in Acute Infectious Rhinitis and Tonsillitis.**—Göppert has been surprised to find the Kernig sign positive in a large proportion of infants and other children with ordinary acute infectious processes in the nose or throat. He accepts this as evidence that the infectious process had involved the meninges more or less. This explains the unusual restlessness or apathy observed in certain cases, and it also warns that, even if the child has apparently recovered, yet it should be spared unnecessary strain for a time. This may ward off the headache and depression that sometimes follow and long persist after an apparently harmless febrile infection in the upper air passages. The Kernig sign will give the clue to diagnosis and treatment.

### Medizinische Klinik, Berlin

Dec. 25, 1921, 17, No. 52

- \*Mobilization After Surgery of Limbs. A. Bum.—p. 1571.  
Vaccine Treatment of Whooping Cough. F. Reiche.—p. 1573.  
Delivery with Adherent Myomatous Uterus. Nacke.—p. 1574.  
\*The Roentgen Rays in Diagnosis. F. Pordes.—p. 1575. Conc'n.  
\*Ferments in Feces. L. Strauss.—p. 1577.  
\*Obstetrics of the Emergency Service. E. Runge.—p. 1579. Conc'n.

**Mobilization After Fractures.**—Bum declares that the first physician treating the fracture, even the first aid procedures, may decide the fate of the limb. Hence he urges that the general practitioner should master the mobilizing-functioning procedures, so as to know how to apply the principle of keeping the broken bone still while the uninjured soft parts and the joint are kept functioning more or less like normal. Immediate mobilization to Lucas-Championnière's extreme he does not approve of, and insists that the strictest individualization is imperative; the age, the site and kind of fracture must be considered in each case. A stirrup and splint arrangement with continuous extension of the limb, which allows the patient to get up early and practice walking on the limb under the physician's eyes, aids materially in consolidation. Recent research has confirmed anew that early static use is a functional stimulus for production of callus. He warns impressively against including sound fingers or other parts in the first dressings applied.

**Roentgenography in Diagnosis.**—Pordes is assistant in the Vienna roentgen-ray laboratory in charge of Holzkecht, and he outlines the numerous points necessary to bear in mind to make the roentgen-ray examination most efficient and informative.

**Ferments in the Stools.**—Strauss compared the findings in 220 stool examinations with the findings with the duodenal tube. The ferments vary within a wide range in the stools, even when conditions are apparently identical. But the trypsin and lipase findings in the duodenal juice can be counted on as a reliable index of pancreas functioning. The diastatic ferment findings are less instructive.

**Obstetrics at the Emergency Hospital.**—Runge here concludes his long study of the various conditions liable to be encountered when a call comes in at the emergency hospital for medical aid at delivery. He has thus described sixty-four more or less hypothetical cases, and the measures indicated in each.

Jan. 1, 1922, 18, No. 1

- \*Surgical Treatment of Wounds of Nerves. M. Kirschner.—p. 1.  
\*Angina Pectoris. R. Schmidt.—p. 6. Conc'n No. 2, p. 36.  
Silicic Acid in Treatment of Tuberculosis. A. Kühn.—p. 9.  
\*Congenital Syphilis. E. Stransky and E. Schiller.—p. 11.  
\*Gonococcus Joint and Tendon Sheath Lesions. E. Langer.—p. 13.  
\*Transfusion of Blood in Anemias. A. Gross.—p. 15.  
Epidemic Encephalitis. Hilgermann, Lauxen and C. Shaw.—p. 17.  
Acute Gastro-Intestinal Disease in Infants. K. Blühdorn.—p. 18.  
Present Status of Physical Therapy. A. Laqueur.—p. 20.

**Operative Treatment of Gunshot and Contusion Wounds of Nerves.**—Kirschner summarizes his conclusions, from the present condition of the war wounded, in the warning that as long as there are signs of progressive improvement, operative measures are not needed. But progressive impairment in

sensory and motor functioning, or pain refractory to conservative measures, as also trophic disturbances, demand unconditionally operative relief. The prospects of a cure from suture of the nerve are very slight after an interval of three years, and the prospects are zero after a five year interval. Preceding operations that have failed need not deter from operating anew.

**Angina Pectoris.**—Schmidt analyzes his 121 cases of angina pectoris in the last few years; only 27 were in women, and the age was between 20 and 40 in only 13. The blood pressure was 100 to 120 in 9; 120 to 140 in 17; 140 to 160 in 8; and 180 to 200 in 20. In one case an attack of angina pectoris occurred during roentgenoscopy, and the heart findings showed no modification during the attack. In all the cases the pulse kept regular and full during the attacks and the blood pressure did not drop. He is convinced that the pains start in the aorta; necropsy invariably reveals atheromatosis of the aorta in the angina pectoris cases, while pathologic conditions in the coronaries are extremely variable. The sclerosis of the aorta, especially in cases of syphilitic or gouty origin, is responsible for a neuralgic or neuritic irritation of the aortic plexus. Then, under the influence of some rapid walk, emotion or other stress—in one of his cases, merely swallowing solid food, thus pulling on the aorta—may bring on the attack of angina pectoris, just as chewing may bring on trigeminal neuralgia, or flexing the knee may bring on sciatica. With an aneurysm of the aorta there may be continuous pain like the paroxysmal pain of angina pectoris. This conception of angina pectoris as an aortalgia explains the benefit from treatment as for neuralgia in general, salicylic acid, courses of laxative mineral waters, etc. Nitroglycerin acts more promptly in an alcoholic solution than in tablet form, and he has never witnessed any injury even from long continued nitroglycerin treatment. One of his patients has taken it regularly for four years, before each defecation. The attacks otherwise occur at defecation. It seems to combat also meteorism and flatulence. If there are unpleasant sensations in the head after taking it, the patient had better recline. The favorable action of theobromin preparations is well known; he likes to give them with a little quinin. Pain on pressure of the plexus on the left side warns of impending angina pectoris, and this should always be tested before beginning a course of balneotherapy, especially with thermal waters, when conditions seem to predispose to angina pectoris. Treatment for syphilis is a grateful field; it may be wise to give a little nitroglycerin before the arsphenamin. Cold hydrotherapy, cold compresses or cold packs to the chest around to the axillae, in some cases gave relief more promptly than nitroglycerin. In some cases hot compresses to the precordial region answered the purpose. Cold rubs were liked better by certain patients: one preferred to have ice applied to the back. Overfilling of the stomach has to be scrupulously avoided. In one patient of a gouty tendency, the condition improved materially when only boiled meat was eaten. Carbonated waters often do harm; alcohol and tobacco must be avoided. A small amount of a light beer is often borne well and relished. Under treatment for endogenous constitutional derangement of metabolism, angina pectoris loses much of its gravity. Among his patients are 1 with a twenty year course, 1 with a fourteen, 4 with over ten years, 2 with eight, 3 with six and 1 with a four year course, and all of these were in fairly good condition when last examined. The prognosis is thus much more favorable than with cardiac asthma.

**Congenital Syphilis.**—The father had acquired syphilis thirteen years before his marriage and had been vigorously treated. The Wassermann reaction had never been positive. The first child had a three plus positive reaction and signs of meningitis developed in the first week, with convulsions. The meningitis subsided under treatment, but a hemorrhagic focus formed a large cyst in the brain, the child dying when 2 months old. The father was apparently entirely cured of his syphilis according to all modern standards, and the mother had never shown any signs of the disease.

**Gonococcus Joint and Tendon Sheath Lesions.**—In addition to the usual conservative measures, Langer has the



patient exercise the joint actively in a full bath, as this allows the movements to be done without pain. Superheated air has a similar effect, and he usually has a hot air bath of fifteen or thirty minutes follow the full bath of the same length. In the severer cases, this treatment is too strenuous, repose being what seems to be needed. He splints the joint, and gives hot air baths, with stasis hyperemia, beginning with one hour and soon keeping it up for twenty hours. As soon as the fever has dropped, passive and active movements, massage and electricity are begun, as in the other form. The after-treatment is equally important, mud baths, sand baths, diathermy, etc., including heliotherapy. The latter he sometimes applied during the acute phase, and vaccine and protein therapy were invaluable adjuvants.

**Transfusion of Blood in Anemia.**—Gross ascribes the benefit to the serum which acts like a kind of protein therapy, while the iron in the transfused blood aids in production of new erythrocytes. The best results seem to be obtained with a large transfusion of citrated blood followed by repeated small infusions. Sometimes parenteral injection of iron may stimulate the regeneration of blood after failure of all other measures.

Jan. 8, 1922, 18, No. 2

- \*Nephritis. E. Romberg.—p. 33. Conc'n No. 3, p. 67.
- Questionnaire on New Epidemic of Influenza.—p. 39. Cont'd.
- \*Epidemic Encephalitis. H. Pette.—p. 41.
- The Purpura Question. H. Full.—p. 43.
- Charcoal in Treatment of Dysentery. D. Kling.—p. 46.
- Multiple Hydatid Cysts in Liver of Girl. Wohlgenuth.—p. 49.
- Diagnosis and Treatment of Intestinal Bilharziasis. R. Höppli.—p. 50.
- Alimentary Intoxication in Infants. K. Blühdorn.—p. 51.
- \*Official Directions for Arsphenamin Treatment. F. Pinkus.—p. 62.

**Nephritis.**—Romberg insists on keeping patients with acute glomerular nephritis in bed. At least for two months, is the rule, with hematuria, possibly edema, rise in blood pressure and uremia; even longer in severer cases. The aim of treatment is to spare the kidneys, restricting fluids, salt, protein and acids. He outlines the ration for a day in five small meals, bread, butter, vegetables, fruit, rice or tapioca, all prepared without salt, and only 200 gm. of milk or tea twice a day. The calories total 2,500 or 3,000, the total protein 9.6 gm. and total salt not over 3 gm. Some persons do well on this diet for weeks, but, as a rule, after five days the amount of fluid can be increased to 1,200 or 1,500 c.c. for two or three days, then returning to the kidney-sparing diet, but it should not be kept up for more than a few weeks. When the acute phase is past, a little more salt, fluids up to 1.5 or 2 l. and 100 gm. of meat or fish keep the strength up better. He does not advocate decapsulation, and says that sweating procedures are unnecessary. Only the heart may need a little support in the grave cases. Acute exacerbations of contracted kidney are to be treated in the same way, only he warns emphatically against sweating procedures here. Venesection may be useful in stimulating the water metabolism in impending or established uremia. He has seen 656 cases of arteriosclerotic contracted kidney in nearly six years, with only 58 cases of glomerular contracted kidney; 74.1 per cent. of the latter were under 40, but only 2.6 per cent. of the former. A tendency to asthma was the first symptom to attract attention to the kidney disease in 25 per cent. of his private patients. Nycturia is manifest after much intake of fluids. Very small doses of digitalis may aid, as also restriction of fluids, lying down twice during the day, regular exercise, and a vacation for a few weeks several times in the year.

**Epidemic Encephalitis.**—Pette writes from Hamburg to describe six cases of very mild epidemic encephalitis in men and women between 24 and 34, early in 1920. The sickness was very mild in all; in one case there was no interruption of work, but several months later, up to fifteen months, severe parkinsonian symptoms developed and still persist, and the patients seem irritable and listless. He adds that the clinic, the anatomic and the bacteriologic findings seem to confirm that any one who has had epidemic encephalitis has a volcano within him which may keep latent or spread devastation later.

**Directions for Use of Arsphenamin.**—Pinkus quotes freely from the circular issued by the national public health service, which is distributed with the drug. It warns for extra caution in case of a "cold," sore throat, or stomach upset.

With severer disturbances, no attempt should be made to give the drug. A long list of contraindications is given. A warning is also given to be on the alert for by-effects from both arsphenamin and mercury. With recent infection, the Wassermann negative, treatment should begin with arsphenamin. Any disturbances after the injection such as headache, nausea, dizziness, vomiting, sleeplessness, redness of the face, eruption or drop in the usual amount of urine should be reported to the physician without waiting for him to ask. These always call for extra caution; when severe, the next injection should be postponed until a week after the disturbance has completely subsided. A rise in temperature after the very first injection does not call for suspension, but any such rise later in the course warns for extra caution. Pinkus comments that the circular does not warn against hemorrhagic encephalitis. To avoid this, the most scrupulous attention has to be paid to the very slightest signs of nervous irritation. Even the smallest doses may induce it. A hitherto latent meningomyelitis may likewise flare up under a massive dose. There are also liver disturbances to be borne in mind which are liable to develop up to three months after the course, ranging from simple catarrhal jaundice to fatal yellow atrophy of the liver. To ward these off, the diet should be regulated for a long time after the close of the course.

### Münchener medizinische Wochenschrift, Munich

Dec. 30, 1921, 68, No. 52

- Transitory, Severe Mixed Cyanosis in New-Born. Göppert.—p. 1673.
- Arguments Against the Theory of Vicarious or Supplementary Menstruation. A. Sippel.—p. 1674.
- "Doll's Eye" Symptom of Postdiphtheric Paralysis. Widowitz.—p. 1674.
- \*Fatality from Combined Treatment of Syphilis. Vill.—p. 1675.
- Iodism in Drinkers. M. R. Bonsmann.—p. 1676.
- Clinical Aspects of Mercury Exanthems. F. Wolf.—p. 1678.
- Surgical Scarlet Fever from Sucking of Thumb. R. Bloch.—p. 1679.
- \*Bone Typhoid Process as Source of Epidemic. P. Michaelis.—p. 1679.
- \*Treatment of Epidemic Singultus. H. Reh.—p. 1680.

**Fatality After Combined Treatment of Syphilis and Gonorrhea.**—Vill reports two cases of syphilis plus gonorrhea in young women who were given a combined salvarsan, mercury and collargol treatment. Both developed hemorrhages in the skin and mucosae, and the blood count revealed severe injury of the blood marrow, with fatal outcome in less than two months. The syphilis was in the second stage, with skin eruptions in both.

**Typhoid Bone Process as Source of Epidemic.**—The typhoid osteomyelitis in the ulna of the working man secreted profusely, and the small epidemic of typhoid in the environment is ascribed by Michaelis to contagion from this source.

**Treatment of Epidemic Singultus.**—Reh has found a 0.4 per cent. solution of cocain efficacious in the treatment of persistent singultus. In two cases excellent results were secured after the administration of 1 teaspoonful; in a third case there was a slight attack after the second dose of cocain, but after the third teaspoonful the attacks ceased. Reh regards this treatment as the most practical known. All three patients were men between 30 and 40 years old.

### Wiener klinische Wochenschrift, Vienna

Dec. 15, 1921, 34, No. 50

- Tuberculosis of Spleen, with Tubercles in Brain. F. Drebschok.—p. 603.
- \*Length of Intestine in Relation to Height. K. Jellenigg.—p. 604.
- Laryngeal Manifestations in Syringomyelia. Weissappel.—p. 605.
- Gallstones and Cancer of the Gallbladder. F. Marchand.—p. 606.

**Length of Intestine in Relation to Sitting Height.**—Jellenigg raises objections to Pirquet's findings by which he establishes the relation of the sitting height to the length of the intestine as 1:10. In thirty-six measurements that he conducted on children from 10 to 12 years old he found that the average relation between the sitting height and the length of the intestine was 1:11.9; that is, practically 1:12. There were, moreover, very marked fluctuations of the proportion in different individuals. The minimum was 1:8.2 and the maximum was 1:15.6. Jellenigg regards it, therefore, as unjustified to set up any generally accepted norm as expressive of the relation between sitting height and length of intestine, and still more unjustified to endeavor to determine on the basis of such relation the extent of the resorbent surface of the intestine.



**Zeitschrift für Tuberkulose, Leipzig**January, 1922, **35**, No. 5

\*Allergy Versus Anergy. E. Szász.—p. 321.

\*Tuberculosis plus Other Diseases. B. Hirschowitz.—p. 327.

Disinfection of Tuberculous Sputum. J. Schuster.—p. 342.

History of Inhalation of Alternating Hot and Cold Air in Treatment of Tuberculosis. C. Schelenz.—p. 344.

Specific plus Unspecific Treatment in Tuberculosis. A. Mayer.—p. 346.

Tuberculous Infection in School Age. I. Ivancévie and Max Pinner.—p. 351.

**Allergy.**—Szász insists that allergy is exclusively a property of the cells. The substance which, retained in the cell, injures the cell, is the curative agent when it gets into the body juices. The blood stream is only the vehicle. The cells undergo some change when an antigen is introduced. They thus defend themselves, and this defensive change is manifested in the Pirquet tuberculin skin reaction. This is allergy. If the defensive reaction is inadequate, symptoms follow, possibly including fever. Fever is thus the exact opposite of allergy, and a febrile reaction to tuberculin indicates the more or less complete inadequacy of the defensive forces.

**Relations Between Tuberculosis and Other Diseases.**—Hirschowitz' figures from five years of necropsies at Prague show that tuberculosis was responsible for 49 per cent. of the 4,538 deaths. Active cancer was found in 4 of the 944 tuberculosis deaths, but different organs were always involved, as also in the total 174 cases (8.4 per cent.) in which carcinoma was accompanied by tuberculosis. There were 161 cancer cases without signs of tuberculosis (10.1 per cent.). The statistics cited from various European states confirm the conclusions from this Prague material to the effect that the lower the tuberculosis death rate, the higher the cancer death rate, and vice versa. The death rate from tuberculosis in 53 subjects with kyphoscoliosis was far below the general average. The more pronounced the kyphoscoliosis, the greater seems to be the resistance to tuberculosis. Tuberculosis was found associated with a heart defect in 7.67 per cent. of the total 2,243 tuberculous cadavers; with nephritis in 15.51 per cent.; with cirrhosis of the liver in 1.87; with syphilitic aortitis in 4.81; with carcinoma in 7.76; with gastric ulcer in 4.9, and with kyphoscoliosis only in 1.53 per cent. The experiences related confirm the traditional view that a mitral defect seems to favor the biologic healing of a tuberculous process. The extra amount of blood in the lung tends to promote the healing of the tuberculous lesion. This is probably the explanation of the low death rate also with kyphoscoliosis, with or without other manifestations of rachitis.

**Zentralblatt für innere Medizin, Leipzig**Nov. 26, 1921, **42**, No. 47

Experimental Pulsus Pseudoalternans. P. Engelen.—p. 906.

**Casopsis lekarův ceskych, Prague**Jan. 7, 1922, **61**, No. 1

\*Pathogenesis of Icterus of the New-Born. F. Luska.—p. 1. Conc'n No. 2, p. 26.

\*Excretion of Indigo Compounds by Human Urine. E. Sieber.—p. 6.

**Icterus Neonatorum.**—Luska finds in a study, based on 120 cases, that the icterus of the new-born usually begins by a hemoglobinemia on the second to the fourth day after birth. Hemoglobin was seldom found in the urine. In a number of cases hemolytic staphylococci were found in blood and sometimes in the granuloma of the navel and in the feces. In eleven cases a hemolytic agent closely resembling staphylolysin was present in the serum. A rise in the antistaphylolytic titer of the serum was evident in all cases. The author concludes that the icterus of the new-born is due to a bacterio-toxic hemolysis, which was in his cases caused by hemolytic staphylococci.

**Excretion of Indigo Compounds.**—Crystals and amorphous pieces of indigo were found in the urine and tubuli of kidneys in a case of gastro-enteritis and pyelonephritis. A case of cancer of the stomach with liver metastases excreted a considerable amount of indigo red, while Jaffé's indican test was negative.

Jan. 14, 1922, **61**, No. 2

\*A Rational Method of Getting a Strong Hemolytic Amboceptor. G. Kabrhel.—p. 21.

Jan. 21, 1922, **61**, No. 3

Acute Appendicitis Suggesting Subacute Ileus. A. Jirásek.—p. 41.

Sarcoma of the Larynx. K. Greif.—p. 43.

A Simple Apparatus for Raising Heel of Pes Varus. J. Hanausck.—p. 46.

Connection Between Disease of Nose and Accessory Cavities and Diseases of the Eye. V. Guttman.—p. 48.

Jan. 28, 1922, **61**, No. 4

Intestinal Volvulus. Zahradnický.—p. 62.

Principles of Specific Treatment of Tuberculosis. J. Jedlicka.—p. 67.

Determination of Blood Pressure. J. Blatný.—p. 72.

**Preparation of Hemolytic Amboceptor.**—Very small doses of corpuscles (0.5 c.c. of a 5 per cent. emulsion) were injected intravenously at long intervals (three to eight weeks).

**Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam**Dec. 3, 1921, **2**, No. 23

Mixing of Races in Middelburg. J. J. Wap.—p. 2777.

\*Orientation Illusions in Moving Train. M. E. Mulder.—p. 2785.

Peanut Kernel from Bronchus of Infant. C. E. Benjamins.—p. 2788.

Medical Folklore. M. H. Cohen.—p. 2795.

\*Treatment of Insanity in Former Centuries. H. Breukink.—p. 2806.

Cont'd.

**False Estimation of Direction in a Moving Train.**—Mulder discusses the estimation of vertical and horizontal when a moving train stops suddenly.

**Treatment of Mental Disease in Former Centuries.**—Breukink reproduces ten more cuts from works dating from the sixteenth and later centuries. Some of them show a group of insane and epileptics being marched to some shrine or mineral spring or river deemed to have a curative action. Other prints show a quack digging out a stone from the brain.

**Hospitalstidende, Copenhagen**Jan. 25, 1922, **65**, No. 4

\*Capacity of the Lungs. C. Lundsgaard and K. Schierbeck.—p. 49.

**Capacity of the Lungs.**—The capacity of the lungs in twenty-seven normal persons between 19 and 36 was repeatedly tested to determine the normal standards. The findings are compared with pathologic cases, and the results are interpreted as throwing light on the functional capacity of the balance of the lung in case of disease. The extremes of the vital capacity in the twenty-seven normal subjects ranged from 2.20 to 5.85; the residual air in these two extreme cases from 0.88 to 1.97; the total volume, from 3.08 to 7.82; the average capacity, from 1.88 to 4.89.

**Svenska Läkaresällskapets Handlingar, Stockholm**Dec. 31, 1921, **47**, No. 4

Philippe Ricord, 1800-1889. J. Almkvist.—p. 97.

\*Prophylaxis of Tuberculosis. C. Flügge (Berlin).—p. 106.

**Prophylaxis of Tuberculosis.**—Flügge argues that the reduction in the death rate from tuberculosis is only deceptive progress, as the number of the mildly infected is constantly increasing and the sources of contagion are thus being multiplied. He declares that progress can be realized only by attacking the problem as affecting the entire people, raising the level of the general health on the one hand, and isolating all sources of contagion on the other hand.

**Ugeskrift for Læger, Copenhagen**Feb. 2, 1922, **84**, No. 5

\*Otitis Complicating Scarlet Fever. K. Salomonsen.—p. 121.

Gibbus with Tuberculous Spondylitis. R. Hertz.—p. 133.

Principles for Making Artificial Limbs. E. Nyrop.—p. 136.

**Scarlatinal Otitis.**—The treatment of scarlatinal otitis at the Blegdamshospital is the same as for otitis of other origin, only with greater haste to apply operative measures on account of the more destructive nature of the scarlet fever process. As soon as the mastoid is tender and infiltrated, it is opened up, as likewise when the temperature fluctuates, running up to 38 or 39 for a few days and then back to normal for a few days, even if nothing certain can be discovered in the ear or mastoid. A discharge from the ear persisting for six or eight weeks is likewise an indication for opening up the mastoid, after exclusion of other causes. In fifty cases of scarlatinal otitis given operative treatment, the intervention was bilateral in eight cases. Except for one patient who already had sinus thrombosis, none of these patients died.



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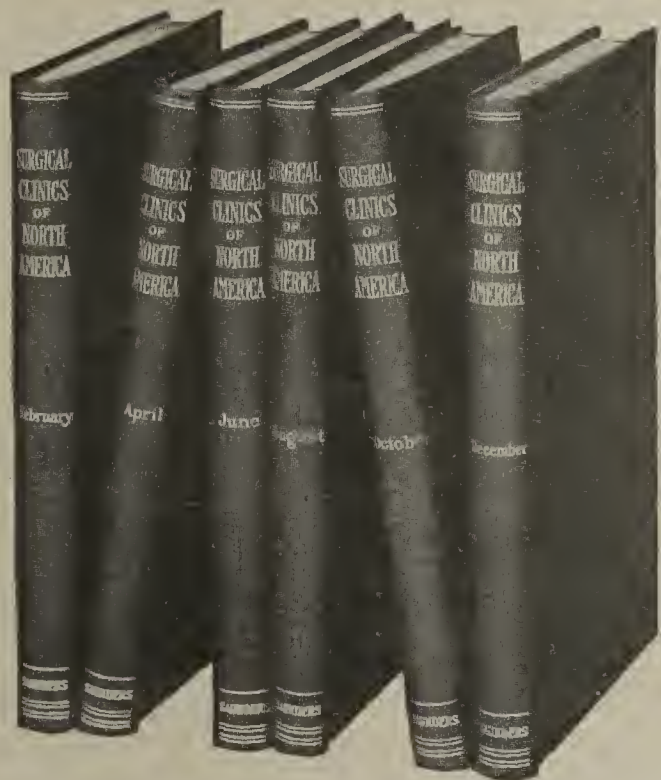
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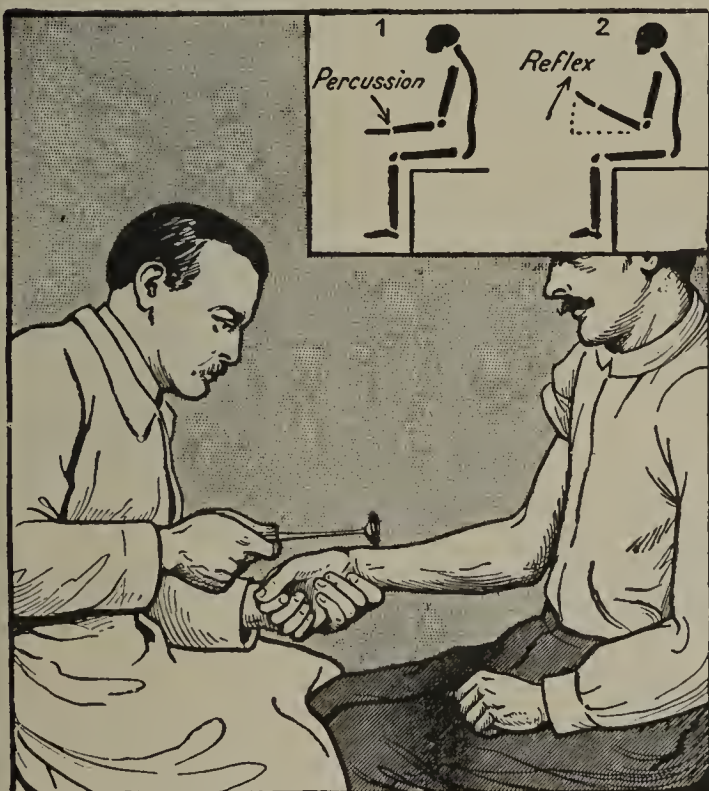


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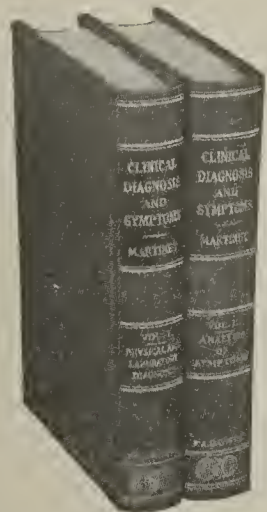
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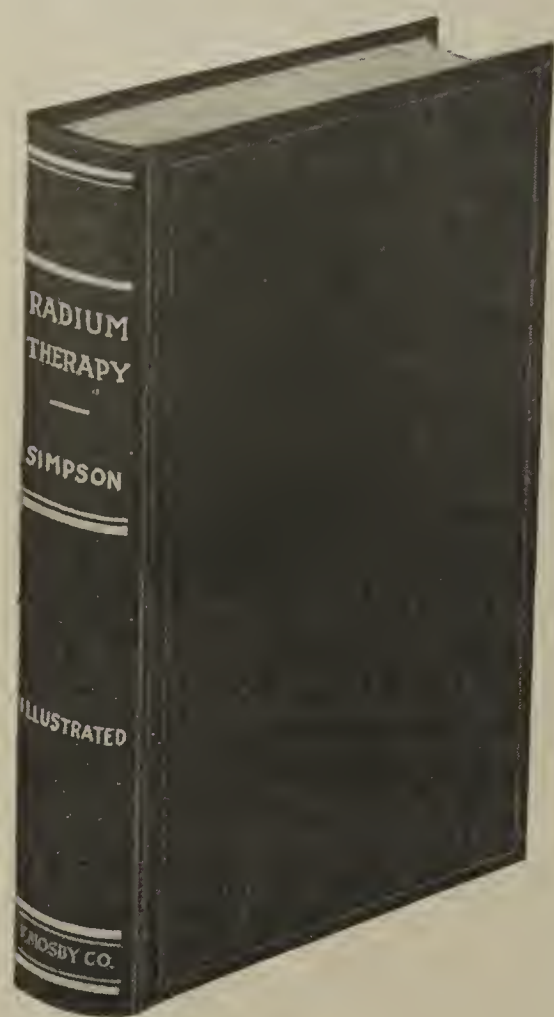
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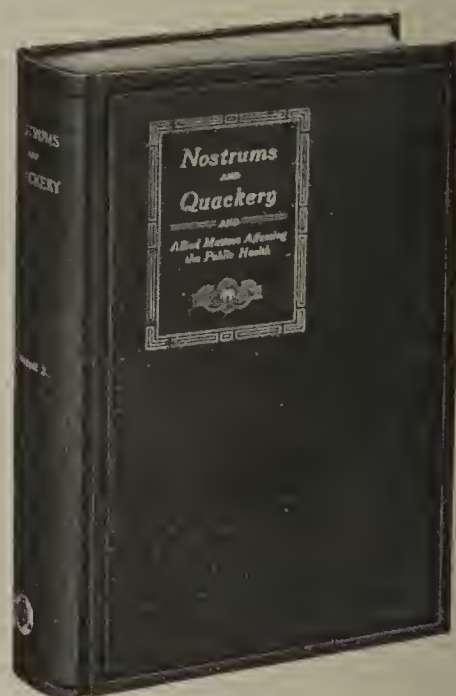
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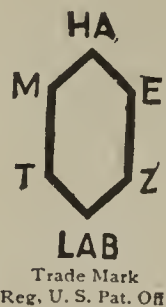
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Louisiana State Medical Society....	J. E. Knighton, Shreveport.....	P. T. Talbot, 1551 Canal St., New Orleans.....	Boston, June 13-14, 1922
Maine Medical Association.....	Addison S. Thayer, Portland.....	B. L. Bryant, 265 Hammond St., Bangor.....	Flint, June 7-9, 1922
Maryland, Med. and Chir. Faculty of	A. H. Hawkins, Cumberland.....	J. A. Chatard, 1211 Cathedral St., Baltimore..	Minneapolis, Oct. 3-5, 1922
Massachusetts Medical Society.....	John W. Bartol, Boston.....	W. L. Burrage, 42 Eliot St., Jamaica Plain, Boston	Hazlehurst, May 9-10, 1922
Michigan State Medical Society.....	William J. Kay, Lapeer.....	F. C. Warnshuis, 410 Powers Bldg., Gr. Rapids	Ex'lsior Spgs. May 9-11, '22
Minnesota State Medical Assn.....	James Frank Corbett, Minneapolis.....	Carl B. Drake, Central Bank Bldg., St. Paul..	Great Falls, July 12-13, 1922
Mississippi State Medical Assn.....	Henry Boswell, Sanatorium.....	T. M. Dye, Clarksdale.....	Omaha, April 24-27, 1922
Missouri State Medical Association...	A. H. Hamel, St. Louis.....	E. J. Goodwin, 3529 Pine St., St. Louis.....	Reno, September, 1922
Montana, Medical Association of...	W. W. Andrus, Miles City.....	E. G. Balsam, 222 Hart-Albin Bldg., Billings...	Concord, May 17-18, 1922
Nebraska State Medical Association...	B. B. Davis, Omaha.....	R. B. Adams, 1013 Terminal Bldg., Lincoln...	Spring Lake, June 20-22, '22
Nevada State Medical Association...	R. A. Bowdle, East Ely.....	Horace J. Brown, Goldfield.....	Gallup, April 28-29, 1922
New Hampshire Medical Society...	Charles S. Walker, Keene.....	D. E. Sullivan, 7 N. State St., Concord.....	Albany, April 18, 1922
New Jersey, Medical Society of....	Henry B. Costill, Trenton.....	William J. Chandler, South Orange.....	Wins'n-Salem, Apr. 25-27, '22
New Mexico Medical Society.....	Chester Russell, Artesia.....	J. W. Elder S. F. H., Albuquerque, Act. Sec.	Jamestown, June 1-2, 1922
New York, Med. Soc. of the State of	James F. Rooney, Albany.....	Edward L. Hunt, 17 W. 43d St., New York...	Cincinnati, May 2-4, 1922
N. Carolina, Med. Soc. of the State of	Hubert A. Royster, Raleigh.....	L. B. McBrayer, Sanatorium.....	Oklahoma City, May 9-11, '22
North Dakota State Med. Assn.....	Harley E. French, University.....	H. J. Rowe, Lisbon.....	Portland, June, 1922
Ohio State Medical Association.....	Wells Teachnor, Columbus.....	Mr. D. K. Martin, Ex. Sec., 131 E. State St., Columbus	Scranton, Oct. 2-5, 1922
Oklahoma State Medical Association...	G. A. Boyle, Enid.....	C. A. Thompson, 508 Barnes Bldg., Muskogee..	Ponce, Dec. 15-17, 1922
Oregon State Medical Association...	Clarence J. McCusker, Portland..	T. Homer Coffen, Journal Bldg., Portland....	Providence, June 1, 1922
Pennsylvania, Med. Soc. of State of	Frank G. Hartman, Lancaster.....	W. F. Donaldson, Jenkins Arcade, Pittsburgh..	Rock Hill, Apr. 18-19, 1922
Philippine Islands Medical Assn....	Baldomero Roxas, Manila.....	L. Concepcion, Coll. of Med. & Surg., Manila..	Huron, May 16-18, 1922
Porto Rico, Med. Assn. of.....	P. Gutierrez Ingaravidez, San Juan	Augustin R. Laugier, San Juan.....	Memphis, April 11-13, 1922
Rhode Island Medical Society.....	George S. Mathews, Providence...	I. W. Leech, 111 Broad St., Providence.....	El Paso, May 9-11, 1922
South Carolina Medical Association...	H. L. Shaw, Sumter.....	Edgar A. Hines, Seneca.....	Salt Lake City, Aug. 31-Sept. 2, '22
South Dakota State Med. Assn.....	George S. Adams, Yankton.....	Frederick A. Spafford, Flandreau.....	Burlington, Oct. 12-13, 1922
Tennessee State Medical Assn.....	William Britt Burns, Memphis...	Olin West, 327 Seventh Ave., N., Nashville...	Norfolk, Oct., 1922
Texas, State Medical Association of...	T. J. Bennett, Austin.....	H. Taylor, Texas State Bk. Bldg., Fort Worth.	Tacoma, 1922
Utah State Medical Association.....	Augustus C. Behle, Salt Lake City	Wm. L. Rich, Boston Bldg., Salt Lake City...	Huntington, May 17-19, '22
Vermont State Medical Society.....	F. W. Sears, Burlington.....	W. G. Ricker, St. Johnsbury.....	Green Lake, Sept. 6-8, 1922
Virginia, Medical Society of.....	Edward C. S. Taliaferro, Norfolk..	Mr. G. H. Winfrey, 104 1/2 W. Grace St., Richmond	Sheridan, June 20-22, 1922
Washington State Medical Assn.....	W. D. Read, Tacoma.....	C. H. Thomson, 508 Cobb Bldg., Seattle.....	
West Virginia State Med. Assn....	J. Howard Anderson, Marytown...	Robert A. Ashworth, Moundsville.....	
Wisconsin, State Med. Society of...	Sidney S. Hall, Ripon.....	Rock Sleyster, Wauwatosa.....	
Wyoming State Medical Society....	H. R. Lathrop, Casper.....	Earl Whedon, Sheridan.....	

Officers of the A. M. A. appeared in this space last week.

Corrections will be appreciated

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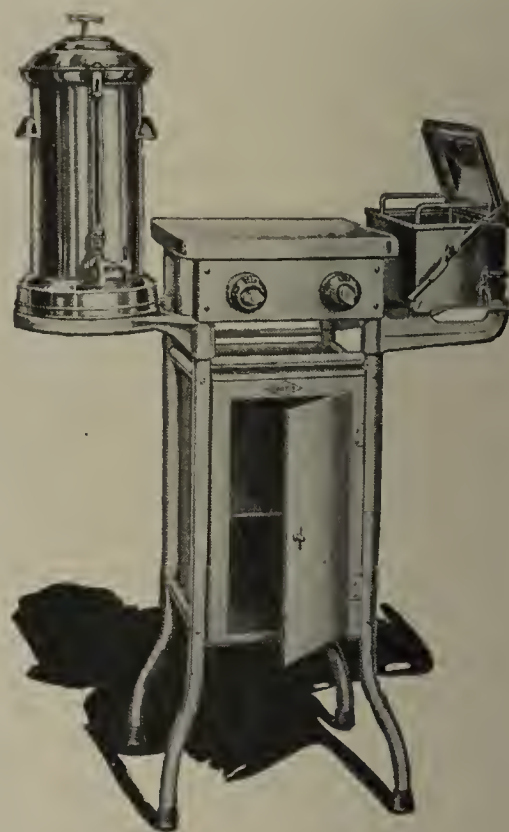
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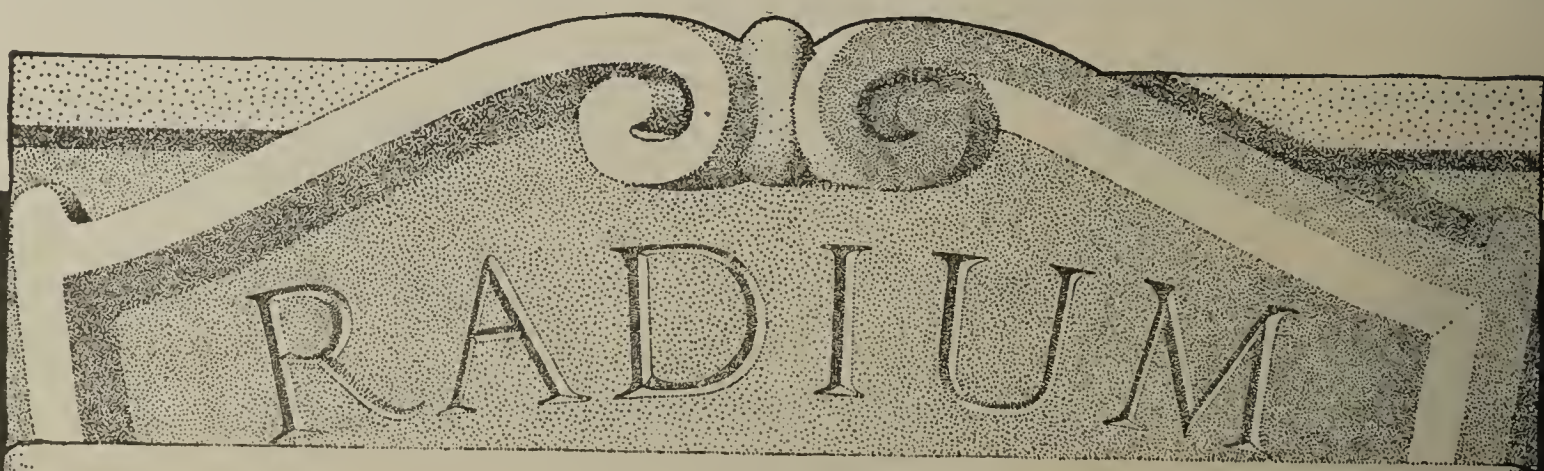
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Supplied as a powder in ounce vials and in 5-grain capsules.







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## United States Radium Corporation

58 Pine Street  
**FACTORIES:** Orange, N. J.

Formerly Radio Chemical Corporation

New York City  
**MINES:** Colorado

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## DENTAL CREAM

### Dentifrice Efficiency

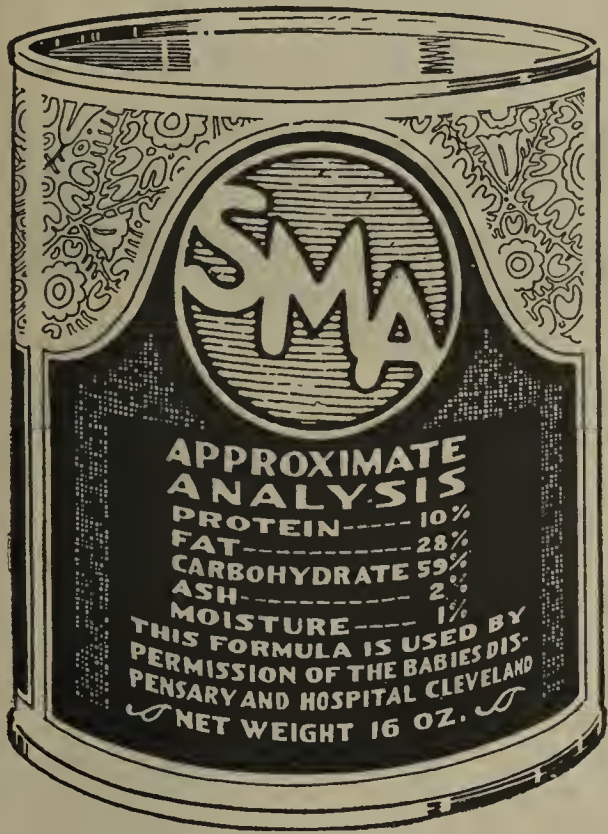
Bacteria, which are the normal inhabitants of the mouth, generally initiate tooth decay. All efforts for reducing the numbers of bacteria without injury to the individual or to the delicate tissues of the mouth act as prophylactic measures.

Night and morning brushing of the teeth and membrane of the mouth with KOLYNOS DENTAL CREAM keeps the teeth clean and polished and the mouth wholesome and sanitary. Kolynos possesses those qualities and its formula embodies those principles laid down by investigators who are seeking to establish oral hygiene on a scientific basis.

*Request Physician's Samples.*

**THE KOLYNOS COMPANY**  
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# A Pioneer in the Constant Use of Cod Liver Oil

Seven years ago, at the very beginning of the practical work in the development of a food to keep babies well, the anti-rachitic and anti-spasmophilic qualities of S. M. A.\* were provided for intentionally by the addition of "a liberal amount of cod liver oil."

## S.M.A.—A Food to Keep Babies Well

Since 1915 every quart of S. M. A. has contained and still contains sufficient cod liver oil not only to prevent, but also to cure rickets.

In the form of S. M. A. the infant not only gets an adequate amount of cod liver oil, but he likes it, and thrives on it.

Cod liver oil will be found acceptable to all infants and children when given in the form of S. M. A.

Hundreds of physicians have used S. M. A. with excellent results in thousands of cases, and the number is increasing steadily.

Try S. M. A. and you will find that

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- (3) It is highly effective in preventing spasmophilia.
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Write today for the S. M. A. bulletin for physicians.

\*H. J. Gerstenberger et al. I. Studies in the Adaptation of an Artificial Food to Human Milk. Am. J. Dis. Child. Vol. X, Pg. 249-265.

H. J. Gerstenberger et al. II. Studies in the Adaptation of an Artificial Food to Human Milk. (A Report of Three Years' Clinical Experience with the Feeding of S. M. A.) Am. J. Dis. Child. Vol. XVII, Pg. 1.

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Sanitary and Chemical Examinations of  
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Regularity in bowel movements contributes much toward normal, healthful progress, and a knowledge of the number and character of the stools during each twenty-four hours is an important part of the general management of early life and assists much in properly adjusting the diet.

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and you desire to be assured of high grade, reliable endocrine products

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**Ovary Thyroid Pituitary  
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The quality of the product can be no better than the soundness of the raw material.

You realize the importance of having prescriptions filled with desiccated substance obtained from absolutely fresh, sound, glands.

As a subsidiary of Wilson & Co., Packers, we have the distinct advantage of a direct supply of fresh glands.

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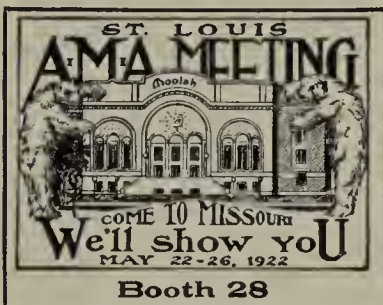
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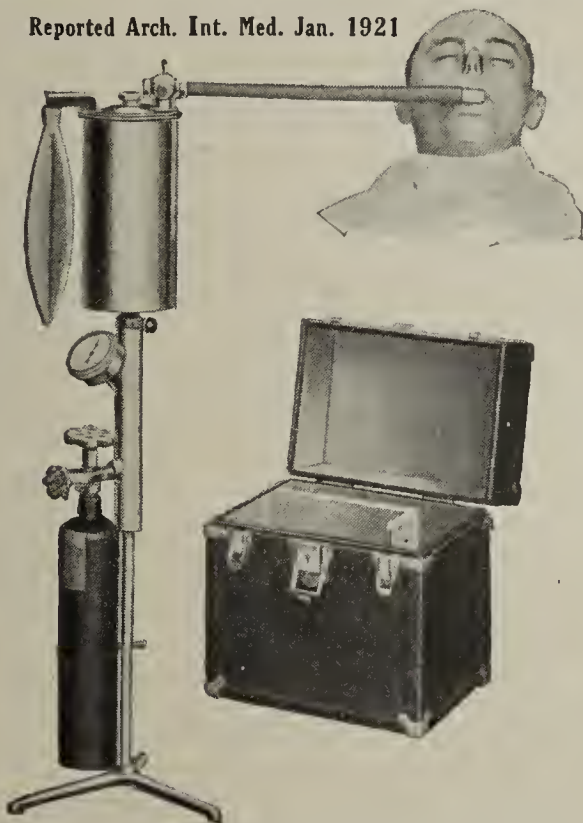
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Importer of

INGRAM Rubber Nipples

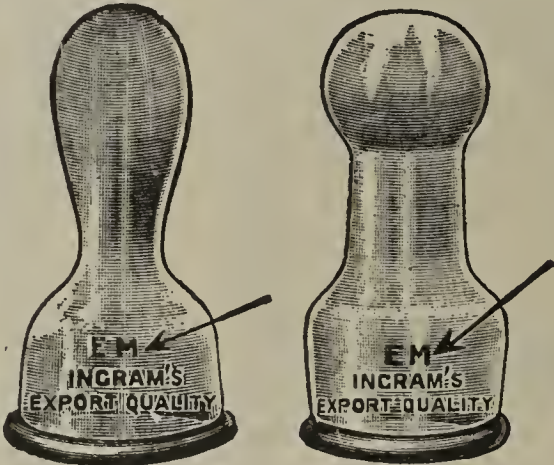


Fig. 225

Fig. H

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For new-born or very weak infants, INGRAM NIPPLES are particularly helpful. Their fine resiliency assists the child in its nursing. By telling the nurse or mother to order Ingram Nipples, you may obviate difficulty and delay in getting the baby started on bottle feeding.

If your druggist cannot supply the genuine Ingram Nipples bearing the initials "EM", one dozen will be sent upon receipt of \$1.00



Fig. H. B.

Fig. 225B

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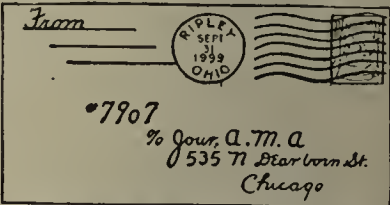
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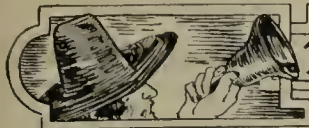
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MONTEFIORE HOSPITAL FOR CHRONIC Diseases. Examinations for positions on the house staff will be held on Thursday, March 30, and Friday, March 31, 1922, at 2 p. m. There are nine vacancies. The term of service is for one year, from July 1, 1922, divided among the following services: medicine, tuberculosis, neurology, general and orthopedic surgery. Members of the house staff, on the satisfactory completion of their service, will be given preference in the annual appointments that are made to the salaried resident staff. Applications for the examinations should be sent to the Medical Director, Montefiore Hospital, New York City. N. Y.★ A

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(Continued on page 22)





THE

## THE MEDICAL MART



21

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## Doctor: When You Read This Page

have on your desk a few postal cards and write for samples or descriptions of the articles mentioned. You will find many items of value.



## Tonics and Sedatives

*A man trained in a narrow groove toward a definite narrow goal cannot be a broad man.*

### The Medical Clairvoyant

*Review of Conan Doyle's most recent vagary in New York Times*

The author states that Mr. Bloomfield of Melbourne, who has medical powers as a clairvoyant, while walking along the street noticed a woman in front of him and saw, by psychic gazing into her anatomy, that she had a growth near the liver. He spoke to her and found she was on the way to the hospital for an operation for what was thought to be cancer. He was present at the operation and pointed out the exact spot of the growth to the surgeon, the growth being extracted and found to be innocuous, Mr. Bloomfield having said that he did not think the growth was cancerous from his clairvoyant view of it.

### NOT INTERESTING

Abie was very quick at mental arithmetic, but on one occasion he failed to volunteer an answer to what the schoolmistress thought was a very simple problem.

"Come," she said. "Two and a half per cent. on \$200 for six months. How much is that? Can't you work out that little sum, Abie?"

"I could, teacher," said the boy, "but 2½ per cent. interest don't interest me."—Pickup.

### FROM THE DOCTOR'S PRACTICE

*Contributed by a Michigan medico*

An old lady patient of mine had been unable to sleep for some time, and I had given her some medicine in capsules, which she evidently had some difficulty in swallowing. Some two days later her grand-daughter came to my office and said: "My grandma wants you to give her some medicine to make her sleep in a bottle."

I gave her some, haven't heard the results yet. H. H. L.

### A MATTER OF REPAIR

The owner of a car of doubtful vintage ultimately concluded that it needed overhauling. After the garage man walked around it a couple of times, he remarked, "That's a good horn you have. Let's jack it up and run a new car under it."—*American Mutual Magazine.*

### Completely Diagnosed

*Letter presented to a Boston physician by a patient with sinusitis*

Dear Mrs. ———:—The examination of your blood by the Abrams test shows the following:

Congenital syphilis—30 ohms.  
Streptococcus infection of the left antrum, left ethmoid, right antrum, right ethmoid, and slight involvement of the right sinus.  
Very slight gonorrheal reaction.  
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The osteopathic examination shows lesions (spinal vertebrae slightly deviated from their normal position) of the first cervical vertebrae, a first, second and third dorsal vertebrae, third lumbar, fifth lumbar, a slight convex curve on the left from the seventh to the twelfth dorsal, a lesion of the left innominate bone.

These conditions are amenable to treatment by the Oscilloclast and osteopathic adjustment.

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Yours truly,

(Continued on page 24)

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(Continued from page 20)

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WANTED—ASSISTANT PHYSICIAN, man, department for mental and nervous diseases, Pennsylvania Hospital; clinical, laboratory and outpatient training offered. Write fully to Dr. Owen Copp, 49th and Market Sts., Philadelphia.★ B

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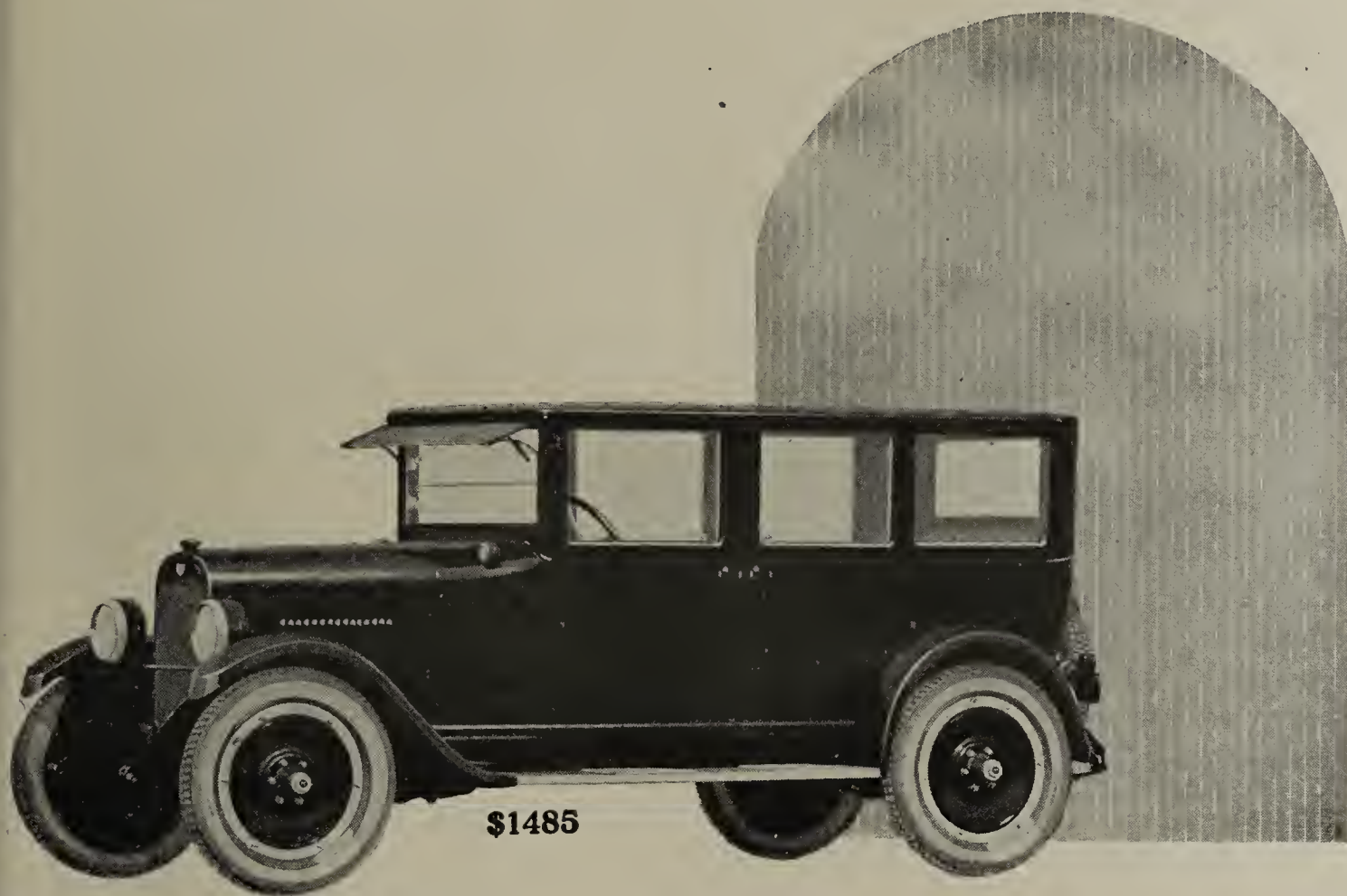
WANTED — BACTERIOLOGIST — MUST have college training and be thoroughly proficient in identification and cultivation of common bacteria in water, sputum, feces, etc.; give references and state experience and salary expected; in Chicago. Add. 3285 B, % AMA.

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WANTED — RESIDENT ASSISTANT IN private sanatorium for mental and nervous cases; young unmarried man, graduate of Class A school, who desires to specialize in this field and in sanatorium management; experience unnecessary but desirable; if progress is shown, salary will be increased; give complete data on education, training, personal history and include character references and photograph; state minimum starting salary acceptable. Dr. Lord, Orchard Springs Sanatorium, R.F.D. 13, Dayton, Ohio. B

(Continued on page 24)





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(Tonics and Sedatives Continued)

### DR. PEPYS' DIARY

March 6.—This day to ye great conference on medical education and there all ye leaders come to talk of ye science of pedagogics and what wrong with medical teaching. Not one among them all however hath brought forth ye idea that ye teacher may be learned in his subject and a master of pedagogics and yet, being without ye personality to inspire ye students, a failure as a teacher. Interesting too that Viscount Bryce hath protested against too much standardization which killeth individuality. One of ye visitors telleth a merry tale of a damsel on whom operation hath been performed for appendicitis. "Doctor," she hath asked of ye surgeon, "do you think ye scar will show?" Whereat he, ye cynic, hath laconically replied: "It ought not to!"

March 8.—This day to see how ye government concerneth itself for ye disabled soldiers. There working a vast concourse of physicians and clerks, and very good too, but so crowded together as to make one blush for ye decency in ye treatment rooms. Whether it be ye same in other dispensaries a matter worthy of notice. One hath related ye old jest "How many work in this place?" to which is given ye answer: "About half of them," but it hath not applied in this instance, for all seemed earnest in their important service.

March 10.—The conference now discussing ye problems of ye hospital and ye dispensary. One hath attacked in particular ye group clinic and ye performance for pay of many unnecessary examinations. It is indeed a good sign that ye profession is ever ready to clean its own house.

### The Helping Hand

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Everson Jones was born four months ago with double club feet.

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The wounds will heal in a short time, and when little Everson gets old enough to walk, he can toddle about on a pair of feet as well formed and strong as any child's, the doctor said.

### A Friend Needed

Letter to Chicago Tribune

"I have a large family and can't afford to buy an incubator. I would be grateful to any one who would let me have one. I will call for it and take good care of it.

G. B."

### THE OLD ONES ARE THE BEST

Mr. Griffin had spent an anxious afternoon at the office and hurried home at an unusually early hour.

"How do you feel, dear? What did the doctor say?" he questioned his wife as she lay on the couch, her eyes half closed.

"Oh, he asked me to put out my tongue," she murmured.

"Yes?"

"And after looking at it he said, 'Over-worked.'"

Mr. Griffin heaved an audible sigh of relief. "I have perfect faith in the doctor, Mabel," said he firmly. "You will have to give it a rest."

### Yes! Yes! Go On!

Social News in Erie (Pa.) Dispatch-Herald

Joh English made a business trip to the home of Joe Chapman on Tuesday.

### The Inspired Nurse

From a Los Angeles Exam. Paper

Question:—What are three physiological functions of the skin?

Answer:—Three physiological functions of the skin are protection. Waste matter is thrown off through the skin in the form of perspiration. Acts as a covering of the body. Also makes body more attractive.

(Continued on page 26)

(Continued from page 20)

W A N T E D—ROENTGENOLOGIST TO take complete charge of the x-ray department in a private diagnostic laboratory, situated in an eastern city of 150,000; all referred work; no private patients' clientele; only well-trained men need apply. Add. 3235 B, % AMA.

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W A N T E D—ASSISTANT PHYSICIAN (male, single, preferred) in private sanatorium for nervous diseases located in the metropolitan district; salary \$1,800 and full maintenance; give qualifications in general medicine and clinical psychiatry. Add. Supt., Box K, Summit, N. J. B

WANTED—ASSISTANT, CHRISTIAN. TO eye, ear, nose and throat specialist; must be able to do refractions; state age, training and send photograph and names of two doctors for reference; salary \$200 per month. Add. 3314 B, % AMA.

WANTED—A WOMAN ASSISTANT PHYSICIAN in a state hospital in central west; salary \$1,800 and maintenance; give full information in first letter. Add. 3269 B, % AMA.

WANTED—ASSISTANT WOMAN PHYSICIAN, state hospital for insane, middle west; graduate Class A medical school; give complete information, age, references and send recent photograph in first letter. Add. 3196 B, % AMA.

WANTED—A YOUNG MAN, SINGLE, AS an assistant physician in a large hospital for the insane in Pennsylvania; must be a graduate of A1 medical school, have good appearance, refined, good health, of good habits and come well recommended. Add. 3215 B, % AMA.

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WANTED—THREE JUNIOR PHYSICIANS —Good opportunity to learn tuberculosis in a 230-bed tuberculosis sanatorium; state salary expected. Add. Superintendent Jewish Consumptives' Relief Society, Edgewater, Colo. C

WANTED—CLASS A PHYSICIANS, LABORATORY technicians for salaried positions; internists, assistants, surgeons, hospitals, sanatoriums, contract, industrial, partnership, group, appointments; if you desire a permanent position anywhere in United States, send for application form. Aznoe's National Physicians' Exchange, 30 N. Michigan Ave., Chicago. C

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WANTED—PHYSICIAN IN TOWN OF 900 in southwestern Washington to take over practice and equipment for \$350; one other doctor here; contracts transferred; leaving for city. Add. 3279 C, % AMA.

WANTED — PHYSICIAN FOR GENERAL practice in connection with clinic 7 miles distant; salary \$225 per month and expenses; office equipment and automobile furnished; investment in clinic of \$1,200 is required. Add. 3284 C, % AMA.

WANTED — TWO PHYSICIANS, WELL trained, with hospital experience, for municipal tuberculosis sanatorium; young, unmarried; salary \$145 per month with maintenance. Apply Hospital Commissioner, St. Louis, Mo. C

WANTED — A RECEIVING PHYSICIAN, Minneapolis General Hospital, at a salary of \$100 per month and maintenance. Write to Dr. Walter E. List, Superintendent, Minneapolis General Hospital.★ C

WANTED—RESIDENT PHYSICIAN WITH experience in tuberculosis work; state qualifications, previous hospital record, etc. Add. Dr. G. Kremer, Supt., Sea View Hospital, Staten Island, N. Y. C

(Continued on page 26)



# Bloodpressure

## Of what Value is it in Physical Diagnosis?

### A FEW REPRESENTATIVE PURCHASERS OF THE **Baumanometer**

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Neurological Institute  
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New York Hospital  
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Equitable Life Assurance Society  
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surance Co.

\*The Metropolitan Life alone is using  
more than 1000 Baumanometers.

To quote the eminent Dr. Crane, "It all depends"  
—upon you. Meaning that, in the final analysis,  
bloodpressure can be just what you want to make it.

GETTING back to fundamentals, the human body is a living thing just so long as the life blood circulates within it—and no longer. The absence of circulation is death. Good health is largely a matter of efficient circulation, which in turn is primarily a matter of pressure. Was it the dawning of these basic facts that impelled the illustrious physiologist Ludwig to say that the discovery of bloodpressure was more important than that of the circulation?

Intelligent study of the circulation is, therefore, only possible if we accurately measure its causative pressure, not alone in the first instance, but every time we take it. And though the instrument employed is but one factor, let it be wrong and even the supremest effort may be nullified. Growing recognition of this fact has had much to do with the increasing importance of bloodpressure today.

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Voluntary Patients Received

Journal ads are the important news from many institutions.

(Tonics and Sedatives Continued)

### An Inspired Poet

Response of an overworked practitioner to a banquet invitation

How in the world can a poor old Doc,  
Who works 'steen hours by the village clock,  
For a pittance of pay and still less rest,  
Find time and money for your grand gab-fest?  
O. C. V.

### A Legal Injunction

Circular issued by a Kansas sanatorium

Dear Doctor: A few nervous patients can be accommodated in a country place, a few miles from Lawrence, Kansas. The treatment is striving to bring about a restitutio ad integrum by enjoining the dilated blood vessels for a certain length of time.

### His Last Lap

Mound Valley (Kan.) Times-Journal

The infant son of Mr. and Mrs. John Richards who reside near Liberty Kansas was buried Sunday. The little one had been ill since birth and the cause of his death was over lapping of the skull bone.

### A NEW PANACEA

Letter received by a laundry supply house in Texas

A—Bros. Please let me know by return mail if your Liquid Blueing is put up Sanitarium as we take it as a family remedy to prevent or cure colds and Lagripp as we have found it to be a dead shot on such Diseases. please answer by return mail as I have been advised it might be unsanitary to take externally. Very truly

Mrs. J. W. Benton.

### A Matter of Numbers

From a pharmaceutical circular

Disease may be regarded as centipedal as an octopus, for its varieties are multiform; but certain conditions are present in so many diseases as to be regarded almost as separate and distinct entities.

### "BALLADE OF THE GLANDULAR HYPOTHESIS"

The newest prophet of the superendocrine cult has recently propounded the dictum that Shelley had a hyperthyroid face. The resulting thyroid-adrenal tension in a writer for the London Observer led him to seek relief in the following:

I.

"What Hormones had that proud Egyptian Queen?

And great Napoleon, who had cause to rue  
Deficiency of the central endocrine

Which finally dried up at Waterloo!

Poor Shelley's optimism was undue,

He never should have dreamed at such a pace;

He said 'The world's great age begins anew';

But Shelley had a hyper-thyroid face.

II.

"There is a strange secretion flows between  
The interstitial cells; I grant it's true

It hasn't yet been actually seen,

Not even by the pioneering few;

Still it will soon be bottled, and on view,

The stuff that made an end of Ilium's race,

And launched a thousand ships into the blue:

But Shelley had a hyper-thyroid face.

III.

"The toad secretes too much adrenalin,

And drunkards are a thymo-centric crew,  
Glandular hyper-functioning has been

Noted in Florence Nightingale; and you

Remember Mr. Julian Huxley drew

Very strange transformations which took place

In certain axolotls in the Zoo:

But Shelley had a hyper-thyroid face.

ENVOI

Prince, let us end our rhymes, they will not do:  
Our gonads may be large and full of grace.

And comely our pituitaries, too—

But Shelley had a hyper-thyroid face."

(Continued from page 24)

**WANTED—PHYSICIAN—CATHOLIC** preferred; to locate in large Catholic community in central Michigan; no other physician; this is a chance to make \$5,000 the first year; the community needs a physician badly and will support him whole-heartedly. Add. 3292 C, % AMA.

**WANTED—PHYSICIAN WELL TRAINED** in dermatology-syphilology and radium therapy to locate in town of 60,000; state age, medical school, experience, religion and weight. Add. 3277 C, % AMA.

**WANTED—RADIOLOGISTS AND ELECTROTHERAPISTS;** Dr. Sinclair Tousey, 850 Seventh Ave., New York, desires a successor to his practice and equipment; the latter includes x-ray, electric light, radium, static, high frequency and vibration; lease expires October 1; may be renewed for three years; will do everything possible to advise and assist successor. C

**WANTED — ABLE PHYSICIAN, TOWN** 1,000; western Missouri; unexcelled territory; established office practice in x-ray and electrotherapy; equipment worth \$3,000 at \$1,250 cash. F. E. Dargatz, M.D., Belton, Mo. C

**WANTED — COMPETENT SURGEON** TO establish small hospital in good town of 700 population in western South Dakota; citizens and local physicians will cooperate; ideal climate, especially for pulmonary troubles. Add. Commercial Club, Custer, S. D. C

### INTERNS WANTED

Hospitals marked with a star (★) are on the list of those approved for intern training by the Council on Med. Ed. & Hosp. of the A. M. A.

**WANTED — TWO INTERNS, ALTERNATING** six months' service in x-ray and genito-urinary departments; active teaching staff; 400-bed hospital; write and give references before April 15. Supt. Louisville City Hospital, Louisville, Ky.★ D

**WANTED — INTERNS — ST. JOSEPH'S** Hospital, Pittsburgh, Pa.; general rotating service, beginning July 1, 1922; laboratories in charge of full-time men; record of 50 per cent. autopsies. Write Intern Committee.★ D

**WANTED — INTERN FOR EYE, EAR,** nose and throat practice; give reference, age and photograph; salary \$900 per annum. Add. 3315 D, % AMA.

**WANTED—INTERN—ONE WITH PREVIOUS** hospital experience preferred; salary \$50 per month and maintenance. Apply C. Hollister Judd, M.D., Woman's Hospital, Detroit, Mich.★ D

**WANTED — STATE UNIVERSITY OF** Iowa Medical School Orthopedic Service, intern from April 1, 1922, to July 1, 1923; 130-bed service; both adults and children; also opportunity for research and postgraduate work; \$125 per year and maintenance. A. Steindler, University Hospital, Iowa City, Iowa.★ D

**WANTED — INTERNS FOR IMMEDIATE** appointment; the Garfield Memorial Hospital, Washington, D. C., offers attractive rotative service. For information and particulars apply to the Superintendent of the hospital.★ D

**WANTED—FOUR INTERNS AT ST. MARGARET** Memorial Hospital, Pittsburgh, Pa.; mixed rotating service of one year beginning July 1, 1922; full maintenance and \$25 per month. Add. Superintendent.★ D

### NURSES WANTED

**WANTED—SUPERINTENDENT** OF nurses, assistant superintendents, surgical, general duty, supervisors, instructresses, laboratory technicians desiring hospital positions anywhere in United States, write for free book. Aznoe's Central Registry for Nurses, 30 N. Michigan Ave., Chicago. T

**WANTED — REGISTERED NURSE** FOR superintendent of 20-bed private hospital; not under 35 years of age; references required; must be available at once; salary \$125 and maintenance; location, Kansas. Add. 3294 T, % AMA.

(Continued on page 28)





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### Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

TRAITÉ DE PATHOLOGIE MÉDICALE ET THÉRAPEUTIQUE APPLIQUÉE. Publié sous la Direction de Emile Sergent, Membre de l'Académie de Médecine, Médecin de la Charité, L. Ribadeau-Dumas, Médecin des hôpitaux, et L. Babonneix, Médecin des hôpitaux. Tome IV. Appareil Circulatoire. Par Pr. Vaquez, Lian, Heitz, Leconte. Paper. Price, 45 francs. Pp. 1071, with 161 illustrations. Paris: A. Maloine et Fils, 1922.

AMERICAN FROHSE ANATOMICAL CHARTS. Plate No. 10. Chart 10a. Male Genito-Urinary Organs (External and Internal). Chart 10b. Female Genito-Urinary Organs (External and Internal). From Original Drawings by Max Brodel, Professor of Medical Drawing Johns Hopkins Medical School. Price, \$16.50. Chicago: A. J. Nystrom & Co.

AN ESSAY ON THE PHYSIOLOGY OF MIND. An Interpretation Based on Biological, Morphological, Physical and Chemical Considerations. By Francis X. Dercum, A.M., M.D., Ph.D., Professor of Nervous and Mental Diseases in the Jefferson Medical College. Cloth. Price, \$1.75 net. Pp. 150. Philadelphia: W. B. Saunders Co., 1922.

THE VITAMINS. By H. C. Sherman, Professor of Food Chemistry, Columbia University, and S. L. Smith, Specialist in Biological and Food Chemistry, United States Department of Agriculture. Cloth. Price, \$4 net. Pp. 273, with 20 illustrations. New York: The Chemical Catalog Company, Inc., 1922.

A TEXT-BOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, Ph.D., M.D., Sc.D., Professor of Physiology in the Johns Hopkins University. Eighth edition. Cloth. Price, \$6.50. Pp. 1053, with 308 illustrations. Philadelphia: W. B. Saunders Company, 1922.

LEHRBUCH DER GRENZGEBIETE DER MEDIZIN UND ZAHNHEILKUNDE FÜR STUDIERENDE, ZAHNÄRZTE UND AERZTE. Bearbeitet und Herausgegeben von Dr. Julius Misch. Second edition. Volumes 1 and 2. Paper. Price, 1200 marks. Leipsic: F. C. W. Vogel, 1922.

AMERICAN PRINCIPLES. A Series of Brief, Non-Partisan Suggestions on Public Questions, Designed Especially for our Young and our New Citizens. By E. P. Lowe, M.D. Cloth. Price, \$1.75. Pp. 183. Published by the Author, 1921.

FOODS OF THE FOREIGN-BORN IN RELATION TO HEALTH. By Bertha M. Wood, Dietitian, Food Clinic, Boston Dispensary. With a Foreword by Michael M. Davis, Jr. Cloth. Price, \$1.25. Pp. 98. Boston: Whitcomb & Barrows, 1922.

PAPERS FROM THE MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH AND THE MEDICAL SCHOOL. I. 1915-1920. Cloth. Price, \$10, net. Pp. 695, with 203 illustrations. Philadelphia: W. B. Saunders Company, 1921.

MODERNE BIOLOGIE. Spezifische und Unspezifische Reiztherapie. Von Dr. Hans Much, Professor an der Universität Hamburg. Paper. Price, 12 marks. Pp. 66. Leipsic: Curt Kabitzsch, 1922.

BASAL METABOLISM: ITS DETERMINATION AND APPLICATION. Edited by Frank B. Sanborn, M.S. Cloth. Price, \$6 net. Pp. 282, with 60 illustrations. Boston: Sanborn Company, 1922.

THE HABIT OF HEALTH. How to Gain and Keep It. By Oliver Huckel. Cloth. Price, \$1 net. Pp. 128. New York: Thomas Y. Crowell Co., 1922.

WHAT IS CHRISTIAN SCIENCE? By M. M. Mangasarian. Paper. Pp. 63. Chicago: The Author, 1921.

EPIDEMIOLOGICAL INTELLIGENCE. Eastern Europe in 1921. Paper. Pp. 53. Geneva: League of Nations, Health Section, 1922.

(Continued from page 26)

WANTED—INSTRUCTRESS OF NURSES —110-bed hospital, accredited training school; send references and photo with application. Apply to Supt. of Nurses, Highland Park General Hospital, Highland Park, Mich.\* T

### LABORATORY TECHNICIANS WANTED

WANTED—LABORATORY TECHNICIAN—Expert technician capable of doing blood chemistry, bacteriology, serology and clinical microscopy; large hospital, middle west; must be college graduate; give details as to training, experience, salary and references in first letter. Add. 3095 V, % AMA.

WANTED—TECHNICIAN FOR LABORATORY in Chicago; must be well trained in all chemical and microscopical work and careful and conscientious worker and able to work without supervision; give experience, references and salary expected. Add. 3286 V, % AMA.

### PARTNERS WANTED

WANTED—OBSTETRICIAN AND GYNECOLOGIST to become a partner in an established group; will require investment; must be of the highest type personally and professionally; state age, training, experience, giving full particulars; further details will be furnished if first application is satisfactory. Add. 3311 G, % AMA.

WANTED—ASSISTANT OR PARTNER TO general practitioner; man competent to do all major surgery and general practice; must be hustler; state qualifications and references; send photo. Add. 3313 G, % AMA.

WANTED—EXPERIENCED CLINICAL pathologist to enter partnership in a well-established clinical laboratory west of Chicago; splendid opportunity for right man. Add. 3257 G, % AMA.

WANTED—PARTNER—YOUNG MAN TO take over one-half interest of well-established eye, ear, nose and throat sanatorium; has grown too big for one; suburb of New York; experience unnecessary; fair investment expected. Add. 3167 G, % AMA.

### PARTNERSHIP WANTED

WANTED—FIRST-CLASS GENERAL practitioner to work in partnership with general surgeon. Add. 3217 H, % AMA.

WANTED—OTOLARYNGOLOGIST, THOROUGHLY trained in every phase of modern otolaryngological diagnosis and surgery; F.A.C.S.; would like to associate himself with busy specialist or established group; will go anywhere, but must be assured of a service in a modern hospital. Add. 3290 H, % AMA.

WANTED—EXPERIENCED EYE, EAR, nose and throat specialist desires association with a clinic, group or individual; am 36, married, graduate Class A college; can give best of references. Add. 3288 H, % AMA.

WANTED—EYE, EAR, NOSE AND throat man, qualified, two years' experience desires association with group or busy man; will buy practice; cash for the right proposition. Add. 3245 H, % AMA.

### GROUP PRACTICE

WANTED—ASSOCIATION WITH GROUP, busy practitioner or surgeon, so I can devote most of my time to surgery; aged 34, married, Mason; 5 years' experience in general practice and 5 mostly surgery; am running small hospital, but want town of not less than 3,000; can leave any time; plenty of references. Add. 3299, % AMA.

### LOCATIONS WANTED

WANTED—UNOPPOSED LOCATION IN Indiana, Ohio or Kentucky; requisites: rich agricultural country, small farms and good roads; village with some conveniences; will consider small amount of real estate (preferably none). Add. 3118 E, % AMA.

WANTED—TO BUY A PRACTICE IN Central, southern, southwestern or southeastern Iowa; town of 1,200 to 2,500 without hospital; have the cash and mean business. Add. 3280 E, % AMA.



**WANTED — LOCATION OR PRACTICE**  
for eye, ear, nose and throat man; Pennsylvania, New Jersey or Maryland. Add. 3282 E, % AMA.

**WANTED — LOCATION IN MINNESOTA**, with or without property; married; Protestant; A1 schooling and internship; 1 year's general practice; German speaking community preferred; not necessary. Add. 3287 E, % AMA.

**WANTED—LOCATION. ASSOCIATION OR** position; scientific, medical degrees; experience private practice; over 4 years' training 500-bed hospitals; chiefly surgical and obstetrical; capable surgeon; excellent recommendations; prefer city 25,000 or more; central states. Add. 3009 E, % AMA.

**WANTED—LOCATION IN TEXAS, OKLA-**homa or Missouri city of 2,000 to 25,000; in general practice 14 years; Class A school and postgraduate work; be ready this summer; would consider partnership with right man. Add. 3184 E, % AMA.

**WANTED—ROENTGENOLOGIST WISHES** to become member of medical and surgical formed or now forming; will purchase practice of one desiring a change or will consider partnership, assistantship or institutional work, full or part time; future considered more than immediate compensation. Add. 3256 E, % AMA.

**WANTED—LOCATION OR ASSOCIATION** with surgeon or general practitioner; American, single, 34, Catholic, speak German; B.S., M.D., A school; finishing 7 years' general hospital training; references; prefer city with hospital; available after July 1. Add. 3242 E, % AMA.

**WANTED—LOCATION — WILL PAY \$25** for information concerning a good location for surgical practice in New York, Pennsylvania, Illinois or Nebraska; by competent surgeon of 10 years' experience; hospital references. Add. 3231 E % AMA.

**WANTED—LOCATION OR ANY KIND OF** opening; do general surgery; no objection to general practice; prefer Kansas, Nebraska or mountain states; aged 39, married, Mason; major in late war. Add. 3154 E, % AMA.

**WANTED—LOCATION OR WITH GROUP** practice by experienced eye, ear, nose and throat specialist; middle west preferred; licensed Wisconsin and Illinois; available April 1. Add. 3221 E, % AMA.

**WANTED—LOCATION OR ASSOCIATION** with busy physician and surgeon in an Oklahoma city of not less than 15,000; have had special training in obstetrics and surgery; at present am serving as surgical intern in a large hospital; if interested, reply at once, as first good offer will be accepted. Add. 3212 E, % AMA.

#### LOCUM TENENS WANTED

**WANTED—MAY 1, LOCUM TENENS FOR** 6 months; general practice in a prosperous Minnesota town; prefer one looking for a good location; if satisfactory will sell the practice; give all information in first letter. Add. 3301 F, % AMA.

#### LOCUM TENENS WORK WANTED

**WANTED — LOCUM TENENS WORK—** Doctor, 45 years, wishes locum tenens until October 1 in Illinois or reciprocating states; questions cheerfully answered. Add. 3305, % AMA.

#### NURSES LOCATIONS WANTED

**WANTED—STATE REGISTERED GRADU-**ate nurse desires industrial office, public health or dispensary appointment; references. 1352, Aznoe's Central Registry for Nurses, 30 N. Michigan Ave., Chicago. W

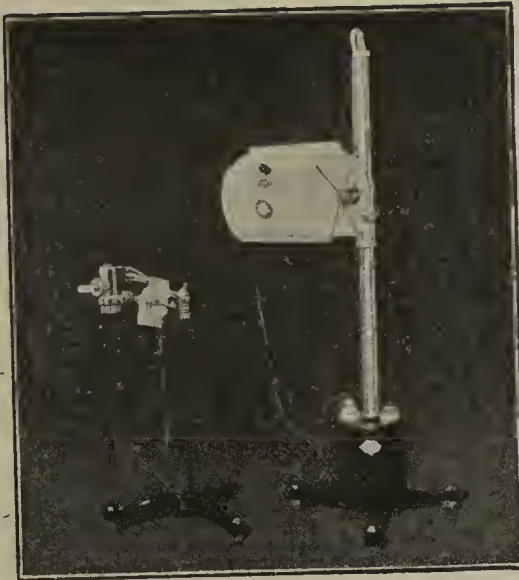
**WANTED—GRADUATE NURSE DESIRES** a position, public health work in Oklahoma; state registered in Arkansas; excellent references. 1355, Aznoe's Central Registry for Nurses, 30 N. Michigan Ave., Chicago. W

**WANTED — GRADUATE NURSE, STATE** registered in Arkansas, desires public health appointment or head ward nurse in hospital, central or northwest. 1354, Aznoe's Central Registry for Nurses, 30 N. Michigan Ave., Chicago. W

(Concluded on next page.)

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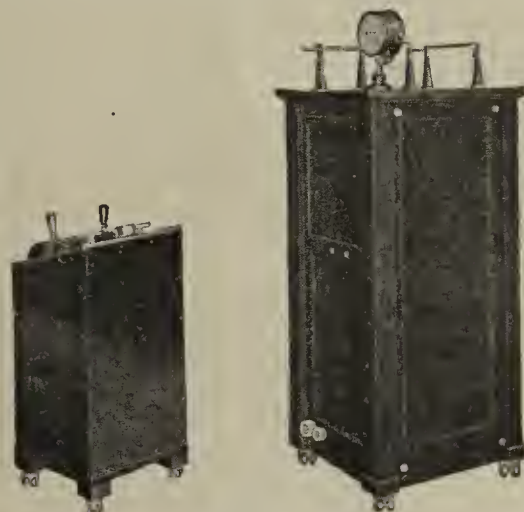
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(Continued from preceding page)

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**WANTED—SUPERINTENDENT** — SUPER-intendency of 50 to 100-bed modern hospital desired by registered nurse, with several years' successful executive experience; east or north-ern states preferred. Add. 3204 W. % AMA.

**SITUATIONS WANTED**

**WANTED — SITUATION—ROENTGENOL-**ogist, many years of experience, excellently trained, modernly thorough in major technique, contemplates change; 5 years roentgenologist to one of the largest cities; please give main factors in first communication. Add. 3050 I, % AMA.

**WANTED—POSITION AS ASSISTANT TO** internist; registered nurse; 3 years' experi-ence in all clinical laboratory work, x-ray tech-nic and physics; also knowledge of short hand; holding certificates; will go anywhere. Add. 3074 I, % AMA.

**WANTED — TROPICAL APPOINTMENT,** traumatic surgery, superintendent, public health, mining, industrial position; Class A graduate; can accept appointment on day's no-tice. 1353, Aznoe's National Physicians' Ex-change, 30 N. Michigan Ave., Chicago. I

**WANTED — YOUNG PHYSICIAN,** 29 years old, good health and pleasant appear-ance, holding at present an important execu-tive position, but desiring to make a change, would like position as assistant superintendent or similar in a tuberculosis sanatorium; have had extended training in tuberculosis, pathology, bacteriology, x-ray work and gastro-intestinal diseases; can speak and write English, Spanish, French and German. Add. 3295 I, % AMA.

**WANTED—SITUATION — PHYSIOTHER-**apy trained nurse, with Pennsylvania license for massage and allied branches, wishes relief work for summer vacations; electrotherapy, hy-drotherapy and heliotherapy preferred; will give some massage and medical gymnastics if de-sired. Add. Jane Chumard, % Mrs. J. D. Stocker, Jermyn, Pa. I

**WANTED—POSITION AS MEDICAL DI-**rector or executive head, institution for com-municable diseases; graduate Al university and hospital; 2½ years' intensive training, exclu-sively infectious diseases; endoscopy, intuba-tion, all modern methods; municipal or private institution any part of U. S. considered. Add. 3309 I, % AMA.

**WANTED—YOUNG PHYSICIAN DESIRES** charge of laboratory and x-ray department or anesthetics in a modern hospital or with group; initial income not important, but position must offer a good future; go anywhere. Add. 3312 I, % AMA.

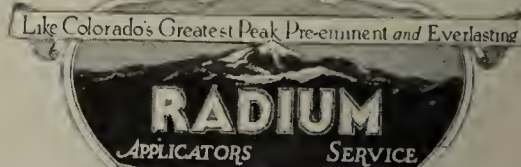
**WANTED — SALARIED APPOINTMENT,** surgery, ophthalmology, obstetrics, assistant-ship; Rush Medical College graduate; Wiscon-sin or Illinois. 1357, Aznoe's National Physi-cians' Exchange, 30 N. Michigan Ave., Chicago. I

**WANTED—GRADUATE A SCHOOL — EX-**perience: internship; army service; private practice; resident physician; associate in inter-nal medicine; aged 34; will consider opening for ensuing year, preferably in teaching institu-tion. Add. 3173 I, % AMA.

**WANTED—SALARIED POSITION — NINE** years in private practice, 4 years' experience in hospital, with mental diseases; reliable con-scientious worker; good references; Protestant; one child: American; Odd Fellow, K. of P. Add. 3233 I, % AMA.

**WANTED — ASSISTANT BACTERIOLO-**gist and serologist, with 3 years' experience, graduate foreign medical university, wishes po-sition as assistant in medical analysis labora-tory or bacteriological and serological manu-factory. Add. 3234 I, % AMA.

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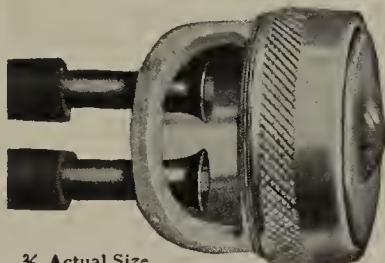
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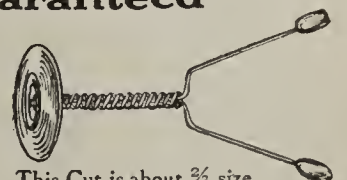
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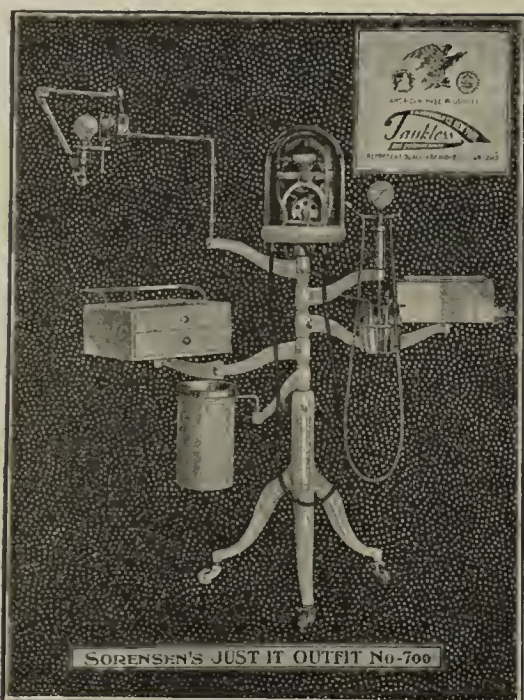
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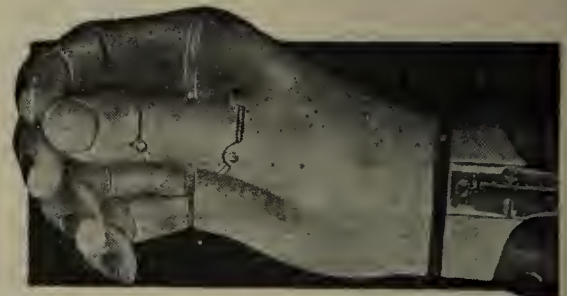
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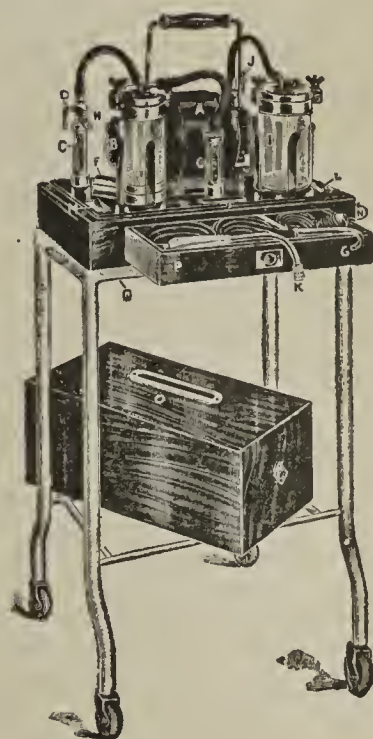
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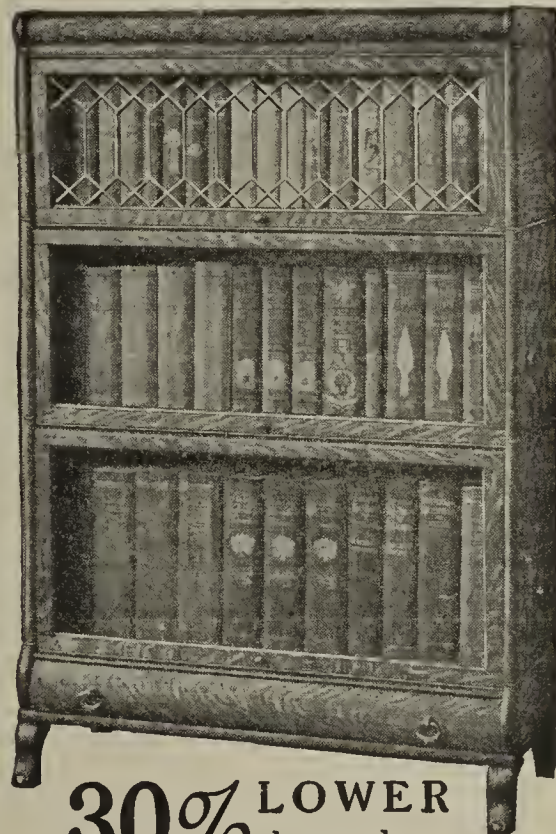
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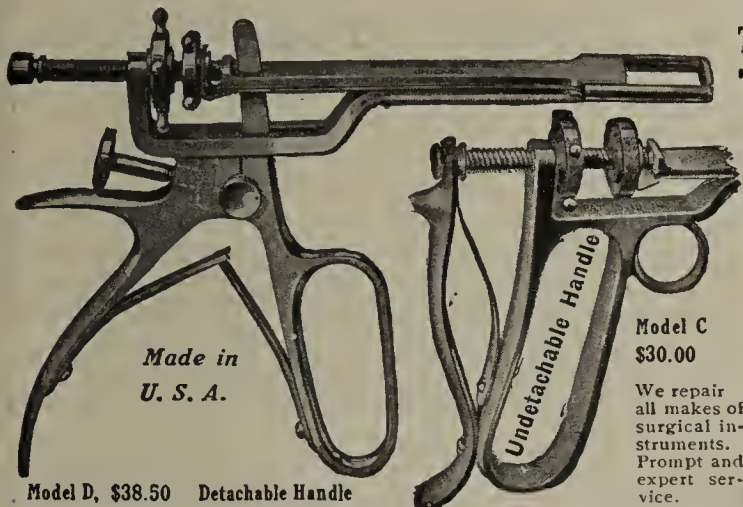
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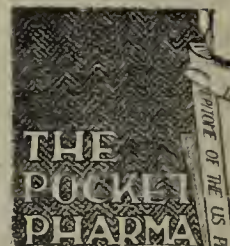
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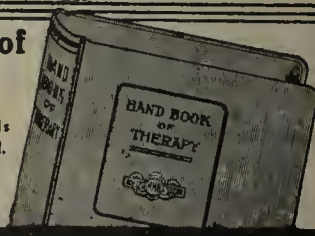
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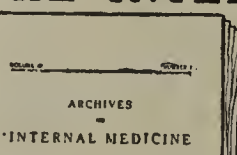
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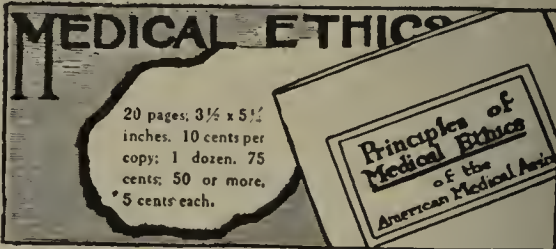
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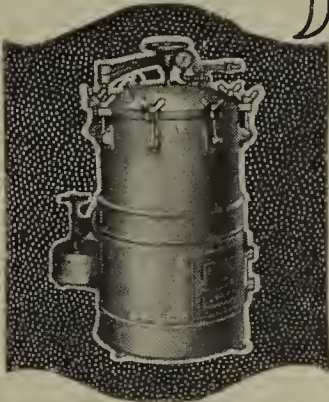


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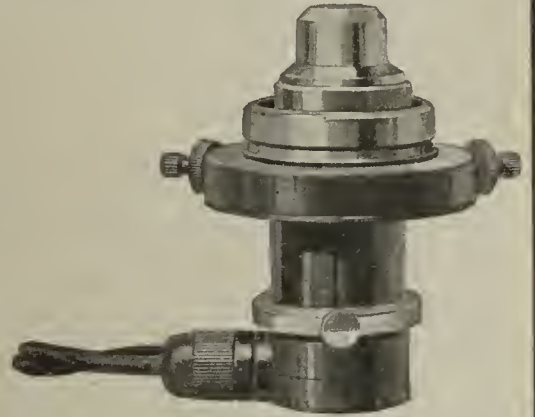
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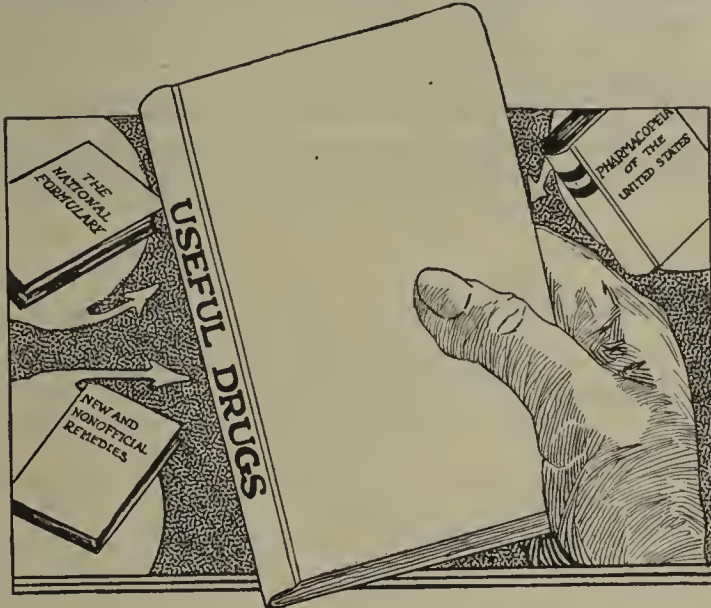


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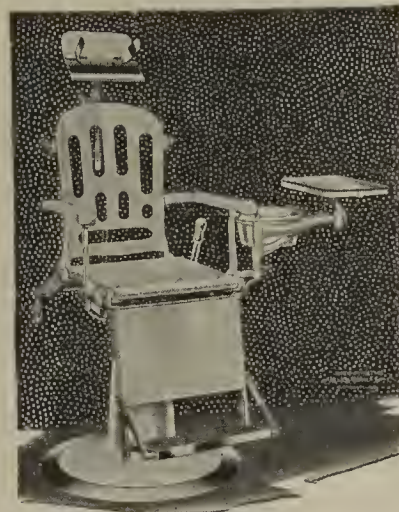
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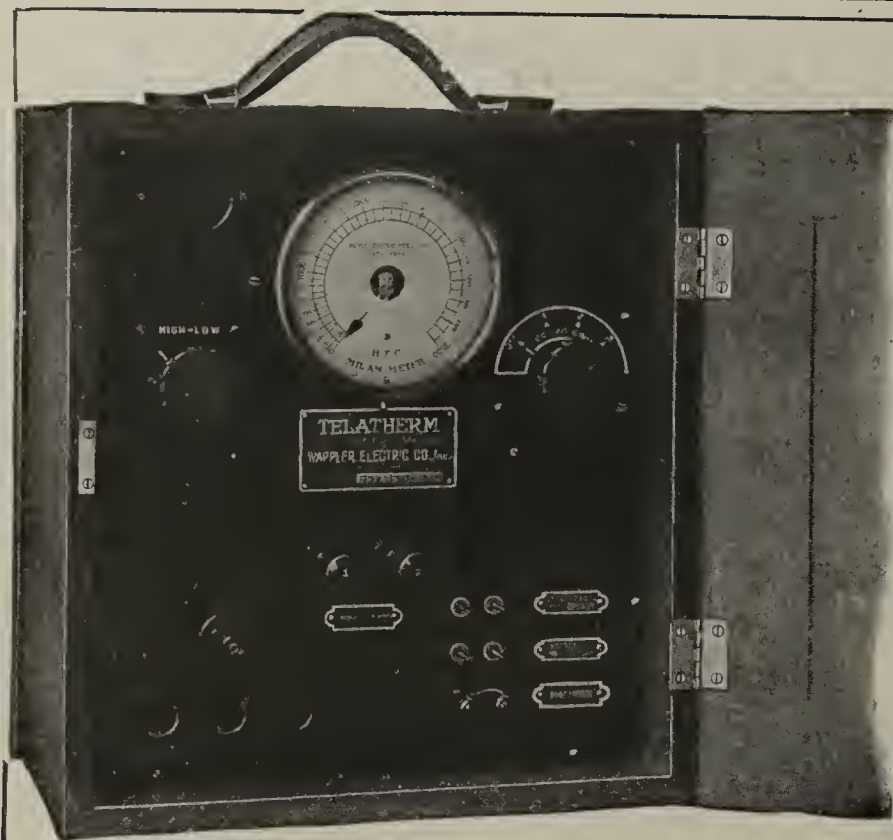
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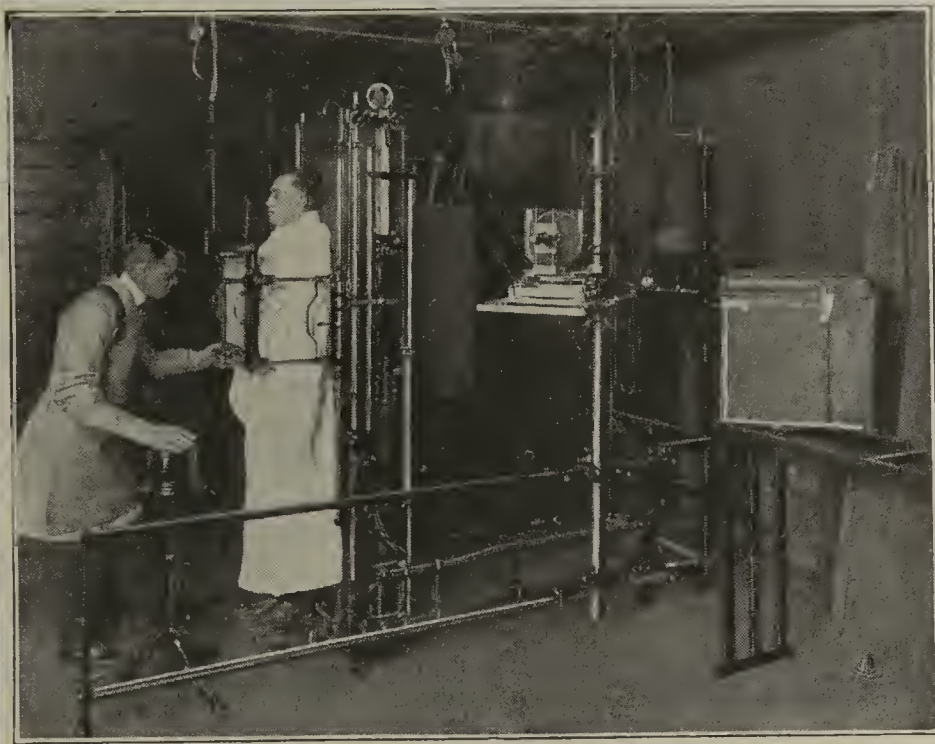
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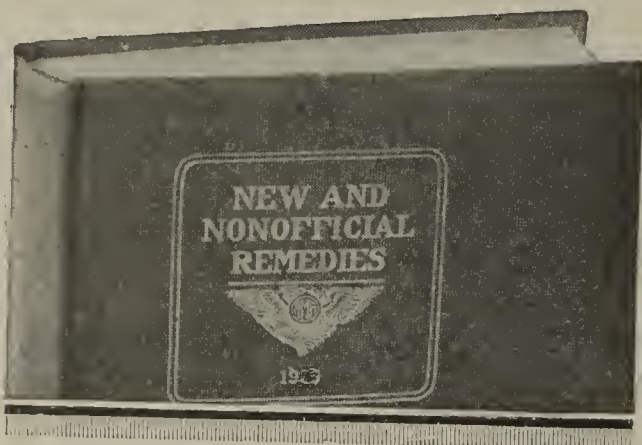
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10:00 to 12:00	Dr. Scott Medicine VII	Prof. Hamann Surgery III	Dr. D. T. Thomas Gynecology II	Dr. Sanford Genito-Urinary III	Dr. Maschke Medicine IV	Dr. Ruh Pediatrics IV Dr. Stoner Medicine XI
1:30 to 2:30 2:30 to 3:30	Prof. Karsner and Dr. McConnell Pathology I	Prof. Gerstenberger and Dr. Brigman Pediatrics III	Dr. Weber Surgery IV	Prof. Cummer and Dr. Ulrich Pathology IV	Dr. Birge Surgery VI	Dr. Rockwood and Assistants, Warrensville Tuberculosis Sanit. Tuberculosis I
3:30 to 5:00	Dr. G. F. Thomas Roentgenology I	Prof. Bill Obstetrics (4 to 5)	Prof. Cole Dermatology I	Prof. Karsner, Path. II or Dr. Graham Pathology III	Prof. Cummer and Dr. Ulrich Pathology IV	

## JUNE

8:00 to 10:00	Prof. Hoover Medicine I	Dr. Blankenhorn Medicine II	Prof. Bunts Surgery II	Prof. Hoover Medicine I	Prof. Lower Genito-Urinary I	Dr. Christie Medicine III
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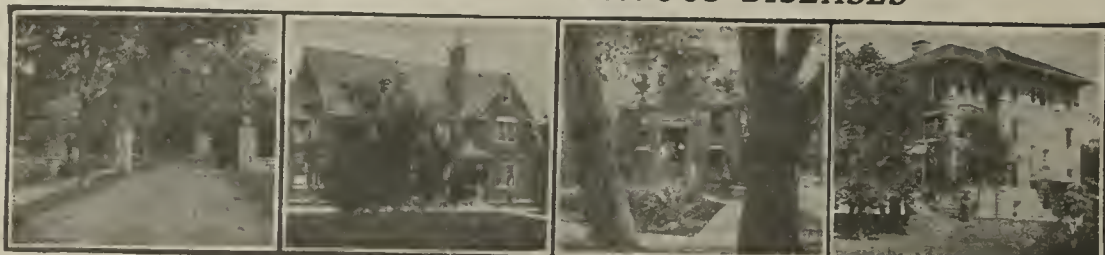


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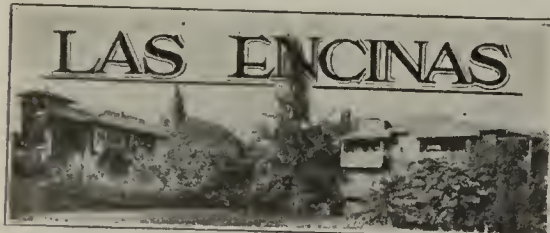
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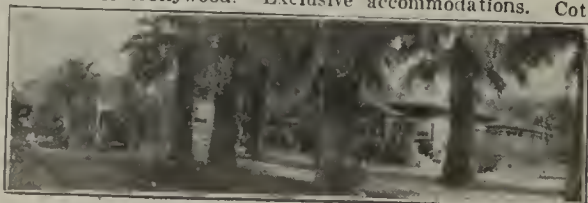
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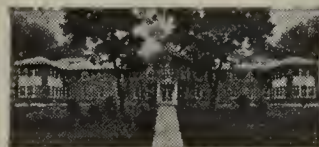
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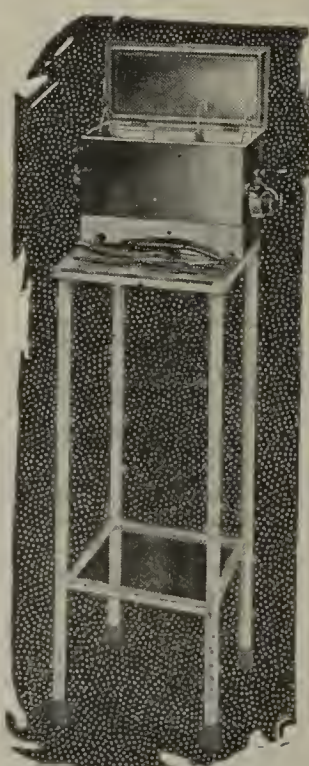
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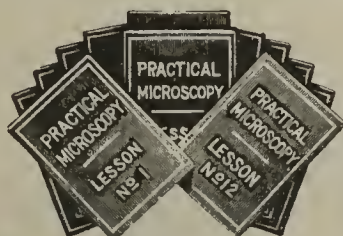
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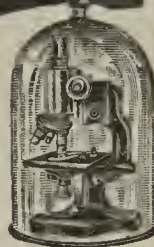
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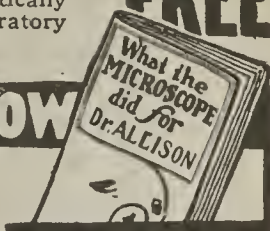
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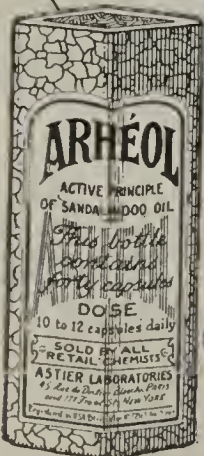
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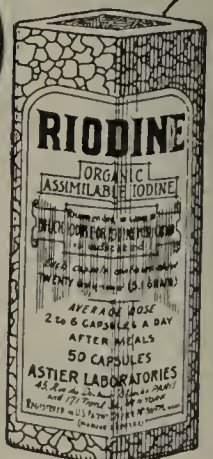
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